Good Practice Brief

Building Fodder Security in Rural Areas:

Validation of Traditional Knowledge on Fodder & its Reintegration into Livelihoods

Summary

There is a wealth of traditional indigenous knowledge on local practices for animal health care, feed and fodder systems for livestock rearing as a sustainable livelihood option. In the past this wisdom was passed from one generation to the other through a system of transmitting through oral history. In contemporary times, changes in socio-economic conditions, environmental degradation, dwindling natural resources and disappearing biodiversity has led to an erosion of these traditional practices.

This note presents findings of an action-research project that was implemented by Anthra between 1996 and 2003, in different agro-ecological contexts in the Indian States of Andhra Pradesh and Maharashtra. Thereafter, efforts were made to integrate and promote some of these practices widely amongst farmers and pastoralists in different parts of these two States. Reintegration of traditional practices on fodder was taken up to enhance fodder availability in the rural areas, since feed availability and its quality is one of the critical factors impacting productivity of livestock.

Key elements/outcomes of the practice were:

- Conservation of traditional varieties of seeds through community seed banks,
- Adoption of this strategy by innovative farmers in 9 district of Andhra Pradesh and 4 of Maharashtra,
- As of June 2008, about 600 farmers were actively involved in transforming their agricultural practices to mixed cropping,
- All 42 participants who had volunteered to be a part of the fodder enhancement project now own one or another type of livestock, resulting in a significant increase in the number of buffaloes and goats in the village,
- The migratory shepherd community of Medak District showed interest in developing their community land with traditional fodder trees and grasses.

Context

In order to document this critical knowledge system a comprehensive action research program was initiated by Anthra with the key focus on conducting an *appraisal of local feed and fodder used in the past and present*, the *seasonal differences in feeding practices*, the *traditional evaluation or assessment of a feed by farmers, its palatability and availability* (both temporal and actual quantity over time) of fodder, storage of feed and fodder, and *special feeding practices during disaster situations*. *Mapping grazing routes and associated watering practices* was also an integral component of the research.

Anthra, the implementing agency, took the lead in conceptualising the parameters for this participatory research process with the active participation of key community members such as farmers, barefoot documenters, researchers, healers and elders from different sections of the community who took up the responsibility for training the community researchers to document the oral traditions.

Innovation in the good practice

Scientists trained in the formal paradigms of "western science" were able to engage with "peoples science" and helped give validity to this body of knowledge which goes beyond the narrow and limited definitions of "monetary value' being placed on traditional knowledge systems. Participatory documentation of the wealth of traditional knowledge across different agro-ecological regions, communities and ethnic groups, genders and age-groups ensured that the "sum of the whole" was much greater than the individual pieces of information. It stimulated a process of self-analysis and reflection by the participating communities, which in turn, led to an increase in dignity of their own heritage and re-integrating some of these practices into their ongoing livelihoods.

The Methodology

A network comprising of various key stakeholders was formalised through a process of dialogue. There were continuous and close interactions between all the different members of this network through the entire period. The process included informal interviews, participatory visualisation exercises like resource mapping and problem ranking, observational walks, identifying plant specimens and making herbariums of the same, photo-documentation were some of the tools applied for generating the requisite outputs. This information was then analysed by the team of Anthra and key community members. Local NGOs and CBOs assisted in selecting barefoot researchers, villages and most importantly assisted in establishing critical linkages with knowledgeable farmers and community leaders. Farmers representing different sections of the community - caste, land holding, gender, age-group, participated in sharing their knowledge with respect to fodder species, their seasonal availability, palatability, its nutritional content, medicinal value, effects on animals and the reasons for their disappearance. Scientists from research institutions, experimental fodder farms, researchers and academicians provided technical guidance for the research while laboratories helped in testing the nutrient content of traditional fodder varieties. Conscious efforts were made to include women in the process of documenting since traditionally it is the women who play an active role in rearing livestock and as such are custodians of a wealth of knowledge which is not recognised.

The participatory action research process was carried out over three phases which were Documentation (1996-1998), Validation and Dissemination (1998-2003) and action research and reintegration of practices into livelihood systems (2003 to date).

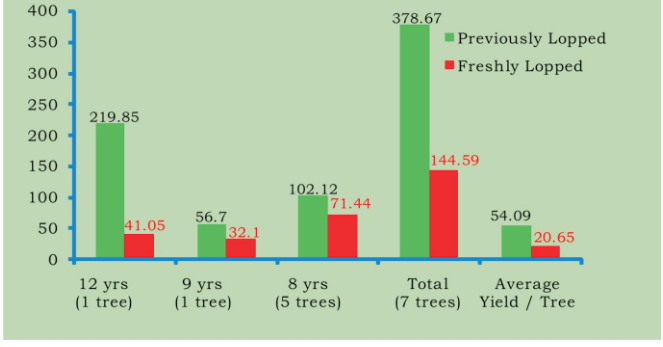
Major findings of Phase I and Phase II included a drastic change in diets and reduced variety and quantity of feed available for livestock – especially a reduction in the quality and quantity of crop residues, which was a resultant of the dramatic shift in cropping patterns from food to cash crops. Another finding was the perceptible shift of perennial grasses by annuals. The most disturbing observation was a general loss of knowledge on fodder types amongst the younger generation.

These shifts were largely linked to and embedded in the larger changes occurring in agriculture, as a response to policies that enabled capital and chemical – intensive green revolution to flourish and predominate over traditional agricultural practices.

Besides documenting indigenous knowledge systems five different field trials were conducted to validate/assess traditional ways of utilising fodder in Andhra Pradesh and Maharashtra. In depth analysis of one of these traditional practices - lopping of Acacia Nilotica trees was conducted with the objective to measure and analyse the biomass yield from lopped branches of the tree, the hypothesis being that 'correct lopping does not harm the tree, but enhances its biomass production'.

The key finding of these field trials revealed that traditional methods of lopping Acacia Nilotica trees are beneficial to the animals as they provide crucial feed, with high protein content, during the critical period of lean summer months. **The study also revealed that the practice of lopping does not damage the tree, and, in fact it enhances branching, leaf and fruit production**. However there is large variation in average fodder yield per tree, based on its age, whether it has been lopped previously or not, the soil on which it grows, rainfall, as also the lopping management practices.

Figure 1: Average Yield of Randomly Selected Samples (kg)



During the third phase emphasis was laid on dissemination of information based on the outcomes of the previous phases and reintegration of appropriate practices with farmers and pastoralists. One of the earliest interventions made by fe/male farmers in East Godavari district was to consciously diversify their cropping pattern with multiple millets, pulses, oil seeds, vegetables, as well as other ecological farming practices, which has enhanced the quantity and quality of food grains as also crop-residue and by-products available for feeding livestock and poultry. Conserving traditional varieties of seeds through community seed banks and making these available to local communities, has been a core element of this intervention. This strategy has subsequently been adopted by innovative farmers in all the districts where Anthra has active community-livelihood programs (9 districts in Andhra Pradesh and 4 districts in Maharashtra). As of June 2008 there are about 600 farmers in these districts, who are actively involved in transforming their agriculture practices to mixed cropping.

The second major practice that has gained wide popularity was pastoralists and farmers growing traditional fodder trees and natural grasses on field bunds in their private and community lands. Fodder nurseries to propagate the relevant species were established with the contribution of the local farmers. Shepherds and farmers were actively involved in collecting fodder seeds and conserving them. A survey carried out in the year 2007 revealed that all the 42 participants who volunteered to be a part of the fodder enhancement project now owned one or other type of livestock; earlier only 50 % of them owned livestock. There was a significant increase in the number of buffaloes and goats in the village.

In 2007, Shepherds of Peddagottimukkala (PGM) village, Medak district showed interest in developing their community land with traditional fodder trees and grasses. They got interested when the results of a comparative analysis on weight gain of lambs was shared by Anthra and they realised that the weight gain of lambs in their village, was significantly lower than the weight gain of lambs in other villages. A major reason for this appeared to be the comparative non-availability of diverse fodders in PGM village as compared to other villages. This particular intervention was the result of Anthra's continuous efforts of organising the community into village level *sanghams* with regular meetings, and enabling them to access health services in terms of vaccinations and de-worming from the local government veterinary hospital.

Lessons Learnt

The process of documentation, validation, dissemination and practical applications were vital in the effective re-integration and revitalisation of traditional knowledge systems pertaining to fodder. The methodology used ensured the complete participation and involvement of the local communities who bring in their traditional knowledge and experience. The scientific and traditional validation methods have shown remarkable similar findings, especially regarding the nutritive value of specific grass and tree fodder. This has helped to break the myth prevailing in the mainstream regarding the fodder value of traditional species.

1. Fe/male farmers have sound traditional knowledge regarding nutritive value of different fodders and grasses.

2. Traditional feed and fodder species are more suitable to rainfed areas compared to new fodder varieties being introduced that need irrigation facilities

3. Documentation of traditional knowledge concerning plants, feed and fodder species has to be undertaken so that this knowledge is not lost and future generations can bank upon documented resource base. This needs resources both financial and human for a considerable period of time.

4. Lopping of branches of trees undertaken in traditional ways facilitates enhanced growth of branches leading to more fodder production.

5. Forest departments can plant traditional trees/grasses that provide fodder for livestock instead of timber trees with active community participation.

6. In this experience the tribal community has been empowered to take back control over their own knowledge and related genetic resources, and utilise it in ways that are making a positive impact on their livelihoods.

7. Government policies as well as top down interventions can be counter productive if not based on the needs and requirements of the livestock keepers as shift towards non food cash crops resulted in depleted fodder resources for the livestock.

8. Community based institutions are best suited to conserve and propagate traditional species of feed and fodder.

SOUTH ASIA Pro Poor Livestock Policy Programme

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