

DISCUSSION: Organic Agriculture and Climate Change

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I. GENERAL INFORMATION

Duration: 24.06.08

Number of participants:

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II. INTRODUCTION OF THE TOPIC

My name is Poonam and I am working as a Senior Technical Expert with the Sustainet Project of GTZ. Sustainet is an acronym for "Sustainable Agriculture Information Network." (website <http://www.sustainet.org/index-en.html>)

Sustainet is composed of a German network and three further networks in the pilot regions of India, Kenya / Tanzania and Peru / Bolivia. As the name suggests, the program aims to establish networks between institutions involved at local, regional and International levels. Through Sustainet (Sustainable Agriculture Information Network), we are working to highlight the issues and to demonstrate the benefits, viability and widespread applicability of sustainable, locally adapted land use as a strategic way to overcome hunger and poverty.

Millions of farmers in remote rural areas of India struggle to feed themselves and their families. Most of these are small farmers with small landholdings. By practicing the India's so called Green revolution methods their lands have slowly become unfertile and they are not in a place to produce food to feed them. At the same time, their environment - the resources on which they

depend - is deteriorating daily: their yields decline as erosion and deforestation gnaw at vital resources, and wells run dry as the groundwater sinks. Driven ever further into debt by the pressure to pay for expensive yet unnecessary inputs, thousands of desperate farmers have taken their own lives. Agriculture is both affected by climate change but also contribute to it. The continuing emission of greenhouse gasses is changing the world's climate and creating extreme weather phenomena, worsening problems of droughts, floods and storms. Biological diversity is diminishing and soils are losing their fertility.

Sustainet (India) is working on the up scaling of good agricultural practices in different agro ecological zones of India. **As organic farming could be one of the coping mechanism and adaptations to climate change in rural areas, I would like to know more about the experiences from different parts of world. How do organic agriculture systems utilize traditional skills and knowledge, manage with weather extremes, and enhance productivity and resilience?**

Warm Regards,

Poonam

More information about Sustainet India:

In India, Sustainet is a group of eleven partner organizations that have a background for working on issues based on organic farming, creating linkages between farmer and markets, advocating public private partnerships and tackling issues of dry land agriculture by watershed approach keeping in mind the protection of biodiversity. The best agricultural practices identified with the Sustainet partner organizations shows how sustainable agriculture can help India's farmers - especially those in poor, remote areas - pull themselves out of poverty. It details 14 examples of how development initiatives have helped farmers in variety of different areas of India including in some of the remotest parts of the country break out of the cycle of poverty, debt and environmental degradation, and improve their lives and livelihoods through agriculture that is economically, ecologically and socially sustainable.

III. LIST OF CONTRIBUTIONS

Contribution by El Fadil Ahmed Ismail, Food Research Centre, Khartoum-SUDAN

Dear all,

Organic farming was far in history of Sudanese agriculture but recent emphasis was made by the Arab Authority for Agricultural Development (2001) to produce food commodities free of agricultural pollutants, mainly for export. In practice, **almost all food crops produced in traditional and mechanized rainfed agriculture (in Sudan) can be considered as pollutants free** i.e. **no fertilizers, herbicides, fungicides or any other chemicals are added**. This includes food crops like sorghum, millet and sesame that can be accepted largely as biofoods. **Sudan** with its given potentialities have a **good opportunity in trading biofoods (organic products)** hence **realizing additional export earnings and enhance farmers incomes, food security and rural development**.

I do agree with Poonam that **organic farming could be one of the coping mechanism and adaptations to climate change** in remote areas which suffer from severe droughts and farmers rarely have access to finance or extension supports. **However, indigenous knowledge could hardly be transferable to other climatic conditions**. As you know **problems with organic farming practiced by rural farmers is the very low yield (productivity) and relatively high cost per unit produced**.

Of the main **hindrances to organic farming** (biofoods) development in Sudan is **absence of an organizing body to oversee** the whole range of **issues along the supply chain**. Over and above, there is a pertinent **lack of awareness of biofoods on part of farmers** for international markets which have high demand and consequently **limits their trading opportunities to local markets**.

Dr. El Fadil Ahmed Ismail

Contribution by Cristina Grandi and Louise Lutikholt from the International Federation of Organic Agriculture Movements (IFOAM)

The 16th IFOAM Organic World Congress was recently held from 18th to 20th June in Modena, Italy [http://www.ifoam.org/events/ifoam_conferences/owc/Organic_World_Congress.html]. There was a whole day session on organic agriculture and climate change, organized by FAO. The session agenda and documents can be found at http://www.ifoam.org/events/ifoam_conferences/owc/modules/wed_workshop_climate_changes.html

Some presentations of particular interest to the present discussion include:

The Comparative Energy Efficiency of Organic Farming

http://www.ifoam.org/events/ifoam_conferences/owc/modules/abstracts_pdfs/Azeez_abs_WOOA_A.pdf

Soil Fertility Management and Compost Use in Senegal's Peanut Basin

http://www.ifoam.org/events/ifoam_conferences/owc/modules/abstracts_pdfs/Diop_abs_WOOAA.pdf

Sustainable Organic Agriculture Conserves Energy Resources

http://www.ifoam.org/events/ifoam_conferences/owc/modules/abstracts_pdfs/Pimentel_abs_WOOAA.pdf

Besides, IFOAM has also put together a brief called "Organic Agriculture's Role in Countering Climate Change" which highlights the positive contributions of organic agriculture. The brief is available at http://www.ifoam.org/organic_facts/benefits/pdfs/climate_change_english.pdf

Contribution by Abdul Raziq Kakar, Livestock and Dairy Development Department, Balochistan

Dear all,

I am Raziq belong to the remote and the poorly infrastructured area of Pakistan named as the Balochistan province. I completed my PhD dissertation on the local livestock especially camel and pastoralism. I worked in the north-eastern part of Balochsitan known as the Suleiman region.

Actually two areas of the north-eastern Balochsitan i.e. Suleiman region and the Kakar Khurasan are the cradle of the livestock breeds and rich in organic agriculture. The people of the area rarely use synthetic means to cure their animals and to increase the fertility of the alnds.

I would like and wish to write in detail about the practices the local farmers use to produce organic food and to explain their efforts to save the friendly environment, which might not be possible in one email. I would like to write on each topic in detail on by one. Please find below a brief of my study on organic practices by the pastorals in Suleiman mountainous region in Pakistan.

What the pastorals do?

In Suleiman mountainous region, **about 96% of the pastoral people of the region depends on the organic farming**, out of which 97% follow seasonal migration along with their livestock with or without their families. All the flood irrigated agriculture is practiced without using chemical fertilizer and pesticides. Only the tall local variety of wheat is used for the flood irrigating agricultural fields. Majority of the farmers follow their indigenous star calendar for the crop cultivation and animal breeding program. About 83% of the pastoral people believed that indigenous knowledge is more reliable, easy applicable and cheaper than western style of medication. The pastoral people preferred to use their own animal based products like Ghurree (butter oil), butter, Shlombey (whey), Kurht (dried cheese) and Lanthi meat rather than the products available in the market for the same purpose.

The region is very famous for organic agriculture and livestock production in a pastoral system, since centuries. They use **flood water for irrigation** of their Bandat (small dams or plots). The **flood water is rich source of organic manure composed of soft mud, animal dung and foliage**. They fill their Bandat in Wassa (monsoon or wet season) many times, to further increase soil fertility and the soil humidity shelf life. At the end of the Wassa (October) crop fields are ploughed mostly by bullocks and asses but the large farmers use tractors for this purpose. The current higher fuel prices and the continuous land distribution between the increasing numbers of families once again increase the use of draught animal for ploughing. No flood water is applied after sowing of the crops and only natural precipitation provides humidity. The crop of wheat is harvested in the month of June, and if the early monsoon starts the Bandat are again filled and the pulses or grains crop like sorghum, millet and maize is cultivated. These all crops are used by the farmers themselves and very small portion are spare for sale. In many cases they offer the surplus grains to their animals in rainy days. Only the large farmers have excess crop than their use. The lands are used mostly for one crop annually and therefore, sustain their fertility.

The local varieties of crops are used which are already resistant to diseases. The farmer of the area uses the tall varieties of the wheat, which are disease and drought resistant. The variety is also insect resistant and wild bird like sparrow cannot eat its grains in milky stage. The tall variety of wheat also produces more straw for their animals than the dwarf hybrid varieties. The straw is offered to the animals especially cattle in the dry and scarce period.

Majority of the pastoral people (96%) depends upon the organic agriculture and livestock production. The pastoral people exercise a regular system of migration. Aujla and Jasra, (1996) also reported that the pastoral communities throughout Balochistan follow a regular pattern of migration depending upon various factors. About 97% of the pastoral people follow seasonal migration along with their livestock with or without their families. They transport their families and luggage on the back of camels, asses and sometime bullocks are also used for this purpose. The pastoral people have two types of settlements in a year depending upon the vegetation, water availability and season. Their movement originates from the winter settlement (Mena) after the wheat harvest and move upward in the high mountains to summer or wet season settlement (Gholie). They use the vegetation of the highlands and the pleasant and cool weather. The spent wet season there, graze the fresh and succulent vegetation. The well drained topography during the wet season of monsoon results in the lower risk of disease outbreak especially the foot and mouth disease. Some herbal plants found on the highlands like Artemisia, Ephedra and others are well praised for their health friendly characteristics. The farmers believe that offering these herbal plants once in summer keep the animals away from diseases round the year.

Then the pastoral people come down in the autumn after harvesting the vegetation of the high Alps to keep their animals in comparatively warmer and favorable environment. The winter grazing area is strictly banned for grazing in summer and wet season and such a system is known as Pargorr locally. The animals graze on comparative low lands in winter near the crop fields and piedmonts.

Star Calendar and Indigenous Knowledge

The farmers strictly follow the star calendar Permani for sowing and cultivation of the crops. This

system is the part of their centuries old indigenous knowledge. The same calendar is used for the animal breeding, movement, housing management and all other livestock related activities. By the grace of this system the farmers save their livestock and agriculture from the heavy use of medicine and pesticides. **About 83% of the pastoral people believed that indigenous knowledge is more reliable, easy applicable and cheap than western style of medication.** Their mode of life, production system and pastoral way of life make their life easy, near to nature and health friendly.

Food preference and behaviour

The pastoral people **preferred to use their own products mainly based on organic agriculture**, rather than the products available in the market. They use wheat, maize, sorghum, millet and pulses from agriculture origin. The animal products like Ghurree (butter oil), butter, and Lamm (fats of the fat tailed seep), Shlombey (whey), Kurth (dried cheese) and milk are used in the spring and summer seasons. In winter they use Lanthi meat and animal fats to coup with the cold waves of winter season. Lanthi is a dry meat prepared by drying meat under natural temperatures, humidity and circulation of the air, including direct influence of sun rays. The cool and dry air of the region is well suited for this type of preservation. This method is the oldest method of meat preservation. It consists of a gradual dehydration of pieces of meat cut to a specific uniform shape that permits the equal and simultaneous drying of whole batches of meat. Such a meat is prepared from the mutton of sheep, beef of cattle and camel. Camel milk is very much liked by the pastoral people. They know the health friendly characteristics of camel milk and Kohi camel is the best of the area for reasonable milk yield while keeping on ordinary range like conditions (Raziq and Younas, 2006).

Woman Role

Women help in feeding, milking and management of animals at home and taking care of young and sick animals. She also takes part in the crop production and harvesting activities. The women manage all the activities at home like cooking, cleaning and washing and bringing water from outsides. She cares the home and the kids for all necessities (Raziq, 2006, 07).

Conclusion

The study concluded that **organic farming still provides safe and secure food to the majority of the people residing in the region, especially the pastoral people.** The better health status of the people of the area is due to this precious food which is produced without the deleterious residues of chemicals and pesticides. There is need to save this system as the increasing commercial agriculture and vegetable production is a threat for that system. For more vegetable production, heavy use of pesticide and fertilizers is practiced which results in the adulteration of the food chain. The old and organic system is not only a production system but also the part of the heritage and culture of the area. **So there is need to conserve this system, their crop verities and animal breeds according to their own needs and perspectives.**

Contribution by Zakir md. Hossain, Krisoker Saar (Farmers), Bangladesh

Dear Poonam,

Good morning from Bangladesh. I am a Notun Krisok (Organic Farmer). I initiated the tiny Farmers' Research Endogenous Institute (its leaflet is available at http://km.fao.org/fileadmin/user_upload/fsn/docs/Institutional%20Brief_KSFV_11.0.pdf)

On one hand, **farmers in Bangladesh or even on the Gange floodplain culturally hold the wisdom of Organic philosophy.** I would like to go back to 1999 when I returned to my locality from Wageningen University after completing Masters in Ecological Agriculture with the aim of establishing the tiny Farmers' Research Institute which will be guided by organic philosophy. People in the locality had the believe then that nothing will be produced without chemical fertilizer and pesticides. We started to grow vegetables on a piece of rented land and worked hard. In the

meantime, we integrated the school children with the initiative. Some people even called us crazy/ mad. But they continuously visit the field and monitored our activities and thoughts. Our production was excellent. Nowadays farmers in the locality here do try to produce their vegetables organically.

To motivate the community, our endogenous Institute tried to invent some unique methods/ style:

- o No project culture
- o No shiny infrastructure
- o No compromise
- o Open for all (no groups)
- o Practicing with School going children in play mode
- o News board
- o Continuous discussion in public places like teal stalls, market places.

We always try to hit the wisdom level of the local people and let them do the jobs as they want to. We never prescribe anything rather than support them to find the solutions of their own.

For example, in case of soil health improvement we initially tell the people to plant and conserve local trees. As it would be long to give all the details of our approach, I share herewith an abstract “Social, Legal and Economic Aspects of Organic Agriculture in Bangladesh – Krisoks’ Perspectives and Experiences” (available at http://km.fao.org/fileadmin/user_upload/fsn/docs/SocialLegalEconomicAspectof%20OA.pdf and a short paper “Paradigm Shift from Project Approach to Krisok Approach for Holistic Rural Development- a local initiative (available at http://km.fao.org/fileadmin/user_upload/fsn/docs/EvolvingStrategy_KSFVbd.pdf

In Bangladesh, around 20 organisations so far do have organic farming project. Bangladesh Government did only formulate a Draft policy on Sustainable Agriculture in 1997. But it hasn’t seen the light yet. UBINIG does have good works on Organic farming. Practical Action (ITDG) try to perform, but they don’t mind to promote hybrid seed as well.

In brief, Bangladeshi Farmers hold the potentiality but need first the policy and recognition of the existing initiatives. The rest of the job will be done by them. As they culturally hold the wisdom of organic philosophy.

Sincerely,
Zakir md. Hossain
Krisok

Contribution by Farhad Mirzaei, Ph.D Research Scholar from Iran, Dept. of Livestock production and Management, National Dairy Research Institute (N.D.R.I.), India

Firstly, I should remind me and others what is the meaning of organic agriculture, whether it is new thing or it is really older than any of us.

Yes, it is not new thing, it was before than industrialization of the world, but at that time, we didn’t pay attention to it, because current problem of our earth was not there.

Another important thing is the growth of world population which is pressing any work on controlling of pesticides and chemical compounds in crop production.

So, I think, scientists should work hard like industrialization time to create new technologies for organic agriculture to be up to current condition. Agriculturists along with researchers should think together to find out new ways to recreate ancient organic farming according to natural resources shortages, daily challenges which our world are suffering like fuel price, insecurity, bio-security, terrorism, unfair capitalism.

Finally, I think, because of costly activities for installing an organic farming, at first, we should maintain some which are still doing agriculture with less usage of chemical compounds. Secondly, we should register any activities at clean farming level around the world.

Maybe we will be able to prevent quick development of climate change, which is better to say climate loose or negative climate change.

Farhad Mirzaei