

What farmers really need

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Humane Agrarian Centre
Banyan Tree

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We strongly believe that '*nothing can be taught*' and that '*work is the best teacher*'.

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Foreword

Nowadays farmers are in the news either because of suicides or because of the election manifesto of political parties. The solution of the farmers problems became a problem in itself.

Policy makers and intellectuals on government levels worldwide incline towards the idea that farms should be bigger and the number of farmers less. And that farmers should seek employment in other economic sectors, as in their opinion there is no real development in agriculture possible.

Corporate agriculture and supporters of GM crops believe that we should shift agricultural practices into a viable industrial and economic business.

Unfortunately, such a mode of thought is dominant in governmental policy-making and it is the voice of these powerful opinions we often hear in the mainstream media.

Then, social reformers are pointing to the widening gap between the poor and the rich, with most farmers at the poor side.

To solve the agrarian crisis should be the top priority and we'll have to plough in the land of thoughts for better result or yield.

In India, every political party is claiming that it is the real well-wisher for farmers. But the sour truth is that the data on farmers suicide, crop failure and farmers migration from the village show a more and more horrible reality.

Government programs for the welfare of farmers and university research are obviously missing some essential part. This booklet gives us a signal.

Banda, a district in Uttar Pradesh, can be seen as an exemplary spot of the present agrarian crisis. But the views in this booklet, developed in the 'Humane Agrarian Centre' in Banda by Prem Bhai (Prem Singh) and Johan, our friend from Belgium, will benefit the vision of thousands of people. This book is an introductory lesson to understand the very reason of the existence of agriculture. Because in our country, every second person will tell you that he belongs to the village, but on the question of agriculture he acts like a parrot. And even those who live in the village do not see a solution for this crisis.

Prem Bhai and Johan open the way towards a solution beyond boundaries of countries or cultures. They shed light on:

1. The need of self-sufficiency for farmers families.
2. The courage to change our agricultural patterns which will lead to prosperity for farmers families.
3. The need of recognition on a political, social and family level.

One day, I asked Prem Bhayi over the phone, what he was doing? He responded that a self-conscious peasant is always busy to make earth a heaven.

Let us be co-passenger in this proposal.

Pratap Somvanshi
Editor Hindustan Times

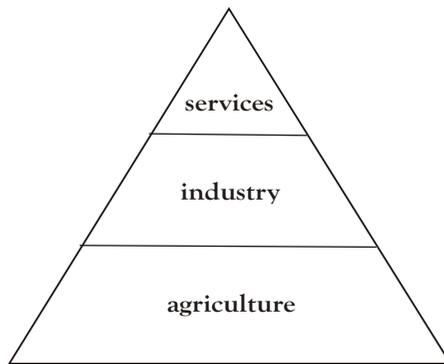
What farmers really need

Our society's structure is commonly presented as a pyramid, consisting of three substantially different sectors.

Agriculture or the primary sector forms the basis of the social model. It serves the elementary food needs of human beings and is at the source of many life processes.

The industry is of a different order and although it draws its resources mainly from nature, the industry rather offers people commodities and luxury goods.

The services sector or tertiary sector entails services and administration, connected to our social order.



Worldwide, in almost all developed countries, the industry and services sector are far more appreciated and valued than the primary activity that agriculture offers.

A striking illustration of that was an event that took place in December 2008 in Gulbarga, in the Indian state Karnataka.

The then president Abdul Kalam gave a public lecture. Abdul Kalam was a very inspirational speaker for young people. That day, 25000 people were present. After his 45 minutes speech, Kalam allowed 5 students to ask a question. After three rather trivial questions, a fifteen-year-old girl knocked down the giant on the stage with her simple and genius remark. A comment that came straight from the heart: "You advise us, students, to become engineers, doctors, teachers, bureaucrats, scientists or politicians. But you did not ask a single one of us to become a farmer. What then will be the fate of agriculture in the future?"

Abdul Kalam was knocked down, but of course he was eloquent and skilful enough to save his image by pointing at the role of science and technology to increase the productivity of agriculture.

Upon closer consideration this even enlarges the ironical situation agriculture is in. Allow us to explain that more concretely in this booklet.

Men and women farmers

For the sake of convenience, we talk about the farmer, but we always mean both women and men in farming. Here too, the reality of farming is considerably misrepresented. In time and labour force, women often carry the larger share of the burden.

Herman Verbeek from the Netherlands¹, a former member of the European parliament who was specialised in agriculture and fishery, often talked about European agricultural policy for a large audience of farmers. Using the ingredients of the cup of coffee in front of him - i.e. coffee, milk and sugar - he illustrated compellingly how agriculture is in crisis all over the world. Verbeek opened the eyes of many to the social exploitation of men and women in farming and revealed the distorted trade relations of agricultural products in between the north and the south. In the middle of his plea, he would invariably add: "The woman farmer represents 60% of the farm". On one of these animated evenings the immediate reaction of an older farmer came: "You are mistaken, sir! She is 70% of the farm."

As we will see later, agriculture mainly consists of care giving. Care for animals, for the soil, the crops, the farm. And women are generally deemed the best caregivers.

Agriculture as the primary sector

Food is one of our basic needs. But agriculture offers so much more than food. Agriculture is close to nature and at the source of all living things. It manages life processes and fosters the equilibrium in the interactions between earth, plants and animals.

¹Herman Verbeek, *In boeren handen: voor een rechtvaardige en verantwoorde landbouw*, 1989, Kok Agora, Kampen

But above all, agriculture that is in harmony with nature and through cyclical processes returns to nature what it took always creates abundance. One of the primary principles of nature is that it always gives more than it takes.

Think of a tree that germinates from a mere seed, in any soil or place. What does the tree take from nature? Nutrition, definitely, but we do not need to fertilize the tree. Water, and yet we rarely have to water the tree. But what does a tree give us? Oxygen, timber, firewood, shade, nesting space for birds, fruit, blossoms, berries, nuts and even medicine. It pumps up minerals from the deep layers of the soil and brings them to the surface via its falling leaves. Through the process of humus, a tree provides soil fertility. A tree gives infinitely more than it takes.

Nature is generous and bountiful and agriculture that conforms to that is inherently abundant. That is its strength. And at the same time herein lies its weakness.

Abundance versus scarcity

Agriculture creates abundance and is inherently rich. However, when it enters the economic sphere and its fruits become subject to a monetary valuation, its richness falls into poverty.

Modern economics usually revolves around the idea of scarcity, assuming that human wants are infinite and the availability of goods and resources is limited. This assumption is questionable. We could also imagine an economics of human needs, different from wants. Wants in today's consumerism lead to an insatiable spiral of never enough. Scarcity is thus the starting point of classic economic and it serves many economic processes to preserve scarcity.

Economics as a science became largely independent and defined its own order, seeing the world around it as an external factor. Economic processes are mainly considered as a class

apart. Social dynamics in society do not matter to classic economics, and the ecological state of our planet earth seems completely irrelevant. Economics and sustainability are hardly related and you could question to what extent economic science belongs to the domain of agriculture.

If we can establish that classic economics gave an enormous boost to the development of the industry, creating previously unprecedented prosperity in industrial countries, we can also ascertain that the very same economic models had quite contrasting effects in agriculture. Many social and ecological values inherent to the very soul of agriculture wasted away from within under the pretence of economic efficiency, scaling up and price reduction. This eventually left many farmers destitute.

Nearly everywhere where agricultural products enter a market, whether local, traditional and small-scale or global, the abundance of agriculture is subjugated by the economic scarcity paradigm. The price for farming produce that is set on a market, at the crossroads of supply and demand, is in most cases far below cost. Often the direct costs, such as seed, fertilizer, labour and so on are not even covered by the price, let alone all indirect costs needed to run a farm.

The economic valuation manifested in a price-making process that in agriculture is oddly enough most often set by the buyer, trader, dealer and rarely by the farmer, is the most visible and direct humiliation of everyone who works in the primary sector of our society.

Agriculture versus industry

Agriculture stands close to the source of life and whatever it takes from nature is brought into a cyclical process in which everything eventually returns to nature. True agriculture creates no waste.

Since nature manifests itself in an endless creative diversity, it does not have standard products. Men and women farmers therefore cannot be called producers. They are rather the caregivers and co-workers of life and fertility.

Agriculture is an adding, replenishing activity: it takes, makes, uses and gives back. It manages the earth as source of fertility, where one gives back with care and affection, in proportion to what one took. There are farmlands that have been continuously in use for 4000 to 5000 years and because of good maintenance permanently provide high yields to their users.

Industrial production most often means a highly mechanised and increasingly automated handling of (mostly dead) materials. Where the farmer sees the earth as soil fertility in a living context, the industrialist treats that same earth as a source of minerals, called raw materials, which can be extracted. The end result of the industrial process is a standardized, uniform product of solid, predefined quality. This type of product is usually introduced on the market based on the cost plus a profit margin, which is where the economic laws fall in place.

The industry takes, makes, uses and discards. It often evolves from exhaustion to pollution to mountains of waste. Think of plastic.

Fortunately there are also promising developments in the industry, such as 'cradle to cradle', whereby the waste of one product becomes the new raw material for another product, and as such reintroduces a cyclical process which pushes back negative impacts on nature. By the way, this new development is inspired by nature and agriculture.

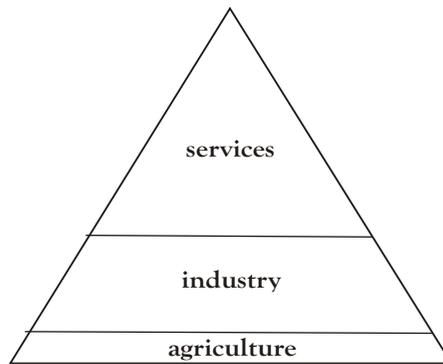
Unfortunately, over the last hundred years, we enforced industrial laws in agriculture all over the world, introducing standardized, dead mineral fertilizers and input of chemicals. Much of what is currently called agriculture is actually industrial production and many so-called farms degenerated into facto-

ries. This led to an enormous disruption in the life domain of agriculture, confusing the position of men and women farmers.

Agriculture versus services

In every society with improved living standards based on economic growth, the number of farmers is drastically reduced. As such, the fundamental primary sector declines and becomes seemingly less important.

Proportional to this decline that started after the Second World War, the tertiary sector became increasingly important and influential, as well as the services and administration linked to government policy. There has been an increasing interference, regulation, control and administration that prescribed farmers' daily practices from the top down. The farmer, who as of old feels a free man, is now controlled by a civil service that outnumbers by far the number of farmers who do the actual work.



The impact of the great World Wars on the nature and functioning of agriculture is seldom understood. First, there was an inconceivable change in dealing with the soil. Living soil

fertility had to give way for direct plant nutrition, mainly with nitrogen delivered from the stagnant bomb industry. Rigid scientific thinking that carried more importance to dead matter than natural life processes led and supported this process. Moreover, the complete war bureaucracy was transferred to the agriculture sector². Agriculture officers became more important than farmers.

Self-confidence, self-respect and sense of honour

A fellow organic farmer was invited to join in a radio debate with a professor, also president of a farmers trade union. This last word is deceiving because farmers trade unions are often strongholds of industrial interests, banks and executors of the imposed government bureaucracy. These groups then are more about self-interest than farmer interest.

Our fellow farmer was eloquent and well versed in his profession and fervently and passionately advocated the necessity of environmental-friendly farming. But the professor gloated in belittling the farmer as conservative and acting against progress. After the radio programme the professor received a generous remuneration for his time and presence, while the farmer did not receive anything. Nevertheless, both gentlemen had sat on the same chair.

This example demonstrates the difference of the social position and valuation of a man of rank; a scientist, and a practitioner of the art of living that is farming.

The authors of this booklet, both farmers, frequently stand side by side to address groups of rural farmers in the villages of Bundelkhand, India, to stir up their faith in a future

²JozefVisser, Down to Earth, 2010 UniversiteitWageningen

of farming for farmers, provided they take their fate into their own hands. Time and again we are confronted with the fact that for decades farmers were told that they do not count and that they are not important in society, so much so that they eventually started believing it. We absolutely need to counter this pernicious spiral.

The most important and first thing that farmers need is self-confidence, self-respect and the pride to hold on to their fundamental position in the social basis of our society in all dignity.

For that we need a better understanding of the importance of agriculture.

A few principles to consider

Nature does the work, rather than the farmer

You cannot farm alone

Self-sufficiency in the community leads to autonomy
that lends value to fulfilling social responsibility

Nature does the work, rather than the farmer

Nature is an infinite source of life processes. So much so that we, people, barely understand the complexity and diversity of all that moves in nature.

Let us take soil fertility as an example. Soil fertility, so the real value of the soil, is determined by the complex meeting of its physical, chemical and biological qualities. Especially the latter, biological or living features are barely comprehensible for our analytic mind. We can hardly measure them. One gram of fertile soil can contain more living organisms than the number of people on earth. That a handful of soil contains ten billion bacteria is normal. Moreover, the diversity of organisms and species in a fertile soil exceeds our capacity to classify. There is a whole world of bacteria, fungi and countless other microorganisms, able to change their genetic code, that enter into symbiotic relations with each other, cluster and form some sort of super organism. Soil biologists acknowledge that they only understand 2% of all soil life so far.

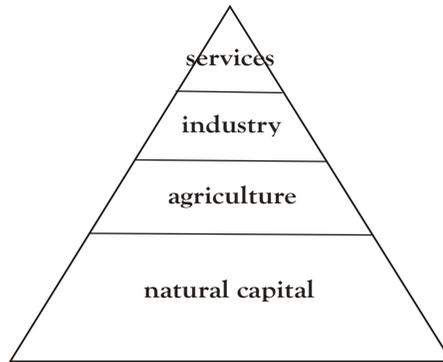
You cannot separate soil fertility from plant and animal life. The capacity of a plant to attach itself to the ground via its root system is unique. Unfortunately we cannot see this part of the plant, because it develops below the surface. Many agricultural crops such as cereals and legumes have an incredible root network. But a root system can only develop in symbiosis with soil life. Symbiosis means mutual dependence. Plant roots leach carbon in the form of exudates, needed for fungal life. And fungal life in its turn helps in converting nitrogen needed for a plant's growth. Coexistence and coherence are inherent in nature. An animal also has an inseparable role in building soil fertility. By means of digestion processes in the ruminant gastrointestinal tract for example, roughage is converted into manure. That means greens are converted in pre-digested substances that are further transformed into humus through the soil digestion process. And humus is the essential component of soil fertility.

Agriculture and nature consist of cyclical processes, on all levels. Soil, plant and animal can only function through the process of photosynthesis, in which the sun represents the source and the centre of all natural energy. It is because of the sun that in the process of photosynthesis, chlorophyll is made from atmospheric carbon dioxide (CO₂) and water. Carbon and oxygen are separated and each serves new life cycles. Oxygen makes nature breathe and carbon builds its structures.

All these processes arise and occur apart from our human presence on earth.

Calling a farmer a producer is a misconception, which contributed to a wrong appreciation of his position. Nature does the work, rather than the farmer. First we should dare to name the true wealth of nature itself. Nature offers us all her wealth for free, but that does not mean that it does not have any

intrinsic value. That value, i.e. natural capital³, comes first. Moreover, natural capital is larger than all capital realized by men through production or trade. Agriculture - in so far as it respectfully complies with nature's laws - cares for, manages and transforms that wealth and abundance. The farmer, therefore, is not a producer, but a manager, caregiver and transformer of what nature passes on to him. That calls for modesty, but that should be the farmer's strength. It opposes the arrogance of the one who thinks nature will give endlessly and ecology has no limits, so that we, as humans, have the right to exploit nature.



Classic economic models see nature as an external factor. In economic laws the exhaustibility of natural resources is not taken into account. The valuation of raw produce such as cotton, cereals or think of oil of fossil fuel - a product of million years of natural cyclical processes - is established according to the so-called law of supply and demand. And even this generally accepted assumption can be questioned when you see how much speculation or psychological factors come into play in the price setting of our most essential raw materials.

³John Michael Greer, *The Wealth of Nature - Economics as if Survival Mattered*, 2012, New Society Publishers Ltd, Gabriola Island, BC, Canada

Guarding and care as female quality

When threatened with extinction due to clear cutting the forest for the benefit of industrial soybean production, a primitive people from the Amazon forest in Latin America decided to send their shaman to the civilized world to report what was happening over there. With the help of a travel agent, the shaman could spend a few weeks in New York. After a short introduction by the travel agent, the shaman was left to fend for himself in the metropolis. When the travel agent visited the religious leader a few days later, the man was desperate. "Where are the women?" the shaman asked wide-eyed. The agent pointed at the many women that worked as bus drivers, clerks or even police officers. But his answer did not soothe the shaman. In the end he said: "It is a man's nature to fell trees until the last tree has been cut down. It's a man's nature to fish in the river until the last fish is caught. And it is a man's nature to hunt until the last game is killed. It is in woman's nature to care for the family, the village and by extension for Mother Earth. And it is the women's role to tell men when they need to stop cutting down trees, fishing the river, hunting game and respect the ecological capacity of nature". Then he cried out again: "Where are the women?"

Agriculture is guarding, care and transformation of natural capital and that should happen within the limits of the ecological capacity of nature.

Agriculture as caregiver of social capital

Every well-functioning social organisation relies on harmony, trust and cooperation. The farm is pre-eminently the place where these values are established because they are a continuation of the way in which nature functions. For that reason you can never farm alone. It is a matter of collective social interest.

In all farming cultures all over the world, the family and village entity was and is central. Family and village are social organisations wherein the community and its members benefit from cooperation, mutual help and trust because farming activities are based on management and care for soil, plant and animal.

It is difficult to define the well-being of a farming community but it results from a feeling of solidarity with the family, the community, the neighbourhood or the village that goes a lot deeper than any material gain. Well-being has more to do with benevolence, rooted in the earth. This rootedness yields a high degree of self-sufficiency in basic livelihood needs, which leads to autonomy that confers its value to fulfilling social responsibility.

Many farming village communities developed their own forms of government based more on the principle of co-operation than on authority or struggle.

Agriculture as culture bearer

You could call culture a manifestation of our worldview and our way of seeing, being and doing through our inner lives and mental processes. It is the whole of habits, customs, worship and beautification on all possible domains of human activity.

Agriculture is culture, it is about building and preserving, and probably constitutes the most fertile soil for a rich cultural heritage. Celebrations, songs, dances, clothes, eating habits, washing rituals, tales and symbols originated in a farming culture, are all a continuation of the primary care for the earth.

Culture extends to the expression of religion and spirituality. A people's religion, rooted in the reality of their daily life is usually free of dogmas, institutions and formal ceremony, and is connected to an ethics that reflects from the inside the harmonious relation with nature.

One of the richest manifestations of culture can be found in the kitchen of every house. In our cooking and eating culture. Rujuta Diwekar⁴ is a nutritionist who attributes her food knowledge to all grandmothers in every part of the world. True, our grandmothers still had the self-evident understanding what food means, where it comes from and especially how you need to prepare it, dose it, and balance it according to the type of person, the seasons, the months and annual festivities. Our grandmothers did not need charts indicating the necessary calories, vitamins, because they had a feel for the vitality of food and they understood the art of preparing a balanced meal with love and dedication. Their food philosophy was a continuation of their farming practice. The fruits from Mother Nature's womb were elevated to a higher level in grandmother's kitchen.

The authors of this booklet were once invited at a gathering of businessmen, industrialists, stock market brokers, all of whom were searching to reconnect to agriculture and had often already struggled some years to get there. When we asked about their deepest motivation for their unusual career switch, it was remarkable that they unanimously mentioned the memory of their mothers who had lovingly prepared the meals they ate as a child. Any business model, material fulfilment, career... could not replace the loss of that daily experience.

True wealth

Wealth emerges when men and women farmers, the family entity and the village community are able to carefully and attentively build on natural capital that was given to them. Surplus can arise in the collective when abundance is shared and frugally and wisely dealt with. There is prosperity when basic needs are met by meaningful labour and the continuation of that is guar-

⁴www.rujutadiwekar.com

anted. And that is a community's concern, not that of a single individual.

Only then, there is room for education, justice, health-care..., and social capital emerges. Social capital is the basis of the building of culture in its broadest sense.

That is true wealth, which we prefer to call prosperity, originating from the interaction with the physical reality of nature, the workplace, the soil, crops and domestic animals.

The word 'wealth' has become a fallacy because of its association with money. And although money originally was a simple means to facilitate exchange, it has become a power in itself that has nested itself in all aspects of our society. Moreover, there is an increasing detachment of money that stands for the value of a real good. The majority of global monetary transactions are abstract and virtual transformations of value that are based on hot air.

An aeroplane transporting the most rich and powerful men in the world, in their tailor-made suits, and shining shoes and 1 million dollars in their pockets, is forced to land on a desolate island, with hardly any freshwater and a limited amount of coconuts and fruit. What is wealth in that context?

Prosperity is rooted in nature. Wealth led to the wrong kind of respect for a measure that got out of control.

Commercialisation of farming produce

In the January 2015 issue of the Indian magazine for agricultural development 'Kurukshestra'⁵ that focuses on the commercialisation of farming produce (com modification of agriculture) agriculture equals economics in every single article. On the back cover you can see a picture of a vague and indefinable agri-

⁵Kurukshestra, A journal on rural development, vol 63, January 2015, India

cultural product, onions most likely, with 2 hands filled with paper currency in front, carrying Mahatma Gandhi's picture on each note.

That picture shows that all that Gandhi stood for is misunderstood and misrepresented. As his was a noble pursuit to return dignity to rural villages. It was not the ultimate humiliation of every man and woman farmer all over the world, as this picture demonstrates. Because reducing agriculture to economics that is based on wrong assumptions and externalizes the ecology of our earth and the social context of family and village entities, robs agriculture from its prosperity and wealth and impoverishes the farmer. Paradoxically, poverty has become the reality for most people whose livelihood is based on agriculture. Economically subordinated, but also eroded agriculturally because of economic laws.

It is the task of every farmer to realize that. First, every farmer should develop a good understanding of what agriculture means. For this, we gladly refer to our booklet 'Aavartansheel Kethi'. It details the microbiological loop where in biodiversity, landscape, composting and fermentation processes, soil fertility, cereals and legumes lead to vitality that enables real food production. In that cycle, the cow, as central domestic animal connects everything together.

Where agriculture meets economics, the self-confidence, self-respect and sense of honour of the farmer needs to safeguard that money, as medium of exchange for his farming product is a dignified function of the essence of agriculture as primary sector. That is the bearer of society in natural, social and cultural sense.

⁶Prem Singh, Johan D'hulster, AavartansheelKethi, 2014, Banda, India

Autonomy on 5 domains

- Thought
- Soil fertility
- Seed
- Water
- Energy

Autonomy fires one's imagination, but does not really exist. With autonomy here we mean responsible dependency.

On the product folder of a Swedish manufacturer of axes⁷ the following statement appears: "What we take, how and what we make, what we waste, is in fact a question of ethics. We have an unlimited responsibility for the Total. A responsibility which we try to take, but do not always succeed in."

That statement seems an excellent starting point to frame the autonomy we mean here.

Autonomy of thought

A farmer stands, lives and works in physical reality. If all is well, he is connected with the living reality of nature that changes each second. Working with nature requires a very large flexibility, but also a great power to deal with its complexity and near mystery. For a farmer, who walks on his fields or among his cows, a single glance is enough to assess the state of his crops or the health of his animals. The farmer then is at the centre of an extremely complex interplay of climate conditions, soil conditions, effects of improvement measures, balance in minerals and so much more.

Therefore there is little reason to 'elevate' agriculture to a science, to capture the wonder of nature in scientific models, to

⁷The Axe Book, GränsforsBruk, Sweden

reduce plant nutrition to a few main substances; nitrogen, phosphorus and potassium. And subsequently to educate the farmer and make him dependent of a type of knowledge that imitates nature but does not understand its essence.

A farmer should be free to make his own decisions, based on the confidence that he, in all modesty, is the manager and guardian of life processes. That is why men and women farmers out of community spirit should keep their knowledge and skills at home. A modern example of that is what happens in farmer networks, a format whereby farmers visit each other's farms and examine a development, a wish, a problem, a need, a disease...Because who is better placed to observe life processes and deal with them creatively than the farmer himself?

The power of a healthy agriculture lays in its diversity. Each farm and each management can be different and unique because you cannot standardize life processes.

All too often we see how scientific institutes, hungry for knowledge, or industrial companies, in their pursuit of profit, use the weakness and decline of the peasantry to fill that gap with their uniform recipes. As such the essence of what agriculture could be, is further hollowed out and robbed.

Autonomy of thought, understood as the responsible dependency towards the incomprehensible complexity of nature, to which each farmer is drawn with every fibre of his body, is the prerequisite to gain autonomy in all further domains.

Autonomy in soil fertility

Until the Second World War, soil fertility was central in agricultural research in Europe. Agricultural literature in the thirties of the previous century that is currently being reprinted and

finds acceptance again, demonstrates how soil fertility was perhaps the key to a good understanding of the cycles that - through agriculture - emerge between earth, plant, animal and human being.

In nature, nothing lives for its own sake, but always for the sake of the total. Fertility is the capacity to pass on properties to the next generations and is probably the high point of each living creature. Soil fertility does not exist in itself, but is just a part of the cycle of life. Essentially, soil fertility serves the human being, through the health of plant and animal.

Each soil has its physical manifestation. There is sand, loam and clay and many variations, composite and specific soil types. Soils also contain chemical properties, an acidity level, mineral compositions, ion exchange capacity and more. Soil fertility appears but to full advantage in the biological properties of the soil: the formation of humus, ripening processes and - most of all - microbiological wealth and biodiversity. These are the continuous building and breakdown mechanisms, inherent to each living substance.

A plant can only develop and build the capacity to produce seed, carrying the genetic diversity of its characteristics, when it grows in a fertile soil. That is an expression of vitality and life force. Just as well, the vitality of human food and animal feed is an explicit precondition for the health, well-being and functioning and fertility of humans and animals. All living elements, however specialised and diverse, belong together in symbiosis and dependence.

On a mixed farm, where people, landscape, cattle and plant diversity are present, soil fertility can most often be built without external inputs. Manure, composting and fermentation techniques are as of old the means to develop soil quality. Technically, soil fertility is the interplay between carbon or humus content, crumbly soil structure and microbiological life.

There is autonomy in soil fertility when the farmer understands how Mother Earth is at the basis of each civilization and cares for it with all its force.

Autonomy in seed

Seed is the source of life. Life that cyclically germinates, grows and flowers excessively, turns inward and forms seeds.

Seed contains all information from the past. And it carries with it the intention to live anew.

Globally, in traditional agriculture the moment of sowing is a celebration that involves the whole community. It expresses the importance of agro biodiversity or the great genetic wealth and cultural heritage of our food crops.

Many contemporary food crops exist because of men and women farmers who have selected and improved seeds for centuries in the living context of a healthy, fertile soil, a specific landscape, variable climate circumstances and resistance against diseases and pests. Because of that, a great flexibility and robustness arose in the native breeds and farmers selections that came from our agricultural tradition.

Driven by the pursuit of profit, economic power, privatisation, and standardization and hand in hand with growing industrialization, seed selection and improvement is almost entirely dominated now by a small number of transnational pharmaceutical/chemical corporations. Where farmers used to select seeds at plant level, closely connected with a landscape, industrial breeding happens in a laboratory at cell or DNA level. Regional breeds become global breeds that need chemical fertilizers and plant protection products or pesticides.

Modern seed selection is based on extremely advanced scientific knowledge of the cell structures of the plant. In itself

this research is laudable, but the actual practice by the breeders of the seed industry does not serve the real interests of true agriculture. It makes the farmer economically dependent and creates genetic erosion of our cultural heritage.

Farmers need to take seed saving practice to heart and preserve and further develop the genetic wealth and robustness of their local breeds. That requires a lot of attention, knowledge and technical mastery. The educated plant breeder can contribute to that provided he is respectfully connected with the reality of the farm, soil fertility and plant integrity.

The same need obviously applies to the biodiversity of domestic animal breeds on the farm.

Genetics should move freely as cultural heritage because it embodies the inventiveness and creativity of many generations.

Autonomy in water

A beautiful example of how farmers manage water supply on their farm can be found in many regions in India. It is known that the subterranean freshwater resources in India are limited. Still, a massive amount of water is being pumped up from ever-deeper layers, under pressure of population growth and increasing need for water in the industry and industrial agriculture. Traditionally there were water reservoirs all over India to collect and store the monsoon rains as long as possible. These reservoirs were community property, connected to culture. Most of them were examples of architectural ingenuity demonstrating great insight in landscape typology.

Pushpendra Bhai from Mahoba District in Uttar Pradesh is a shining example of a man who was passionate about water and could convince over a thousand farmers and village communities to invest in water storage and thus recapture the historical

importance. Pushpendra had many motives to plea for water storage; the environment, water quality, fish population, microbiological biodiversity and above all the autonomy for its users.

Moreover, water in all its manifestations is inextricably bound up with the landscape. Because the landscape is an important part in the cyclical farming system, a farmer becomes the guardian of water quality.

Since his childhood, the Austrian forester Viktor Schauberger⁸ was fascinated by the wondrous properties of water and realized as no other how movement, temperature and magnetic tension vitalised water in direct connection with the forest, trees, soil fertility, minerals and so on. Water cannot be understood in a laboratory, it cannot be disconnected from the totality of the ecosystem. The subterranean water level, but also surface rainfall and microbiology of the fertile earth's crust have to be seen as a coherent whole. Schauberger's insights in the properties of water allowed him to engage in advanced and innovative research in physics and he was out to find a solution for the energy question of our time.

Theodor Schwenk⁹ also dedicated his life's work to the movement of water. Also he showed that water is more than H₂O. Schwenk unriddled the subtle lines along which water moves and demonstrated that the basic pattern of nature does not consist of chaos but of meaningful arrangement of living organisms.

It is true that currently agriculture globally uses most water. That is the result of the sad reality that many agricultural systems have become desert like, cut loose from the carrying capacity of an ecosystem of which water is an inherent part. For an agro ecological unit there is not much need for external water

⁸Schauberger.co.uk

⁹Theodor Schwenk, *Sensitive Chaos, The Creation of Flowing Forms in Water and Air*, 1965, Sophia Books, East Sussex

supply but it has a large buffer from within of moving, cooling and life magnetic water. The autonomy in water, as is meant here, is every farmer's task to guard the water quality of his farm.

Autonomy in energy

The energy source of agriculture lies in the process of photosynthesis and the construction of carbon as the backbone of soil fertility.

Let us look at what happens when the sun shines on a plant that grows in the soil. In the green leaves of a plant the sunlight converts atmospheric carbonic acid (CO₂) and water in sugars and starch. In the process oxygen is isolated and released while liquid carbon sugars help create leaf tissue. But also a large part of carbon, that you could also call a sweetener, leaks via the plant roots into the soil. The leaked carbon feeds soil life, bacteria and fungi in exchange for several services of soil organisms, such as accessing nutrients and disease resistance. The numerous microorganisms in the soil can only be developed and multiplied by the provided carbon. Higher organisms in the soil food web feed on them. So carbon that is a problem in the atmosphere, especially in our times of climate chaos, is as soil carbon the solution for many problems¹⁰.

When the soil is managed well, and that is the task of a healthy agricultural system, a lot of atmospheric carbon can be fixated in the soil. That contributes to soil fertility, partly expressed in carbon and humus percentage, but also in its water-retention capacity.

This process of fixating carbon works even better when you bring in ruminants, such as cows, in the grazing management of pastures. Whenever the grass is grazed off, there is a transfor-

¹⁰Courtney White, Grass, Soil, Hope, A Journey through Carbon Country, 2014, Chelsea Green Publishing, USA

mation in the root system of the plant, old roots die off and new roots are formed. So the decomposed roots contribute to the formation of humus and carbon in the soil.

Photosynthesis by means of the sun is the primal process along which all organic substances on earth are formed, as a certain manifestation of carbon. Without leaf green or bio mass soil fertility cannot be built.

Like water quality, the energy resource of agriculture is inherent to the system. Once more, it is apparent how agriculture can only function optimally in coexistence with nature. Agriculture in close collaboration with nature needs little energy input. All farming systems that are separated from nature are energy and water needy. Think for example of chemical fertilizer. Enormous amounts of energy from fossil fuels are required to combine nitrogen from the air with mineral salts to make chemical fertilizer. By contrast, rhizobium bacteria succeed without any effort in fixating that same atmospheric nitrogen in the bacterial galls of leguminous plants.

But also fossil fuels that we extract massively from planet earth these days as oil, gas or black coal, came about in a distant past through the process of photosynthesis. The useful property of fossil fuels is that they have a high density, partly formed by geologic pressure. In the current climate debate we are confronted with the fact that the supply of fossil fuels is finite and its use causes high CO₂ emissions. Again, classic economic laws are oblivious to that. According to economics the planetary availability of oil is not defined by our planet, but by the market. And the impacts of pollution and climate warming are not an economic issue either.

Where fossil fuels and its derivatives are introduced in agriculture, for traction or power, we need to use them sparsely and efficiently. Realising these are finite goods. And realising that agriculture should fixate more carbon in the soil, rather than

emit them in the atmosphere. In doing so, agriculture can solve the climate problem instead of contributing to it.

In the village Kharra in the Indian state Uttar Pradesh, where electricity is not available yet, we talked with the village community about autonomy in energy. It is always striking how beautiful and pure a village community without electricity can be. During the discussion the villagers had some complaints. One villager said: "I already bought a refrigerator, a television, a microwave and a computer, put under lock and key until the government brings electricity". Another villager suggested that you only see the positive side of electricity if you don't have access to it. But once you have electricity, you reflect on the negative consequences and the price you pay for it. All villagers unanimously expected the government to provide electricity. However, there are numerous possibilities of renewable energy sources, decentralisation of energy whereby the sources of energy provision are known and can be managed autonomously.

One needs to make brave choices and it requires autonomy of thought to do so.

What is the good life?

A farm is a place where very diverse elements join in unique combinations. We name some: great work power, community life, food and health, meaningful and tangible culture, prosperity. Without many large setbacks that can hit men and women in farming, a well-functioning farm can be a place where you can live the good life.

The good life is the capacity to live on one's own force. To define our needs based on sufficiency rather than infinity. And subsequently satisfy those needs in an authentic way to become contented. All of this can be realized within the boundaries of the respect for our earth's ecology. Actually, it is very simple.

Shri Nagraj, an Indian wise man, who propounded the coexistence philosophy¹¹, once said that all problems humanity struggles with at the moment, psychologically, emotionally or other, can be solved at the level of the farm.

Can technology save us?

It is impossible to imagine our modern society without technology. Technology brings us modern people a previously unimaginable ease of communication, speedy and precise transactions, and ingenious ease. The belief in social progress is closely connected with technological developments and that is why technology is soon presented as the solution of all new problems. However important technology may be on many different domains of our society, it does not belong in farming.

In contrast, technique, different from technology can be very useful.

Agriculture works with living nature and that changes continuously. The interaction with nature requires great flexibility and a sharp perceptivity. Above all it requires great work power. Farmers have been incredibly inventive in designing tools and machines to lighten physical labour and make tillage, sowing, harvesting and processing more manageable. As long as technique is a continuation of human handling and can be rationally comprehensive it is desirable.

Technology is of another nature. Most often, technology is a continuation of a thought process that is not based on the interaction with nature, but belongs to the world of economically driven concentrations of power. Technology is rarely neutral and where it affects life (think of genetic manipulation of plant and animal, a form of technological breeding), it is always connected to pursuit of profit, patenting, and patent laws. And

¹¹www.coexistence.in

the many scientific computer models developed at agricultural colleges, another example of smart technology, rarely affect the complex reality outside the building.

Beauty

True agriculture has a sustaining, supporting, balancing and cultural function.

It provides us with food, clothing fibres, genetic diversity...

It supports soil fertility, mineral cycles, water supply, plant and animal production, photosynthesis ...

It balances microbiology in the ratio plant-animal, in the climate, in the streams of water and air...

It brings about culture in a community through language, song, dance, rituals, religion and spirituality, heritage ...

In all of this lies beauty. The innate beauty of nature expresses itself in a transformative way in the dealings of men and women in farming.

When all is well, men and women in farming have a way of life that strives for beauty, harmony and order in their interaction with earth, plant and animal.

Men and women farmers are the musicians of the earth.



Until now, the importance and the position of farmers and women farmers in our society has very rarely been addressed, if ever acknowledged. Moreover, great confusion has arisen about what the essential role of agriculture in society should be.

The authors of this booklet show the need of self-confidence, self-respect and a sense of honour as the primary condition to grant farmers and women farmers the courage to strive for self-sufficiency. Prosperity in society is created when farmer families gain autonomy of thought in matters of soil fertility, seed, water and energy.

A society can last only on the base of a harmonious relationship with the natural wealth. There is no culture without agriculture.



Prem Singh (1964) is a founder and promoter of the Humane Agrarian Centre, BadokharKhurd (Banda, India). He is born farmer and is likely in search of co-existential methods of agriculture, preserving of seeds, cattle farming etc. which sustains nature, soil and environment. His main concern is the well-being, happiness and standard of living of all farmers of India.

Johan D'hulster (1955) is the founder and farmer of the organic vegetable farm Akelei (Schriek, Belgium). He is keenly interested in investigating various types of sustainable agricultural methods practised all over the world. In this search he visited India many times and works practically in various states of the country.