

Cultivation of climate smart millets

MG Chandrakanth, Director, ISEC, Bangalore

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Description

Sustainable cultivation of nutri-millets by small and marginal farmers in semi arid regions of India, with value addition in the wake of climate change assures income, employment, savings, investment, gender and natural resource dependence and coping mechanisms in the wake of climate change.

Millets serve the dual purpose of meeting food, nutrition as well as fodder security. The socio-economic, cultural aspects of cultivation of climate smart small millets such as fox tail millet, kodo millet, proso millet, little millet, pearl millet, finger millet and Barn yard millet, is that they not only require low water but also have nutrition levels much higher than rice or wheat.

Hence their impact on household food, nutrition, health, livelihood and economic security including economics of cultivation of millets for different classes and locations of farmers with environmental sustainability are crucial.

According to IWMI “.....currently, over 80% of irrigated agriculture in India is supported by groundwater, resulting in severe overexploitation of this resource”. As green revolution was largely for wheat and rice which are water intensive, its growth is unsustainable unless India switches towards small millets.

Small millets are drought tolerant and thrive in harsh agroclimatic conditions. Hence they indirectly conserve the precious and expensive groundwater resource. A majority of the farm operations are carried out by women in these areas. Cultivation of millets not only is low external input demanding, but also reduces physical stress, and also complements nutritional needs of the farm family. However, the post harvest processing of millets is in infancy. With no policy support, millets are further relegated.

Thus, applied field and lab oriented research on nutrimillets would address the key issues of natural resource conservation, food, nutritional, livelihood and economic security, gender balance in the wake of climate change. The millets such as Little, Proso, Foxtail, Kodo are the most nutritious but their popularity faded resulting in negative growth in area, production and consumption, as they cannot compete with other remunerative crops due to poor market, policy support and consumer awareness.

The extension efforts towards their cultivation and consumption are relegated. Advent of irrigation in the villages gradually replaced the area under millets with rice, maize and commercial crops. Due to low market price their cultivation is uneconomical, but there is market failure as the market fails to capture the nutritive value of millets.

Millet cooking is thus popular in dry lands, however the recipes may have undergone changes in irrigated areas, peri urban and urban areas. Nowadays the demand for millets is increasing especially due to increasing diabetic population and hence may become popular due to rise in demand.

Objectives and beneficiaries

1. To expand cultivation of climate smart millets among small and marginal farmers to strengthen food, nutrition, health and fodder security.
2. To utilize the opportunities for improving value addition in small millets to meet the increasing market demand
3. To provide income and employment security for farm women through small millets
4. To offer sustainable climate smart solutions for crop, soil and water management through cultivation of small millets

Strong points of the practice

1. Provides the best agronomic climate smart practices in terms of conservation of scarce water resources by way of improved water use efficiency leading to food, nutrition, fodder and health security
2. In semi arid tropics water is economically and physically scarce. Small millets offer the best economic solution to accommodate food, fodder, nutrition and health security for the benefit of small and marginal farmers
3. The existing processing facilities can be used to procure and process small millets towards primary value addition

Expected results and benefits for climate change adaptation and mitigation

1. Improved household food, fodder, nutrition and health security through cultivation of climate smart millets
2. Improved water use efficiency in economically and physically scarce water conditions
3. Climate change resulting in increased temperature over years is wiping out water and groundwater and hence millets are the only solution in such areas which are increasing in India

Replicability potential of the practice

The small millets fox tail, kodo, proso, barn yard, little, pearl and finger millets are replicable in all semi arid and arid regions of the world which are fraught with acute water and groundwater scarcity.

There is a need to unlearn the current practice of heavy focus on rice-wheat ecosystem in order to accommodate these crops which were previously grown in areas currently occupied by superior cereals.