

Quantum agriculture: bridging frontline physics and intuitive knowledge of nature?

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Introduction

Over the last decade all over the world a series of post-organic – energetic – farming techniques has started to emerge. These techniques tend to emerge at farm level and the major claims made by practitioners are concerning higher productivity, increased animal wellbeing, environmentally sound and ‘energetically’ healthier food. Moreover, these claims are challenging from a paradigmatic perspective: understanding nature from ‘front-line fundamental physics’ may come close to understanding it via ‘traditional knowledge’. For the purpose of this essay we will distinguish two sub-sets of ‘energetic’ techniques: quantum farming and intuitive farming.

Understanding the worldviews behind both these farming techniques may be relevant in the context of our global reflections on sustainable development, as Compas seeks to develop. In this paper I try to contribute to shaping an approach for systematic paradigmatic reflections starting from the various farming practices.

Inventory of energetic farming principles

Last year during a sabbatical I had the opportunity to prepare a survey of emerging ‘energetic-farming’ techniques among farmers all over the world (Kieft, 2005).

Many of these techniques could be labelled ‘electromagnetic farming’. They build on the relatively recent perception that the biosphere surrounding our planet has developed over millions of years within a global electromagnetic field. Therefore all life must be sensitive to electromagnetic ‘information’. Photosynthesis that takes place via green-yellow light (wave-length around 570 nanometres), only a very small part of the electromagnetic spectrum, presents a clear example. But other techniques using sound and other frequency-patterns, or techniques to correct disturbed earth-magnetism also appear to be effective. Dozens of dairy farmers and crop growers in the Netherlands are actively experimenting with these techniques. In North America and Australia dozens of farm-advisors have jumped on these trends: a new market is emerging for advice as well as for products.

Farm magazines from Australia (Sait, 2003) and North America (www.AcresUSA.com) are publishing first hand experience. In Europe relevant information was also detected – but has not yet been explored – in Russia, Hungary, Rumania and Bulgaria. Formal research has been going on for some years now at universities in India and Austria. In the Netherlands the ‘Atlas of innovating dairy

farmers' (in Dutch, Wolleswinkel et al., 2004) was the first publication of these techniques based on direct interviews with farmers.

As our worldview and our understanding of processes of life change, so do our farming techniques. A chemical view of those processes has led us towards developing chemical techniques to control the processes. A biological view develops biological farm management. And so an 'electromagnetic' perspective – almost unavoidable – brings forth electromagnetic techniques in agriculture.

Indeed, in practice dozens of farmers are experimenting, and they are adapting their view of themselves and their farms. Some are even starting to re-define food-quality. These farmers base essential management decisions on 'energetic' monitoring. Most users claim positive results: improved productivity, increased animal well-being and animal health, environmentally sound methods, lower costs and sometimes higher food quality, resulting in improved health of the members of the farming family themselves.

The variety of techniques they apply is broad. We have – provisionally – subdivided them into five categories.

Applying specific frequency-patterns to plants or animals. Sound-broadcasters on crop fields are an example (Box 1). And perhaps traditional techniques of singing and drumming in Sri-Lanka work on the same principles (Helvetas Sri Lanka, 2001). Ultra-sonic devices for chasing away mice or ultra-violet light for catching (and electrocuting) flies are already easily available in garden-shops. In the domains of much higher frequencies we find the Para-TB box, which claims to reduce the incidence of paratuberculosis in dairy cattle (Wolleswinkel et al., 2004).

Box 1 Sonic Bloom: Foliar fertilisation with sound

The method combines a sound broadcaster (4000 to 6000 Hz) with a nutrient-spray. The sound, emitted some 15 minutes before fertilizing, opens the stomata, enabling them to absorb more water, nutrients, oxygen, carbon dioxide and other gases. The nutrient-spray delivers 55 micro-elements, amino-acids and water plants. This combi-treatment results in higher production, more tasty fruit, longer shelf-life and higher nutritional values. Indonesian research reports a 100% increase in production of rice, tea and cacao. Comparable experiences have been reported from Japan. Experiments show that sound treatment for a period of 45 minutes, just before spraying herbicides, reduces the required doses by 50 to 80%.

See www.earthpulse.com/science/plants.html.

See Paul Oliver (2002).

See www.ecosonic.net

See www.sonicbloom.com

Electromagnetic fields. If one conceives of the electromagnetic fields around the earth, it makes sense to try to correct irregularities or disturbances in the (intersections of) field-lines. The Dutch 'BronCorrector' has been available since the 1950s, and the 'Energie Box Bovis' came onto the market in 2005. See www.broncorrector.com.

Managing cosmic information. This type of information might consist of vibrations in the highest frequency domains of the electromagnetic spectrum (Lovel, 2002). In India the relatively recent Sanjeevan System is based on philosophy and techniques of Prana-energy. Certain cosmic forces are caught by specific plants, prepared and sprayed over crops. The results are promising, with 30-50% production increase or higher resistance against diseases and longer shelf-life. In bio-dynamic agriculture the same shift is already taking place from applying cosmic information collected in 'matter'-preparations towards electromagnetically broadcasting 'information'. This seems to have comparable effects on plant growth to those of material preparations (Box 2).

Box 2 BioDynamics and Sanjeevan system

Bio-dynamic agriculture researcher Hugh Lovel (2002) developed 2-metre-high field-broadcasters, emitting specific energy patterns to fight weeds and insects. One broadcaster can handle fields of up to 1000 hectares. 'Field broadcasting can revolutionize agriculture, fertilization would gradually decrease, particularly the use of nitrogen fertilizers. ... Its safety, simplicity and low cost ...'

The **Sanjeevan system** uses the solar, lunar and cosmic energies stored by plants. According to this system each and every plant receives these energies, but some plants are identified as having maximum capacity to store [and/or activate] these energies. ... They are collected and cleaned. Specific parts of the plants are used to activate specific energy. A 30:30:40 combination of methanol, cow urine and water is used as solvent. Then the extract is fermented using yeast extract (10 g yeast is taken for 10 litres of solvent). Gases generated during the fermentation are expelled after every 4 to 5 days. The fermentation is completed in one month, after which the solution is filtered. The fermented extract of the plant is considered as the source of specific solar/lunar/cosmic energy. The mother tincture (basic extract) is then potentised 100 times. For this purpose 1 ml mother tincture is added to 10 ml of chlorine free, clean water. This is solution A. One ml of solution A is then taken and added again to 10 ml of chlorine free, clean water, thus obtaining the final solution. It is applied as a foliar or soil application. (Hemangee Jambhekar, 2004)

Applying specific subtle energies that seem to carry 'information'. The hypothesis is that 'structure-information', for example of a chemical, can also be transferred without the chemical matter itself. Some techniques transfer this information indirectly via 'informed' matter, such as Grandeur water (www.grander.com) or Penac powder (www.plocher.de). In other subtle techniques, like radionics, one tunes in directly but at a distance to the object which is to be treated using resonance. I am not aware of any possible positioning of these subtle energies on the electromagnetic spectrum. They are techniques that may be controversial still from a scientific point of view, but interesting results have been reported from field work (Box 3).

Box 3 Energetic agriculture and Eco-therapie

In 'energetic agriculture the farmer manages living organisms by optimising energy fluctuations from the earth and the cosmos. Eco-therapie re-balances these energies for a healthier farm. The farm manager himself becomes stronger. The farm yields healthier produce. This technique works both in organic and conventional farming, even in intensive pig-rearing and in hunting. One pig-farmer in the Netherlands – after one year of Eco-therapie – reported an average of one extra piglet per sow per pregnancy and he reduced his veterinary expenses by half. A shrub-grower reported plants with longer shelf life and better paying clients. See Vermue, 2005; www.ecotherapie.org

Intuitive techniques. A large variety of more intuitive techniques persist, or are emerging and re-emerging on the farming scene. These include intuitive communication with nature, either via instruments like dowsing rods (Perelandra Gardening, 2003) or directly via meditation (e.g. Findhorn). Many of the 'older' techniques probably developed through meditative understanding of nature. Some traditional farming techniques in Bolivia also relate to 'energy' management (Box 4). These may be based on Andean shamanic philosophy and related communication techniques with nature. In this case also I am not aware of any positioning of these energies on the electromagnetic spectrum. But even in the Netherlands dozens of farmers exploring energetic farming accept 'intuitive' and non-scientific information for guiding their farm management decisions.

Box 4 A Bolivian example of 'energetic' farming

This is relevant here in relation to the **shamanic views** in the same cultural area. For many Andean farmers the energy concept [...] plays a crucial role in all life processes. Not only in food quality [] but also in qualifying soil production capacity, health of a house or a plot etc. (personal communication Freddy Delgado, 2005)

It might be relevant to further distinguish different qualities of electromagnetic energies and subtle energies, but that is beyond the scope of this paper.

Developments in modern physics seem crucial for farming

The question may arise whether these techniques are so very new. We find examples of intuitive farming in all areas of the world. Some of them are new indeed, such as the Sanjeevan System and Microvita Farming in India (Box 2). 'New' or rather 'lost' farming knowledge are emerging in the Western world, such as 'trans-matter' techniques based on Global Scaling (ZZB) and the use of radionics in farming, which has been going on for roughly half a century. Others are much older, such as the traditional farming in Bolivia described above. Understanding new 'vibrational' techniques may shed new light on the values and virtues of various old 'intuitive' techniques. Below I explore some developments in 'modern' physics.

1. Fundamental physics has recognised already for years that the humans, as part of the biosphere, are surrounded by electromagnetic fields of energy, but in practice this knowledge was rarely applied. This may now be changing.

All life on earth has developed within the earth's magnetic field. Thinking in terms of electromagnetism therefore is essential if we are to really understand the processes of life. Every single cell of the body is 'surrounded' by or embedded in an electromagnetic field. Billions of these cells shape an energy field around each organism, whether it is a bacterium, a plant, an animal or a human. All living beings are surrounded by their own energy field. NASA has studied these earth- and cosmic magnetic fields intensively (<http://antwrp.gsfc.nasa.gov/apod> see e.g. picture of November 25, 2002).

It is evident, and has already been proven by Russian research, that these energy fields of living beings and of the earth do interfere with each other (Raum&Zeit, 2004). Researchers at the Ludwig Boltzmann Institut in Vienna (Austria) have used very sensitive devices to measure this magnetic influence of specific geographic locations on human bodies (Forschungsstelle für Bio-sensorik, 2002).

2. New theories are emerging in fundamental physics, which make a shift from the Newtonian view of attracting forces between bodies towards emerging 'string-theories' in which interference is through vibrating waves. The smallest 'particles' in which we have learnt to perceive the world, like protons, neutrons, electrons, which are in turn made up of even smaller particles, can also be perceived as super-short elastic strings. Vibrating at higher frequencies they are able to carry more energy, and are able to shape more matter. And the type of this matter depends on the specific vibration-patterns of the strings (Brian Green, 2004).

All matter and all life has a (species-)specific optimum position in the electromagnetic spectrum. Frequencies of different character, even extremely weak ones, may therefore have negative effects on an organism's health. The issue of negative influence is not only a matter of intensity of vibration or radiation but also of specific frequencies (even very weak ones) that are relevant for the particular organism in case (Raum&Zeit, 2004).

With these new 'quantum' and/or 'string' views on nature, the influences of electromagnetic vibrations of sound, light, colour and other domains of electromagnetic vibrations (e.g. ultra-violet -, x-rays, gamma-rays, cosmic radiations on the process of life are becoming clear, and as a result both emerging 'energetic farming' techniques and 'traditional endogenous farming techniques' are starting to become self-evident. For example, Bruce Tainio shows a clear relation between the plant-sap pH and the frequencies emitted by the same plant (Sait, 2003, p. 100). He also relates both measurements to the plant's resistance to diseases and pests and hence also to its health.

3. According to Global Scaling information, not everything is to be found in the genes of living organisms (Raum&Zeit, 2004). It is not only DNA but probably also the electromagnetic field that shapes plant growth. This is however not a matter we will pursue further here.

Basic worldview and knowledge assumptions related to attitude towards nature

Some basic characteristics of these energetic farming techniques differ substantially from conventional farming techniques. Different underlying assumptions and worldview have to be clarified. These relate to fundamentally different human attitudes towards nature and consequently different ways of knowing nature/farming: ‘man and nature as intimately connected and communicating’ versus ‘man as researcher observing and analysing the object of nature’. And this in turn is paralleled by the differences in worldviews, in which nature is animated or not.

In the current conventional wisdom of the West, communication is regarded as taking place through the five senses and instrumental enlargers of these, and these are therefore the only reliable ways to know nature. This is the basic axiom of philosopher Kant, and is broadly accepted in Western science. With this axiom in mind, all other forms of direct or indirect communication with nature are ignored, denied or ridiculed. This attitude may well be a fundamental block in communication between ‘physics’ ways of knowing and ‘intuitive’ ways of knowing.

Compared to ‘conventional’ farmers, energetic farmers seem to have a more holistic worldview, a belief in nature as being informed and communicative, and they trust their intuition as a basis for acquiring practical farming knowledge from soils, plants and animals themselves, from ‘nature-spirits’ or from ‘above’ (Wolleswinkel et al, 2004). They rely much less on formally validated scientific knowledge and often are no longer on speaking terms with conventional extension staff. They suggest that energetic values could be a new health quality indicator for soils, crops and food (electromagnetic radiation levels of soils and food, or Bovis values for subtle energy qualities).

For the purpose of this paper we divide the emerging techniques into two subsets, according to the degree we can understand them from a ‘formal scientific’ point of view or from an ‘endogenous knowledge’ point of view (there is some overlap though):

1. Q-farming, related to electromagnetic and quantum or string understanding of nature
2. I-farming, related to ‘subtle’ energies and intuitive understanding of nature

Set 1 can be understood to a reasonably convincing degree as described above by applying fundamental physics (e.g. quantum mechanics, zero-point energy, super-string theories, Global Scaling etc). For this paper we label Set 1 as ‘Quantum Farming’ (borrowed from Hugh Lovel).

Understanding Set 2 requires an additional hypothesis about the fundamentals of understanding nature. Interestingly a wide variety of such hypotheses is emerging (e.g. hologram structure, functioning of mind, mind-matter relations, orgone-theory, ether-theories, theory of cellular oscillations, theories on subtle energies.) and these seem to resemble more ‘intuitive’ interpretations of the fundamentals of nature. An example of Andean shamanic knowledge will be explored below in this paper. We label Set 2 as ‘Intuitive Farming’. For the sake of comparison we label dominant farming science and practice as ‘Conventional Farming’.

Basic Compas question

This comparison of the assumptions behind Quantum- and Intuitive-farming raises the very challenging and basic question of communication between paradigms. Is it thinkable that the different worldviews of knowing nature might approach each other, or even integrate with each other? It would be feasible to check this by exploring the same techniques from both perceptions of nature.

My conviction is that the above question may be very relevant in the context of intercultural learning and sustainable development, for which we may have to reconsider fundamental human attitudes-towards-nature and the communicational consequences thereof. I perceive the current world development trends as non-sustainable, and I assume the underlying worldviews of this perspective to be fundamental, therefore I believe the subject deserves intensive and urgent attention in the near future, also in farming.

From the perspective of the main questions posed by the Compas programme, a 'two-perceptions' analysis of energetic agriculture may help to provide an increased understanding of the basic nature-philosophies of these farming approaches. It may help as well to develop a new language for communication between intuitive-farming, Q-farming and frontline western science as a way of knowing nature (even if it might initially result in hypothesis formulation only).

How should we proceed?

In distinguishing Q-farming and I-farming, it may be possible to use the concepts and practices applied in these two categories of farming to bridge the gap between the two different basic views-on-nature.

I do not present the techniques for the sake of technical interest, but I focus my reflections here on the basic principles behind the techniques. These relate to the ways in which communication with nature is assumed to take place.

The table below lists a selection of farming techniques in five basic categories, according to the way in which they 'interfere' with nature.

Intuitive farming techniques include Attentive working (I-At, green thumb) and direct communication with nature e.g. in meditation (I-Co).

Quantum farming techniques include broadcasting specific Frequencies (F), capturing and broadcasting Cosmic influences (K) and correcting irregularities in earth Magnetism (M).

Applying 'informed' material and/or subtle Energies (E) could figure under both categories and is therefore very open to interpretation from both worldviews.

Continent	Farming Technique	I-At	I-Co	E	F	K	M
Asia	Hela Govithana, Sri Lanka	A			F		
	Sanjeevan agriculture system, India			E		K	
	Sonic Bloom, Indonesia, Japan				F		
EU	Balancing, Eco-therapie, radionics	A		E			M
	Bovis BioBox			E		K	M
	Old bee-keeping literature		C	E		K	M
	ParaTB boxes, Leen de Vink				F		M
	Animal Health Center, Global Scaling, Switzerland			E	F	K	M
US-Australia	BD Broadcasting Towers			E	F	K	
	Plant Talking System, distance advice		C			K	
	Perelanda Garden + Nature intelligence	A	C	E		K	M
	Power of Prayer on Plants	A		E		K	
	Sound Machines, R. Karbowski, USA				F		
South America	Indian agriculture (Compas Bolivia)	A	C	E			

Table 1 Overview of energetic farming techniques by continent

Understanding intuitive communication with nature

We have already said quite a lot about the perception of nature in fundamental physics. To arrive at a relevant reflection about whether energetic agriculture can form a bridge between fundamental physics and intuitive knowledge, more has to be said about intuitive ways of knowing nature. A challenging case in this respect is presented by anthropologist Jeremy Narby (1999) in ‘The Cosmic Serpent, DNA and the origins of knowledge’. His way of thinking and working seeks the bridging potential between paradigms, starting with language and images. He has explored the origin of the astonishingly broad practical botanical knowledge of (medicinal) plants that shamans in Latin America have and the techniques they use for communication with nature. He formulated the hypothesis that shamans in Latin America – in a ‘defocalised’ state of consciousness after drinking ayahuasco tea – might be able to ‘read DNA’ and the information it contains. During these ‘hallucinations’ the human mind might be able to communicate with the global network of DNA-based life around us. As part of his research he himself took part in ayahuasco-sessions, and so tried in person to bridge the two paradigms and their – apparently – contradicting axioms and inherent ways of knowing. His hypotheses are challenging indeed: the images of ‘pairs of snakes’ appearing during such processes may have their counterparts in the images and wording of ‘double helixes of DNA’ in science. The ‘fluorescing spirits’ may be the counterparts of ‘bio-photon emissions of DNA’. Interestingly, both shamans and physicists perceive spirits and bio-photons respectively as ‘pure light’. Narby also explores the neuro-physical processes related to consumption of such teas, the weak radio waves also emitted by DNA, the quartz-like crystal structure of DNA and so on, all underpinning his hypothesis, both at the level of techniques and at the level of worldview and for both the Q-techniques and the I-techniques.

This hypothesis would indicate that *both ways of knowing*, through apparently contradicting approaches/paradigms, *describe the same reality of nature*, indeed in different *languages* but astonishingly comparable *images*. However, the basic hurdle in communication between both ways of knowing seems to be the mutually excluding paradigms of human-nature relations, which even prevent attempts at communication: shamans assume nature to be animate and able to communicate; Western scientists assume nature to be inanimate and therefore unable to communicate. This seems to result in Narby's hypothesis and shaman knowledge not being accepted as scientifically relevant, which in turn results in non-communication.

More avenues could probably be explored to help fulfil the basic quest in this paper, along the lines of the work –among others- of Fritjof Capra (Tao of Physics), Ken Wilber (hierarchy of energies), Ayurvedan philosophy about understanding nature and its laws and Buddhist literature about the illusion of matter.

Proposal for activities

This case shows clearly that Western science is confronted with – as yet unexplainable – practical experiences and intuitive knowing in farming, and that it is being challenged on its basic assumptions and methods. Our case of Energetic farming might help us to build a paradigm-bridge from the perspective of farming experiences. Such a bridge would help to mutually understand both Quantum agriculture and Intuitive farming and to mutually explore possibilities of observation of and communication with nature from different paradigms. Obviously this would require a very open mind of all participants, beyond their own paradigms. I think it would be worth the effort, however, as it could eventually enrich both ways of farming and both ways of 'knowing nature'.

So again: what might be practical ways of getting this kind of trans-paradigm communication functioning? I present a proposal, with activities in a logical sequence, which I hope will be discussed and improved upon during the Compas conference.

- Make inventories of quantum farming systems and intuitive farming systems. PhD students interview farmers (and researchers) and listen not only to the information but also to the wording and images.
- Select some cases/persons open for experiments with trans-paradigm communication about their farming techniques, results, effects and problems.
- Screen anthropological literature on farming descriptions, communication with nature, etc.
- Screen existing physics-theories related to subtle energies (e.g. quantum vacuum fluctuations, bio/photon measurements, DNA radio/wave emissions, orgone theories) for language and image fits.
- Prepare for trans-paradigm communication:
 - Bring leading scientific institutions and people together (e.g. LBI Vienna, ZZB Germany, Hugh Lovel USA, Bulgarian Agricultural University, Club of Budapest) to prepare for trans-paradigm conversation. (Here we could also include institutions and people from the health sector.)

- Bring leading shaman institutions and people together (e.g. from the Andes, India, Europe) to prepare for trans-paradigm conversation.
- Organise inter-paradigm communication between Q- and I-farming practitioners and researchers/'knowers'. A 'Socratic' approach of posing thoughtful questions might be effective.
- Synthesise content, language, images and methods and deduce commonalities and diversity. Formulate tentative conclusions from emerging evidence or – if possible – hypotheses for further exploration.
- Then, also develop an improved approach for inter-paradigm conversation.
- Publish and train.

In conclusion I would just add that it is important to record visually all interviews and conversations or debates, as this builds a good basis for secondary analysis by all interested participants.

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