

## Know the people.....

In this issue we would like to introduce the "Spider" group and its facilitator Mr. Selvam.

### Spider Group

Spider is a natural enemy to many pests and thus the group signifies the importance of conserving natural enemies in crop ecosystems. This group is a repository of multiple skills and experience. The Spider group is 'women dominated' in terms of numbers. Muniraj and Doddegowda are the only male members in the group. Satya, the youngest of all, is an agricultural graduate and Indumathi is the eldest. Malar, Indumathi and Jagadeeswari are married. Malar, is a participant of FFS for the second time. Chandra, the Co-facilitator of the group, is an Agricultural Post graduate, with experience of undergoing a Fellowship course in AME Foundation.



Spider group

### Meet the FAO Master Facilitator

Mr. Selvam, the facilitator of the group, is an Agricultural Entomologist, graduated from TNAU. 34-year old Selvam is an alumnus of the FAO ToF from Raichur in the year 2000. He is serving as Agricultural Development Officer, in the State Department of Agriculture, Tamil Nadu, in Thiruvadana, Ramanathapuram District. His wife is also an agricultural graduate, serving in a nationalized bank at Karaikudi. Selvam has two children. The MToF is his fifth ToF in his service as a Facilitator. He is also a talented photographer and many of his photos find a place in this newsletter.



Selvam

What other facilitators say about Selvam: 'He does a complete AESA, before spending every paisa'.

### MToF participant's views

Earlier I used to view the SA components like vermicomposting, kitchen gardening, animal husbandry etc., as separate activities. Its only now that I am able to see the link between them. I see that every activity boils down to generating biomass and improving the soil fertility in some way or the other. Having understood the inter-relatedness among different activities, I am confident of making a sustainable living out of farming.



Mr. M. Muniraj, CRP,  
B. Agraharam - CMRC

**AME Foundation** promotes ecological agriculture among small and marginal farmers in the semi arid areas of the Deccan Plateau by generating farming alternatives, enriching farmers knowledge, linking development agencies and sharing experience.

To,

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# FFS

## Discovery Learning in Dryland Farming

(A Newsletter on Farmer Field School experience)



Issue 3

1 st August 2006

- Launching of Modified Training of Facilitators (MToF)
- Organising FFS with CBOs
- Broadening FFS Curriculum to include dryland farming technologies for the first time...

### Coordinator's column

*Rainfall and Chikungunya were the two concerns dominating this period in the MToF.*

*As the planned date for sowing passed by with no signs of rains, facilitators had to look for contingency plans to keep up the momentum of the programme. Generally, the farmers shift over to Ragi and other millets in place of Groundnut, when the rainfall is further delayed. Considering these factors, the MToF team geared up to meet the challenge by including Ragi in the curriculum plan, which is the other major crop and the most probable crop to replace Groundnut in practice FFS villages. This experience offered a major learning in conducting FFS in dryland farming - Be prepared for contingency, including changing the crop!*

*Chikungunya, disturbing the health of the participants, facilitators and farmers in the practice FFS villages was affecting their participation. Now, many of them are back with good health and enthusiasm.*

G. Ravi Kumar  
MToF Coordinator

monsoon in practice FFS villages. The technological options and experimental designs learnt were discussed and suitable options were identified for the changed crops.

Participants learnt some important lessons with regard to seed germination, seed hardening and importance of organic matter in improving the water holding capacity. These were understood through short studies and experiments, which are detailed in subsequent sections.

Non-formal education sessions during this period included presentation skills and preparation of session guides. Presentation skills, being an important part in the trainers skill set, was imparted through role play. The role play included various types of presentations and participant groups could absorb the various aspects of a good presentation. Similarly, participants understood the preparation of sessions guides, with an example - 'Tea preparation'. It was a joyful way of learning by observation for all.

Participants discussed and finalised the roles, consolidated and defined them as 'Host team responsibilities' that could be carried out by each group, in turns, during regular sessions in the MToF. The first two groups took up the host team responsibility and experienced session management skills.

Waiting for the rains, the groundnut sowing was already delayed by two weeks. This was affecting the programme in two ways - the MToF sessions could not be carried out as planned in the stipulated period and the participants were missing out on important learning opportunities with the crop stand. The facilitators had to gear up to reorient the participants to think of alternative crops in case of rainfall getting further delayed. Most of the sessions in the period focused on soil fertility improvement, with the MToF group evolving a new exercise, the biomass matrix, which helped them to look closer into livelihood options in dryland farm families.

Participants consolidated their learnings in the MToF so far, with respect to the technologies on natural resources conservation and utilization in groundnut cultivation. They identified the alternative crops possible in case of a delayed



Participants discussing in MToF plot

## Technology focus

### Upgrading soil fertility

Farmer livelihoods are extremely vulnerable in dry farming situations. They are influenced by several factors, operating beyond the field boundaries. The crux of all problems converge in soil fertility, indicated by soil aggregation and its organic matter content.

The technology focus in this issue discusses the biomass production and use as a critical element in improving soil fertility, as learnt and practiced by the participants. They understood the importance of biomass in terms of household needs, options available for improving biomass production and recycling, perennials as a source of additional biomass and ways of integrating them into the dry land farming system.

Through participatory exercises, participants worked out various biomass needs of a farm family with an acre of land, as an illustrative case. They identified food, fodder, fuel and manure as the important needs and estimated a shortfall

#### The importance of soil life

A rule of thumb is that, under favorable conditions, one tenth of the organic matter in a soil is made up of soil micro-organisms. Thus a layer of 10 cm of a hectare of soil with 1% organic matter contains roughly 1500 kg of soil fauna. This equals the weight of 3 – 4 cows (Dalzell et al, 1987 – quoted by Reijntjes.C et al in 'Farming for the Future' 1992. p62)



Nursery Raising



Participants preparing vermicompost pits

#### Box-1: Options identified by participants for increasing the biomass production in drylands

1. Ragi and Groundnut in combination
2. Increasing the intensity of inter crops
3. Recycling crop residues, which are otherwise burnt
4. Growing multipurpose trees and fodder on field bunds
5. Green manure production in pre monsoon season
6. Azolla production in homesteads

of 8.6 tons of biomass annually, based on present levels of production and requirement. Presently, the plant biomass was being used for food and fuel purposes and the major shortfall was observed in fodder and manure requirement.

Participants then identified the various options for improving the plant biomass availability (Box 1) and quantified the gap that could be reduced by these options. They ranked these based on criteria such as low cost, providing multiple benefits, easy availability of materials, technical feasibility and social acceptance. They finally concluded that all options could be practised as a set or combination of activities, which will ensure the household with sufficient biomass for a year.

Growing perennial trees on the field bunds was identified as one of the viable options. Participants brainstormed to identify suitable tree species and evaluated them against multiple benefits.

## Learning by doing

### Nursery Raising

In small groups, participants learnt nursery raising, for producing quality tree seedlings of their choice, in time and with less cost. Nursery raising activities included the choice of species, nursery site, preparing a raised mother bed, pre sowing seed treatment, polythene container mix and filling, managing nursery site and the hardening of seedlings. Participant groups raised nurseries on their own, learning the skill while doing it.

### Converting organic matter into manure

Besides learning how to generate plant biomass, the participants also learnt how to convert the same into manure. In small sub groups, the participants have laid out short-term experiments on producing vermicompost, which is one of the conversion methods. They are evaluating various methods like ring, pit and heap methods of vermicompost production for their quality, time taken and the production cost. The hands-on experience in laying out the experiments was a good learning for both the participants and the facilitators.

## Short studies and their outcome

### Seed germination and viability

Participants conducted three sets of germination tests at an interval of one week. This was done to test and compare the viability of seeds decorticated by hand and by machine, beyond a period of 15 days. They also tested germination of seeds without seed coat to break the myth of farmers that biologicals damage the seed coat affecting germination. From all these tests, participants concluded that there is no difference between hand and machine decorticated seeds, contrary to the common belief that machine decorticated seeds will loose viability within two weeks. Surprisingly, they also discovered that seeds without seed coat also germinate equally well as those with seed coat, but are more prone to fungal infection.



Germination test in MToF

### Water holding capacity of soils

Participants compared the water infiltration and retention in three different soil conditions – normal field soil, soil with FYM (1:1 on weight basis) and soil with vermicompost (1:1 on weight basis), through an experiment. They found out that the water holding capacity was 22%, 43% and 62% in the three situations, respectively. Participants concluded that the addition of FYM to soil enhanced the water holding capacity. Addition of vermicompost improved the physical properties of soil and increased the surface area for better moisture retention.

## Scaling up through practice FFS

Indranagar and Mayanayakanahalli are two villages in Thally block of Krishnangiri district. The FFS participants, all women drawn from SHGs of the villages, have been adopting various practices for conserving and utilising natural resources in FFS plots, for the past one month. When they understood the importance of organic matter in improving the soil water holding capacity, they were motivated to look for the sources of organic matter. Difficulty in sourcing biomass created an interesting discussion – how long can they be dependent on common property resources and the adjacent forest areas for their needs, and what will happen when it is exhausted or restrictions are imposed on collecting from the forest.

They worked out a solution. They planned to raise biomass on their own land. During the discussion on the biomass matrix, they identified more than 15 multipurpose tree species available in the village. Their perception towards these trees changed after the exercise and the women collected the seeds from the most preferred four species. They raised 2000 seedlings in the FFS session, to be planted on their farms. They did not stop at this point. They all have vermicompost production units in their households now, to recycle the plant biomass produced by them.

Simple learning exercises in the FFS sessions motivated these women, changed their perceptions and moved them towards positive action. This learning and action is also spreading to other SHG members, in their villages.



Participants testing water holding capacity of soil in a practice FFS village

## Stakeholders review the process

AME Foundation, MYRADA and the team of facilitators met on 11 July 2006, to review the programme and identify areas for improvement. One of the decisions was that the CMRC managers will be part of the FFS planning and review sessions. The stakeholders decided to meet periodically to enrich the process of MToF.