

Kyusei Nature Farming and Oxfam GB Grass Root Strategy for EM Extension in Sindh Province Pakistan.

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Abstract: *The southern province of Pakistan, Sindh is accounted for loss of arable land due to mismanagement of natural resources whose 40 % of land is under water logging and salinity condition. All programs addressing poverty alleviation are partially successful. The rural poor who account for the 70 % of the population are related to agriculture. The green revolution agriculture system has started a vicious circle of poverty where poor farmers are doing negative farming. The Agriculture Extension Department and the research organizations of Sindh have failed to address the issue of resource degradation. No alternative was available to farmers of Sindh for sustainable agriculture system. Oxfam GB an international NGO in collaboration with other organizations is addressing the issue of resource degradation through its poverty alleviation program ensuring community participation in Sindh. The challenge of introducing the E.M technology for the poverty alleviation program was taken by Oxfam GB in Sindh province with active participation of 17 grass root groups in five districts of Sindh. NFRDF Pakistan initially provided the technical support in 1998. The innovative methodology of spreading E.M nature farming for the poorest of the poor has resulted in training of about 10,000 people and spread of EM to 342 villages as “E.M Message Villages” in 18 months period. The activists are trained as trainers to educate farmers at doorsteps. In Sindh the E.M movements is taking the shape of a peoples movement for social harmony and poverty alleviation. This paper presents the case study of spreading EM technology through community groups and its impacts on soil and environment. It will also draw learning lessons for E.M extension strategy in South Asia region where the grass root movements is older than Sindh.*

Introduction Background and Context

Agriculture accounts for more than 24 per cent of Pakistan's GDP, more than 50 per cent of its employment, and, directly and indirectly, 70 per cent of the country's export revenues. Agriculture also has a central role to play in alleviating poverty, given the concentration of the poor in rural areas, and it is a principal concern in any effort to protect the environment, as agriculture is the primary user of the land and water resources. Pakistan's agriculture depends heavily upon irrigation, which covers 79 per cent of the total cropped area of 20.8 million hectares (51 million acres). Irrigated agriculture in turn is by far the dominant user of available water supplies, accounting for 98 per cent of direct flows and the bulk of re-flows.(SAR 1997)

OXFAM GB has identified the process of resource degradation through its direct experience of working with the poor as a major environmental threat and the key factor that undermines the livelihood of the poor. Poverty has been exacerbated by

low crop yields that are caused by unsustainable use of natural resources including mismanagement of irrigation water that result in severe water logging and salinity. Vast areas both on the left and right banks of the Indus River have become unfit for cultivation over the past many years. As a result, the population of migrant and marginalised communities has significantly increased. The 80 per cent of the pesticide is sprayed or applied on cotton crop, and as a cotton pickers basically women are most effected. (Tallat 1998)

A distinctive feature of poverty in Pakistan and especially in Sindh is the failure to translate economic growth into the enhanced provision of education, family planning, health care facilities, water, sanitation and other essential services for the majority of the population particularly in rural areas.

All along the Indus Basin but especially in Sindh, economic growth and progress towards poverty alleviation are now critically threatened by widespread loss of productive farm land due to mismanagement and degradation of water and soil resources. As a result of water logging, salinity, water shortage at canal ends and intensive farming without proper nutrient management, overall crop production has fallen to very low levels and large areas of previously cultivated land have been reduced to barren tracts. The impact on rural livelihood is catastrophic and entire farming community is forced to abandon their land to work as agriculture wage laborer or migrate to over crowded cities in search of employment. A research study carried out by Oxfam on impacts of pesticides on women reveals that women are most effected by the wide and indiscriminate use of pesticide effecting their health. (Oxfam GB 1997)

The irrigation management system is being decentralized by involving the farming communities to operate and maintain the distributory canal system. The pilot experience is being made by OXFAM and the International Irrigation Management Institute (IIMI) in Sindh. The involvement of farming communities in managing irrigation systems would ensure the reliable and equitable water distribution, and proper utilization of water resources would increase agricultural productivity.

Combating the Poverty

Oxfam GB is working in Sindh province since 1992, addressing the poverty issues and working as a disaster and relief organization. It works through community based organizations (CBOs). Oxfam GB has a global mandate to work with poor people so they can overcome their poverty and have access and control over their resources. As a result of Oxfam experience a program addressing sustainable livelihood was initiated with high consultation and participation from the rural communities in May 1997 for a five-year period. This program is co-funded by Oxfam, European Union (EU), Department for International Development (DFID) UK and Swiss NGOs Program Office (SNPO) Pakistan. The overall aim of the Integrated Natural Resources Management Program (INRMP) is to support rural communities in developing sustainable soil and water resources management system. One of the specific aims which is relevant to the current topic is to “to promote sustainable agricultural practices which produces a greater crop yield whilst conserving soil fertility and reducing dependence on purchased agro-chemical inputs”.

Role of Agricultural Research and Extension

The provincial department of agriculture has a strong network of various directorates of agriculture research, education and extension to educate and equip with modern technologies the poor farmers at their doorstep. Unfortunately with a vast network and large number of staff available, these organizations do not have enough resources and the outreach programs to farmers which can bring the research that are confined to the papers or model farms to the field. The component of training to the local people and the confidence building among the farmers and the organizations is very much lacking. The top down approach does not cater for the indigenous knowledge that farmers have to offer and learning opportunities to transform into research which is farmers friendly and acceptable.

Methodology Oxfam GB in a short time of 18 months with the partnership of rural communities having small operational team of two persons - a Program Officer and a Technical Assistant has been successful in introducing, practicing and training farmers both men and women for E.M technology. In 7 districts out of 21 in Sindh, the EM message has reached around 10,000 people including 2,000 women, in 342 villages termed as a “E.M Message Village”. This has been achieved through the communication strategy, training and construction of E.M fermentors with the support from Oxfam. The number supported was 30, but it has been increased to 70 fermentors, the community has constructed those themselves.

Train the Trainers

The important lesson learnt in the community development is to increase the capacity of local people, which will ultimately result in overcoming poverty and the sufferings. One of the means is training of local people in different aspects of development.

Dr. Tahir Hussain provided 3-day training on EM to farmers during November 1997, to a group of 18 farmers activists (men and women) of 11 CBOs at University of Agriculture, Faisalabad, sponsored by Oxfam. This was the turning point in the development context of NGOs movement in Sindh, a future shaping in the form of Natural Resources Management through E.M technology.

The next challenging step was to take EM technology to the field to adopt by the real beneficiary groups, who are poor farmers and do not have an access to the information. It was expected that this technology would bring meaningful change in their lives and they can use the sustainable means of natural resources. This was done through organizing farmers field schools in the respective villages with participation and technical support from Dr. Tahir Hussain and NFRDF. Through this Oxfam gained its own technical capacities. These schools were organized in 5 districts of Sindh with active participation of CBOs and farmer organizations (FOs).

Oxfam GB Sindh Office in order to take the work further and demonstrate the usefulness and effectiveness of E.M technology supported small grants (credit) to small farmers and sharecroppers of CBOs from DFID UK funding. The credit was given to construct the fermentors in different agro-eco systems in Sindh so that EM could be applied in different cropping systems.

The second phase of training to CBOs activists (women and men) was initiated by Oxfam to build the local capacities, so they can effectively utilize and maintain the standard for EM work. Oxfam established a small 4,000 liters EM stock at Hyderabad and NFRDF supported a 4,000 liters EM stock at Ghotki. This played an important role in establishing EM work and support required at the initial stage. Oxfam to take work further down to other parts of the province and establish a strong mechanism of capacity building, technical support and monitoring and evaluation through a person appointed as Technical Assistant with the support from Oxfam and SNPO.

Oxfam with the courtesy of NFRDF contacted APNAN, Thailand for the training of four activists and Oxfam staff in January 1999 at Nature Farming Center, Saraburi, Thailand. This resulted in a highly trained and motivated volunteers and messengers of EM, who are now supporting other CBOs and NGOs in the area and providing training and support to farmers. One example to quote is of an activist Mr. Mithal Khoso of Sindh Goth Sudhar Sangat who has visited all over Sindh and developed a strategy to reach people and institutes for spreading E.M message in Sindh.

The sharing of Oxfam experience in Sindh with other NGOs and donors has an overall impact at country NGO movement. When Oxfam shares EM experience in a sustainable land use strategic workshop organized by SNPO, the NGOs from all over Pakistan were impressed and had a desire for EM training for their activists and farmers. Oxfam GB taking a lead has organized a training in the end of August 99 for NGOs of Pakistan. This will take the EM technology to other provinces and it is hoped that EM will spread more sustainable ways in other provinces. This will also bring NFRDF in contact with other NGOs in other provinces and a strong alliance building for EM work is anticipated.

Five-step dialogue developed by the Oxfam GB as EM extension strategy is described below:

- Sensitization of CBOs and Farmer Organizations
- Train the trainers
- Development projects for E.M technology.
- Effective communication strategy.
- Experience sharing with other stack holders.

Results

Impact Assessment

Application of EM through Fermentor Bokashi and EM FPE was made to various crops in 3 different agro-ecology zones in Sindh. In fact, EM was applied on cotton, wheat, vegetables and fodder crops. The fertilizer application was reduced to zero at most of the places and half at others. The participatory methodology was used to gather data regarding increase in crop production. The average increases in cotton yield was from 396 kg/ha to 1,488 kg/ha (an increase in 375 per cent). The yield is even low, but it is anticipated that with the continuous use of EM, it will improve more. The average yield of wheat was 1,388 kg/ha before the application of EM. After application of EM the yield of wheat was increased to 2,380 kg/ha with fertilizer input of one urea only nitrogenous fertilizer. One farmer namely Muhammad Hanif at village Bhawal Kaskani earned Pak Rs. 60,000 per 0.39 ha in one season by selling his onions, on which EM technology was used.

One of the areas near Hyderabad called Jhando Khoso, where the land was completely destroyed and degraded due to brick kilns and removal of topsoil by the kiln owners. It was due to scarcity of the water in the tail end of canal system where poor farmers had to give lease of their lands to brick kiln owners. These lands were abandoned for 10 years, but they got 1,984 kgs yield of wheat per hectare after application of E.M. This has a magnificent impact on the lives of the poor.

The use of EM for fish farm at Bhawal Jaskani yielded an increase in one kg of fish weight with the application of 5:100 liters ratio each month for two months.

The social relationship has become better with increase in communication and networking between various communities and CBOs. They are now in good contact with community and EM has been an intervening factor in community mobilization and social organizations. In Village Jhano Sharif Shikarpur District, there were 7 killings due to land dispute between 4 tribe. Now each person from a tribe has been in a CBO and on a common platform to solve the issues and problems of their community. EM has played a role of love and brotherhood. The community trust on CBO has been increasing and they have a feeling of brotherhood and empowerment.

Farmers due to change in economic status and improved earning has now improved their status and life style by investing in livestock, constructing houses and spending on girls' education.

The severe war like situation exists between the head reach farmers and the tail end farmers at Kot lal minor in Khairpur. The channel of communication has been established with social mobilization process and the interventions of EM by the CBOs. This resulted in the improved water distribution due to community participation and increase of 2,000 ha of land under cultivation, which was not possible due to mismanagement of water at the head reaches of the canal.

The relationship with the field staff (Agriculture Assistants) of the agriculture extension department has improved and the staff is attending the EM training with the CBOs and playing a role in the dissemination of EM technology. This is a step towards good governance and accountability.

EM technology has also been introduced with the farming communities, where IIMI has been forming farmer organizations on about 20,000 ha of land in three pilot distributaries in Nawabshah, Sanghar and Mirpurkhas districts of Sindh province. Close collaboration of Oxfam and IIMI for the farming community would bring better results in future.

Case Study:

Riches from chilly crop of Sufi Deedar

Sufi Deedar Ali, 35, graduate, father of eight children has been working in the field of irrigation farming since he was studying in class-IX“. I had to discontinue my education and pay my full attention on cultivating the piece of land owned by the family following the death of my father in 1979” he recalls. Sufi Deedar, with the help of his brothers, cultivated chillies on 0.39 ha of land. Motivated by Al Mustafa Welfare Association (AMWA) the local CBO to use E.M he got constructed his EM

fermentor in January 1998. The result was tremendous. The chilli plants were greener “I also sprayed the Chillies with Neem biological pesticides in place of commercial pesticide”. An agricultural contractor offered him Rs 10,000 for 0.4 Ha of land, however he decided to market the crop himself. He earned Rs. 120,000 from the crop and still a crop of Rs 15,000 is left in the field. The other farmers who had used chemical fertilizers and pesticides, could not earn more than Rs. 35,000 per 0.39 hectares, as their crops got attacked by leaf curl virus, despite the heavy use of chemical pesticide.

“I feel that I am no longer poor,” he says. (Brohi and Sabreen 1999)

Discussions and Conclusion

The strong linkage of poverty alleviation capacity building and the EM is well established. This has not only increased crop production but also played an important intervention for organizing and empowering communities. It has also addressed the issue of peoples basic rights for sustainable livelihood. People have meaningful choices for the management for their natural resources. Now poor people demonstrate that they can be effective managers of their resources.

Community organizations had played a lead role in the dissemination of technology and it is possible to spread it with strong extension strategy. The networking with the NGOs, government departments and the research institutes had played also an important role in spreading EM.

The impact of the EM on the lives of the people is significant in most of the cases. The men as well as women are interested in learning and applying the EM technology. It is easy to use and have impacts on land and environment, and ecosystems.

Because of the presence and strong partnership with local NGOs and CBOs of Oxfam GB in Bangladesh, India, Sri Lanka, Nepal and Afghanistan, it can with APNAN play an important role in south Asia for dissemination of EM, for the socio-economic benefit of rural poor people.

NFRDF can play a significant role in marketing of EM by establishing the E.M depots to various accessible places to meet the growing need of CBOs.

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