

150,000 Biodynamic Farmers – Report from India

Artur Granstedt, January 2018

IFOAM (International Federation of Organic Agriculture Movements) organizes an international conference every three years, 2017 convened in the capital of India, New Delhi. Businesses and non-profits, as well as individuals who are involved with organic agriculture from around the world are members of IFOAM. The IFOAM general assembly prepares and determines rules for what can be included in the term “organic agriculture”. In Sweden and the Nordic countries, “ecological agriculture” is usually used instead of “organic agriculture”. In the EU, the inspection of organic crops and production is strictly regulated. To avoid confusion I will here use the term “organic”.

Biodynamic agriculture has a strong position in organic agriculture in India and was well represented in both the IFOAM commercial exhibitions of organic products and operations, and also with several scientific reports. The Biodynamic Research Institute presented a report *Carbon sequestration in long term on farm studies in organic and biodynamic agriculture, Sweden*, with results from 50 year trials in Järna. It is now published in the conference proceedings¹.

Before and after the conference, the biodynamic section organized a separate meeting of about 60 participants from some 20 countries and, above all, participants from India. The meeting concluded with a gathering in the mountain area of the northern Indian state of Uttarakhand, bordering Nepal and China. In the past twenty years, a strong following of biodynamics has emerged among small farmers here. Through visits and stories from farmers and researchers, we learned more about biodynamic agriculture in Uttarakhand.



The valley with terrace cultivations up to SARG at 2,500 meters altitude.

¹ Carbon sequestration in long term on farm studies in Organic and Biodynamic Agriculture, Sweden
A. Granstedt, L. Kjellenberg. P. 198 in: <https://www.econstor.eu/bitstream/10419/171337/1/1005055939.pdf>

In the village Supi, Ramgarh, Nainital district, Uttarakhand there is a biodynamic development and education center magnificently located at 2,400 meters with the Himalaya massif visible in the background. Here Binita Shah has established a research and training center for biodynamic agriculture called Supa Agricultural Research Group ([SARG](#)). SUPA stands for Steiner's Universal Philosophia Agrica. Near the SUPA center there are now approximately 100 biodynamic family farms of about 1 ha. From there, biodynamic agriculture has spread to more and more neighboring villages and across India.



This simple building with a lecture hall is called Pfeiffer Hall, at SARG and Binita Shah in Uttarakhand, here with participants from the biodynamic section in conjunction with the IFOAM conference in India, November 2017.

Of the 600,000 organic farmers in India, approximately 150,000 are biodynamic farmers with an area of approximately 100,000 hectares. Biodynamic agriculture is particularly well developed in some regions of northern and southeastern India. Compared to Europe, many biodynamic farms in India are small – 1 hectare or less.

The success of biodynamic farming is tangible - with two crops a year, these small farms provide families with food and cash crops. Cash crops make it possible to buy products that can't be grown locally, such as rice. In Uttarakhand, a 2,000 sq. meters arable land per person provides enough food based entirely on local, renewable resources. The local diet is mostly vegetarian supplemented with dairy products.



Everything is transported by donkeys or carried by people up the steep mountain paths, here at SARG, the biodynamic cultivation training center.

An important prerequisite for cultivation is access to water. On farms without access to water flowing naturally from the mountains, water is pumped up from lakes and streams in the valleys, and sometimes led into narrow channels and to storage cisterns.

But hard work of the whole family is required on these small farms in the mountains. Fields can only be cultivated using small mini-tractors or to a large extent using hand tools and plowing with oxen pulling simple wooden ards or scratch ploughs. Terraced fields are as narrow as 3 meters. In addition to the cultivated fields, it is necessary to collect supplementary feed and compost materials from surrounding mountain slopes that are too steep to cultivate. Using long-handle sickles and rakes, women and young people gather large bales of dry grass and branches from leafy bushes and trees. The bales are carried home to the small farm and used as animal feed, either directly or stored in large stacks. In these mountain areas there are few roads and everything is carried on the narrow, steep paths by people or donkeys and sometimes where possible by a bold motorcyclist.



With this long-handle sickle, dry grass is collected on the steep mountain slopes.

Cows, oxen and goats are essential producers of both dairy products and manure in Uttarakhand. Cows are considered sacred here, as in all of India, and of utmost importance as bearers of life. In India, dehorning is unthinkable. Cow horns, and the cow itself, are highly valued and are often painted a beautiful blue color or are gilded.



In the evening, the grass is bound into big bales carried home on the head to the farm and the animals. Then the men also come and help with the burdens.

Under these conditions, biodynamic agriculture has flourished as a popular movement. Biodynamic agriculture has unfolded through practical knowledge and cooperative community. The success of biodynamic agriculture is evident in increased soil fertility and higher yields, and was also described at IFOAM 2017 in a reports of comparative studies between conventional and biodynamic agriculture. Women are responsible for agriculture in India and their presentations at the IFOAM conference made a strong impression.

In Uttarakhand, organic and biodynamic agriculture has been accompanied by an increase in biodiversity. This is indicated here by an increase in the number and diversity of butterflies, which also in Europe has proved to be an important biodiversity indicator.

Crop diversity and an abundance of local varieties contribute to plant health and biodiversity. This is especially important in India, which is now also suffering from increasingly difficult farming conditions as a result of global warming. The state government in Uttarakhand has, like the independent small country Bhutan, a goal of converting all farms to organic farming. Nevertheless, we saw growers who burned harvest residue to prepare for winter crops (sown here in November) after summer crops. On a biodynamic farm this is unthinkable, all surplus organic matter is composted and becomes sustenance for soil organisms.



Binita Shah, the founder and leader of the SARG Development Center at 2,500 meters, points to the Himalayan snow-clad peaks (7000-8000 m), surrounded by participants from the Biodynamic section of India as well as other parts of world.

Biodynamic agriculture in Uttarakhand goes beyond organic. There is a common vision of working for something beyond traditional earthbound contexts and cosmic forces. This vision produces visible results through focus and skill. Agriculture is placed in a cosmic context, following lessons given by Peter Proctor, biodynamic advisor from New Zealand in the late 1990s in India. These lessons are summarized in a manual that is followed with great consistency. Like the *Biodynamic Sowing and Planting Calendar*, the *Biodynamic Agriculture Application Manual* provides organization and structure to tasks.

Each compost is built with great care regarding components, layers and exact dimensions. The compost is laid in east-westerly direction in the shade, with recommended dimensions 1.5 m wide, 1.4 m high and 4.6 m long. The size is well suited for a set of each of the six compost preparations. Air circulates from below through a channel formed by placing a small log raised on bricks at the bottom of the pile. A mix of fresh and dry organic material and manure is laid up in 15 cm layers along with 30% cow manure. This causes the compost to heat and react quickly, provided it is well-wetted. Ash, bone and stone meal can also be added. Each layer is watered as needed so water content is 60% (i.e. all material is wetted). Finally, the compost is covered with a layer of clay and manure that dries and becomes a protective skin. The mature compost is ready for use in three months. Approximately 10 tons of compost per hectare is recommended and it should be incorporated to the soil a week before sowing.



The author studying mature compost which can be used within three months due to the care put into making the compost and techniques used.

In India, the use of CPP (Cow Pat Pit, in Denmark, also called ("kokassepreparat")) plays a major role. The preparation was originally developed by Ehrenfried Pfeiffer and was established by Maria Thun under the name Fladenpreparat. I won't describe CPP here, but a copy of the manual describing CPP will be made available. Facilities for making CPP are often found on biodynamic farms in India and are seen as being very important for soil fertility, strengthening of life processes and as protection from plant pathogens. Treatments with humus and silica preparations are also done very faithfully.



Together with coworkers at the Center: Kailesh Chandra, Bhopal Ram, Ramesh Chandra, Heera Lal, Umesh Chandra. The biodynamic preparations are made here and stored prior to distribution throughout India.

I will describe important topics including worm composting (vermiculture), composting liquid manure or compost extracts as protection from plant pathogens in a later report.



Biodynamic preparations stored in buried pots.

Organic (ecological) farming successes in poverty stricken areas and regions with poor farming conditions are well-known and have been documented in several UN reports. Significant results have been achieved by caring for soil organic matter (recycling and composting organic matter and growing of nitrogen-fixing leguminous crops), along with crop rotation including local varieties. Nitrogen and humus-forming leguminous crops supply the necessary nutrients and build soil fertility, as opposed to artificial fertilizers which deplete both soil fertility and farmers' finances.

In spite of the differences between Europe and India, we also see similarities with the traditional European meadow agriculture, where surrounding fields for long periods were overharvested and depleted to provide crop nutrients by way of livestock and manure. This also applies to what I could see both here in northern India and what I previously have seen in southeastern India in dry tropical conditions.

In addition to the biodynamic treatments, composting, careful cultivation with cover crops, diversity in crops, application of agro-forestry to a certain extent, organic and biodynamic cultivation in these climatic conditions can be developed further. It would be of great importance if there was a shift to improved crop rotations, with more long-lived legumes (1 to 2 years) that can build up the extremely low levels of soil organic matter. There are lucerne varieties that could grow well these conditions. A field trial addressing this lack of knowledge in connection with biodynamic agriculture in India would be valuable.

The emergence of biodynamic agriculture in India is characterized by careful adherence to instructions given by Peter Proctor in courses and lectures. Together with skillful attention this has led to success. This applies to biodynamic agriculture here in northern India but also to a great extent to Tamil Nadu in southeast India, as I noticed during my previous trip.

I am convinced that we all have a lot to learn, and also to be inspired by, in the achievements of biodynamic agriculture throughout the world.