



Photo: Author

Farmers cultivate SRI paddy using less water

# Crop planning

## *A tool for climate resilient food system*

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*Crop production is highly location specific and depends on a number of factors like climate, natural resources, access to inputs, knowledge etc. Farm level crop planning goes a long way in building climate resilient food systems. By planning their crop production, farmers in Maharashtra are able to reap a good harvest meeting their food and nutritional needs.*

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**G**aneshwadi hamlet of Ghoti village in Ahmednagar district in Maharashtra consists of 15 households. Farmers here are poor, having small and marginal land holdings. Having access to river water, these farmers have been growing paddy in *kharif* and wheat in *rabi*. Few households also cultivate groundnut in summer. In the last few years, farmers have been experiencing late onset of monsoon, decrease in temperature in spring, frost and unseasonal rainfall, resulting in crop loss. This has further affected the food availability. Also, dependence on just 2-3 crops has reduced the diversity in food and has influenced the nutrition levels of households.

Through intercropping, farmers got good yield and greater variety of food to consume.

In this context, Watershed Organisation Trust (WOTR) started working in this hamlet to help people enhance their food and nutritional security, in the changing climatic conditions. The objective was to help farmers in crop planning and also promote crop diversity (cereals, pulses, vegetables), thus enhancing nutritional security of the households.

### Learning to plan

At hamlet level, awareness meetings were conducted and the members were given a clear idea about the whole process. Awareness sessions on various themes, like agriculture, nutrition, water budgeting, organic farming, composting and SRI techniques were conducted with the community. Farmers, with the help of agriculture specialist, prepared crop plans for *Kharif* and *Rabi* seasons. This was based on the previous year's agriculture data and local weather situation for upcoming agriculture season. The aim was to promote crop diversity.

Communities were made aware of the nutritional importance of each crop. The discussion also took place on crops suitable for each household, providing information on their nutritional values. GIS and remote sensing tool was used

for crop mapping, planning and monitoring to trace the specific plot. Plot wise information was shared with every farmer. Household wise crop and plot maps were prepared. The plot wise crop plan map was then converted into IEC material by adding the nutritional values of each of the previously cultivated crops and for the crops suggested for each season.

The concept of water budgeting was taught to the community in detail. Availability of water in *kharif* season and irrigation methods that could be used during *Rabi* and summer seasons were planned.

### Some results

Traditionally the selected hamlet had been practicing mono cropping cultivation with rice as main crop followed by some vegetables and wheat. After initiating the process of crop planning, a lot of crop diversity was observed on the farms like rice, finger millet, cow pea, groundnut, potato, Indian bean, tomato, wheat, okra etc. Around 83% of the cropped area of the village was occupied by rice followed by groundnut, beans and tomato. On around 31% of the plots, finger millet was raised, on 34% of the plots soybean,

*A village meeting in progress*



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Many farmers cultivated traditional paddy varieties using SRI method

**Table 1: The list of foods in farmers diet**

Food Group	Food item
Cereals Grains and Products	Sorghum, Pearl Millet, Wheat, Rice, Finger Millet
Pulses and Legumes	Moth Bean, Green Gram, Cow Pea, Pigeon Pea
Milk and Meat Products	Cow Milk and Goat Milk
Fruits and Vegetables	Custard Apple, Pomegranate, Banana
Other Vegetables	Brinjal, Pumpkin, Beans
Oil Seeds	Groundnut

vegetables and beans were cultivated and in 35% of the plots, varieties of crops were raised. Crop diversity depended on the topography, soil type, food habits and nutritional needs.

Most of the farmers adopted inter cropping method. Around 50% of the farmers followed intercropping of marigold with tomato and different vegetables. This resulted in increase in the production of tomato by 30%. Some of the farmers intercropped Indian beans with cluster beans. Through intercropping method farmers got good yield and greater variety of foods to consume.

Demonstrations were conducted for SRI method and around 70% of the farmers adopted SRI method with good harvest. Interestingly, most of the farmers used traditional varieties of rice and used farm yard manure as well.

### Enhanced food diversity

After harvesting crops of one season, a diet recall was conducted. It was evident that vegetables, cereals, pulses and fruits formed a part of their diet and farmers started consuming various types of food, more frequently. (See Table 1). With food diversity, the nutritional levels too improved.

### Conclusion

The change in cropping system from monocropping to mixed cropping was possible owing to community participation and ownership of their actions. While WOTR helped farmers plan cropping systems based on prevailing climate conditions, it was the people's interest and trust which succeeded in bringing about this change. "We never did farming with this sort of planning", said one of the farmers in the village.

Having experienced the benefits of crop planning and enhanced crop diversity, farmers are convinced that crop planning is an important tool for building climate resilient food systems. With this conviction, they continue to work in the same way, planning and choosing crop varieties, based on the climate conditions.

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