Livestock rearing and ecological agriculture

Ratnagiri farmers make their choice

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Young farmers in Ratnagiri are successfully preserving the unique diversity of the region by integrating small scale agriculture with livestock production. Looking beyond short term gains, these young farmers are also spreading the sustainable agricultural practices to many others in the region.

Tucked away in the folds of the Sahyadris lies the Vilye watershed. The Watershed development programme initiated in the 1980's – one of the first of its kind in the region – transformed 6 villages of the watershed in more ways than one. First of all, it ensured there was water available 12 months of the year; small check dams renewed land and soil, plantations of trees ensured that forests laid bare by the charcoal trade were green once again. Next, it ushered in a cash economy. Everybody began planting mango and cashew. To protect the young plantations and nurseries, local goats were killed or driven away, and the local patterns of agriculture and livestock rearing were disturbed forever.

Development and progress are often measured in economic terms alone. The social and environmental effects of different development programmes take a while to manifest themselves. Sometimes, difficult choices have to be made, where the short term economic advantage may have to be foregone to retain a long term social and environmental goal. This is the story of how a group of young people from the region, associated with ANTHRA have tried to retain the uniqueness of the region with small scale agriculture and livestock production without being drawn into the vortex of global change.

The Vilye watershed was a well known watershed in the region. When water became available in the 1990's in the Konkan, many people in the region nurtured ambitions of running a successful dairy programme. In fact, one of the local ministers even managed to sanction a sizeable amount of money for starting the dairy. Unfortunately, none of the villagers were ready to take up the initiative. The reasons were simple. Most of the able bodied men were away in Mumbai working and the major burden of crop farming was on the women. With the increased work burden, they had even given up planting certain varieties of pulses and cereals as it was easier to buy these with the money orders their men sent home. Dairy animals meant more care, more fodder, more water, more work and the women were reluctant to take on more than they could realistically manage. The dairy programme was quietly withdrawn.

Building local human resources

Around the same time, about 10 young people from the region were trained by ANTHRA as animal health workers. ANTHRA's training laid emphasis on local breeds and species, locally available fodder and importantly, locally available herbal medicines. As these young animal health workers documented and validated their local systems of agriculture and livestock production their own confidence in their own knowledge and systems grew. It brought a new approach to farming where these young people wanted to look beyond short term economic gains. The village community though was slow and reluctant to accept what these young people had to say.

It took multiple incidences of fowl pox and salmonellosis which decimated the poultry population for the village community to see the value of having an animal health worker in the village. The AHW's responded to the disaster with herbal medicines and prophylactic vaccination programmes the next season .They also helped mobilize the local veterinary department to administer the necessary vaccinations for large animals. They answered calls when animals were sick, they shared knowledge of the herbal medicines they knew, for more serious conditions they asked for help from the veterinary community. As the mortality morbidity of the animals decreased the communities confidence in these animal health workers grew.

However, it was soon apparent that the extent of development in livestock in the region was limited. Dairying as an economic activity was not possible because of an acute scarcity of quality fodder. The goats had disappeared with the watershed development programme and communities were reluctant to bring them back. Only back yard poultry seemed suitable and acceptable to the region and the animal health workers had done all they could do to keep the birds healthy. They were vaccinated on time, fed and watered properly, given immediate care when they fell sick.

Agriculture, first

The animal health workers were keen to explore other issues related to agriculture. Mangoes, especially alphonso mangoes are a cash crop from the region and farmers, even small peasants, began planting mango trees to supplement household incomes. To ensure good returns, farmers began spraying chemicals in the form of hormones and pesticides to protect the fruit. Unaware of the side effects of these chemicals, large scale spraying would begin in the month of December and the area would be covered in a thick chemical haze, as village after village, spraying was done.

The animal health workers by now convinced of the validity of herbal medicines for animals were keen to experiment with herbal medicines on crop varieties. A set of small trials were run one winter using different combinations and there was a great deal of success. Locally available herbs like *Vitex negundo, Ocimum sanctum* and *Leucas stelligera* were combined in different proportions and combinations along with cow urine were formed as effective as chemical sprays and definitely less toxic. Spurred by the success, the AHW's began regularly preparing and bottling these bio pesticides for use and sale in the region . They faced a considerable amount of competition though from company representatives who supply pesticides to the farmers.

As the group looked for new ways to enhance their agriculture production vermi composting appeared as a suitable intervention and pilot vermi composting units were started. Initially a vermicompost unit was started in the small bio diversity park run by ANTHRA in village Tarwal of Ratnagiri district in the year 2002 under the Small Grants Programme of the GEF project. The unit did well because the group understood very soon that earth worms need to be cared for like any other animal. Soon the programme began to spread to other villages in the area. In 2005 - 2006 the group was contacted by the local unit of the *Jal Swaraj* scheme and they began training farming groups on vermicomposting and back yard poultry rearing in over 40 villages of the district.

Reviving local foods

In 2005, a team of students from IIM Ahmedabad visiting the area conducted a small exercise on food and fodder security in the region through a small audit. It was found that while the village exported vast quantities of mangoes and cashews, the income did not necessarily result in enhanced nutrition for the average small farmer. Amongst others, fresh vegetables emerged as a major deficiency in the local nutrition system as people had given up cultivating local varieties of greens. Households were depending on vegetable imports from Belgaum and Kolhapur. Not only were they expensive but also poor in quality owing to travelling long distance.

Reviving local food varieties and increasing local production became the new challenge within which procuring local seeds emerged as a major challenge. Again, private companies with colourful packaged seeds had won. Farmers find it easier to buy a packet of seeds from a shop as opposed to storing their own seed for the next cropping season. The animal health workers began a process of systematic collection of local seeds of different varieties as well as documenting local methods of storing seed.

Integrating farming and livestock systems

To increase production of rice, the local staple, different methods were evaluated. The SRI method was already being popularized by NGO's in other parts of the country. A modified version, more popularly known as the Japanese method locally was already being practiced by a few farmers. SRI methods though required careful inputs into the soil in terms of fertilizer. The group went on to learn other composting methods as well as the preparation of organic growth promoters such as panchagavya and starter solution which used products from livestock especially cow urine and dung. Experiments were also conducted with goat urine and buffalo urine to see if the effects were similar. The critical importance of livestock to agriculture emerged. There was a huge shortage of animal manure in the area as people had sold their livestock especially local cattle. In those pocket sized rice fields local bullocks for traction and animal manure cannot be substituted with chemicals and machines.

Slowly, the process of reintegrating livestock and agricultural systems in the region took place with careful use of locally available seeds and crops, livestock and livestock products as well as medicinal plants and herbs. Careful documentation as written records and as short films has also taken place. A small degree of traditional local food processing is also in progress. Dried kokum, kokum sherbet, karvanda pickle, herbs, spices and cashew nuts are some of the products. An annual cookery competition where only local foods can be served reinforced the need to celebrate local diversity.

Moving ahead

Today the team of Animal health workers is in the process of registering their own cooperative in the Ratnagiri region. Fifteen members have come together so far pledging to pursue ecological agriculture on their farms. This cooperative will decide what they want to grow and how they will grow the crops on their land. One of the key objectives within the cooperative is to experiment with ideas and also to share this knowledge with others in the region. The group is conscious that the area is unique in its biodiversity and natural beauty and these hold promise for the future.

The challenges continue. Every now and then disasters like the cyclone Phyan, floods or just delayed rains hit the crops. A proposed nuclear power plant and a thermal power plant threaten to destroy the mango and cashew plantations. The energy demands of a larger nation state ride over the dreams of small groups of farmers. However, thanks to the diversity of knowledge and systems, the community is ready for them.

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