Enhancing farmers resilience to drought in Marathwada

The impact of climate change in terms of drought and increasing costs of agriculture inputs have resulted in frustrations and even in suicides amongst farmers in the Marathwada Region. From 1995 onwards Maharashtra has experienced thousand of suicides every year. In year 2016, 1130 farmers ended their lives with highest of 300 from Beed District. In initial four months of 2016 again it topped with 75 suicides. The data is not available for rest of the months. The Expert Committees suggests that there are over 3.6 million farming families are living in distress conditions and need to be supported for their sustainable agriculture to avoid mishap. Marathwada and parts of Vidarbha are particularly vulnerable to climate change challenges, which include increase in the incidence of extreme weather events. The situation for farmers and landless labours has further aggravated from 2012 as farmers faced with unprecedented agricultural crisis. What started as drought in 2012 went on in the form of violent rains at places in 2013, hailstorms of February-March 2014, scanty monsoon in 2014 and unseasonal rains at places in November 2014, unseasonal rains in February and March 2015, affecting millions of farmers. This obviously reduced the agricultural production and created domino effect on the socio-economic situation of vulnerable farmers. Drought has been most distructive among all these disasters and need to be tackled urgently.

Soil water conservation measures are one of the important solutions to these problems. Some of the line and area treatments have been proven to be effective in drought mitigation. Off course, the impact of these activities is majorly dependent on no of rainy days vs. Amount of rain during the monsoon. Considering the topography of the area limited range of different types of interventions can be proposed.

In order to find the solutions to the problems, following soil and water conservation measures are proposed:

1. **Compartmental bunding:** In Compartmental bunding the agricultural fields are divided into small compartments with pre determined size to retain the rain water where it falls and arrest soil erosion. The size of the bunds depends upon slope of the land. Compartmental bunds provide more opportunity time for water to infiltrate into the soil and help in conserving soil moisture. Promotional incentive / operational expenses for the excavation machines will be provided to the farmers.
2. **Desiltation, straightening and widening of streams:** Shirpur rainwater harvesting Model has been developed by Shri Khanapurkar Sr. Geologist in Shirpur block of Dhule district. This is a tested and successful technology of boosting ground water tables in a sustainable manner. It includes The deepening and straightening of the stream is considered as one of the effective method of rain water conservation. The desiltation of the streams make the streams to conserve more water and deepening opens up the porus layer or rock which promotes water percolation and ground water recharge. The farmers can also use this desilted soil to make their soils fertile. Operational expenses for the excavation machines will be provided to the farmers.
3. **Situ Soil Moisture conservation measures:** In Situ Soil Moisture conservation measures can be applied to agricultural, horticultural and agro forestry crops / plants. This may save these plants from extended dry spells and droughts to certain limit. The measures include levelled land, sowing and tillage perpendicular to slope, dead furrow, live bunds, good intercultural operations, proper weed management, use of organic material, mulching, good cropping systems, compartmental bunding, micro catchments etc. These are simple techniques like changing direction, place or time, which do not require much of technical skills and less costly are sufficient to extend soil moisture availability approximately 25% more time than usual. Promotional incentives will be provided to the farmers.
4. **Promotion of Micro Irrigation:** While conserving the water, it is also necessary to reduce the use of water for irrigation. So, micro irrigation like drip and sprinkler can bring big change in use of water. Micro irrigation is considered as a very economic and efficient proposition for the purpose of water irrigation. The micro irrigation system like drip and sprinkler can save upto 30-40 per cent of water and around 20 per cent fertilizer and also enhances the yield by almost 20 per cent. Promotional incentives and facilitation to government schemes will be provided to the farmers.

Saraswati Sevabhavi Sanstha, Bhatwadgaon (SSSB) was established in 1998, especially for socio-economic upliftment of rural deprived families from Beed district. I am among the group of young and enthusiastic youths desired to bring positive change in livelihood of rural poor, formed the organization and started developmental activities in Majalgaon block of the district. We trust in self-reliance and pertain efforts to facilitating the community for sustainable livelihood. We are committed to improved quality of life of the rural poor and with a broad vision of social justice and equality. We are mainly engaged in micro-finance activities for women empowerment, agriculture for economic development, natural resource management for eco-restoration, sanitation and personal hygiene for good community health and human resource development for good governance and civic society.