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National Food Security Act: Implication to Rainfed Agriculture

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Global warming and climate change is also an impending threat to agricultural production in India and to rainfed regions in particular. It has been projected that unless we adapt, there is probability of 10-40% loss in crop production in India by 2080-2100 due to global warming as reported by IPCC and other Indian studies. A minimum 16 million tonnes of food grains would be required to buffer frequently occurring fluctuations in production due to increasing frequency and intensity of extreme weather/disastrous events of global warming. Thus, government has to take steps by considering the influence of climate change on agricultural production while implementing the food security bill.

Introduction

Food and nutritional security for dignified life by way of ensuring access to adequate quantity of quality food at the affordable price to the poorest of the poor section of society. The National Food Security Bill, 2013 aims to provide five kg of food grains per month to each person belonging to priority household at subsidized price of Rs 3 per kg of rice, Rs. 2 per kg of wheat and Rs 1 per kg of coarse cereals for the period of 3 years from the date of commencement of act. It intends to cover up to 75 per cent of rural population and up to 50% of urban population which is almost two-third of total population of the country. According to Census 2011, the urban Indian population is 377 million and the rural, 743 million. Accordingly the act targets 189 million urban populations and 558 million rural population. According to *State of Agriculture Report*, 2012-13, there are about 138 million farm households which translates to about 690 million people considering family size of five. Of these 138 million households, 117 million are small and marginal farmers owning less than 2 ha of land, and 125 million people are rural landless tenants and totally landless labour. Rain-fed agriculture plays an important role in food and nutritional security and economic growth of country by supporting nearly 40% of India's population with an area of about 78 M ha (55.07%) and contributing 40% of total food grain production. Much of the acreage under coarse cereals (85%), pulses (83%) and oilseeds (70%), substantial area under rice (42%) and nearly 65% of cotton area is rainfed (Fig. 1). The rainfed agriculture contributes nearly 39 % of rice and 90 % of coarse cereals in terms of productions. However, contribution of rainfed area for wheat is limited.

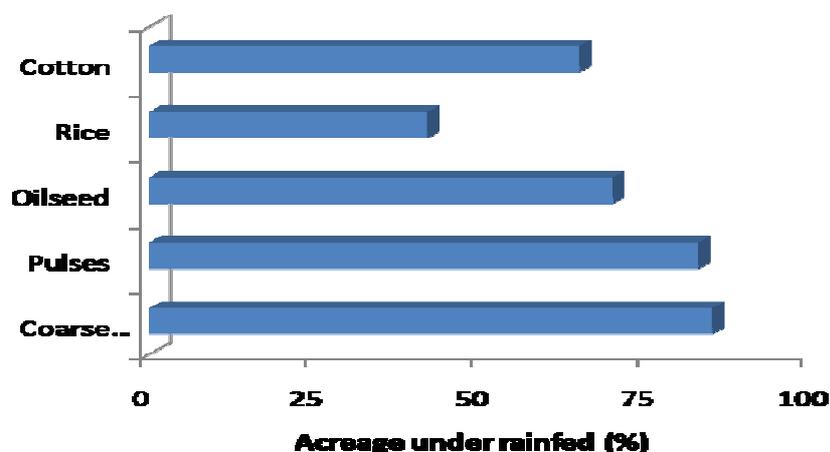


Figure 1: Percent area of various crops under rainfed region of India

According to Gulati *et al.* (2012), the scheme would require about 75 MT of food grains for fulfilling the entitlements. As per the average procurement-production ratio of 35%, the current production levels of around 190 million tonnes of rice and wheat would yield about 67 MT of food grain to be made available to the scheme. Thus, scheme requires additional procurement of 8 MT which can be fulfilled by additional production of at least 25 MT with procurement-production ratio about 30 per cent. Presently, total production of coarse cereals from rainfed region is around 40 MT. Procurement of these eight million tonnes from rainfed crops (coarse cereals) will help rainfed farmers in terms of market support which has hitherto been missing largely. Rainfed regions have considerable potential to increase productivity of food grains. Food grain yields vary from 1 to 2 t ha⁻¹ in the rain-fed regions compared to attainable yields of more than 4 t ha⁻¹. The large yield gap suggests that there is much to gain by improving productivity in rain-fed agriculture³. Irrigated areas have largely benefited from green revolution and now showing stagnation in yields. Further use of farm inputs viz., fertilizer, irrigation and chemical pesticides in irrigated areas will aggravate the situation of soil degradation, environmental pollution and health hazard leading to unsustainable growth. On the other hand, rainfed regions provide an opportunity for expanding production by improved use of crop varieties, inputs and crop management (IFPRI, 1999). Around 27.5 M ha of rainfed area was found to have good potential for runoff harvesting and some portion of the runoff can be used for supplemental irrigation for depth of 10 cm. 20.65 M ha area during sub-normal rainfall years and 25.8 M ha area during normal years (Sharma *et al.*, 2010).

Table 1: Additional production estimated with proper management of rain water in India

Crops	Traditional Production (MT)	Additional production (MT) with supplemental irrigation	
		Normal rains	Sub-normal rains
Rice	7.612	3.549	3.776
Coarse cereals	8.30	4.410	3.415
Total	15.912	7.959	7.191

Source: Sharma *et al.*, 2010, CRIDA

It has been estimated that the water used in supplemental irrigation had the highest marginal productivity and rainfed production might be increased considerably over this area by applying single supplemental irrigation at crucial stage from harvested runoff and with some improvements in agricultural practices. The estimated additional production projections for rice and coarse cereals under improved agricultural practices during normal monsoon and deficient rainfall season from 27.5 M ha rainfed area is about 7-8 MT (Table 1).

Government policies and future strategy for achieving food security

A pilot exercises was conducted for promoting millets through PDS and integrating into the farming System (WASSAN report, 2008-2011). From study it was observed that reduction of sale price from 75% of market price to 50% has increased the millet off take. Nearly about 30% of households, especially the labour families felt this has helped them to get the grain on a regular basis close to their door steps. Millets production was doubled due to assured market support for supplying to PDS. Many more pilot exercises and strategies are to be pursued across the country so that the relevant policy implication can be generated and built into programme. On the other hand, Governments price and food policies are dominated by high value cereal crops like rice and wheat. Rainfed crops are not enjoying propitious condition in term of input subsidies. Similarly on the demand and price policy side, they are not enjoying an effective support in terms of minimum support price, procurement and public distribution system. National food security act may help in correcting the bias in procurement and price support to some extent and hopefully trigger the investments that are favourable to rainfed food grains to fulfill the objective of the scheme. A visible impact may be seen in cropping pattern may change in favour of rainfed crops specially coarse cereals because of the improved procurement demand.

Conclusion

National food security bill may create demand for rainfed crops like coarse cereals in the market which may lead to enhancing area and yield of these crops. It may benefit rainfed areas dominated by small and marginal farmers. It may lead to reduction in rural poverty and improvement in the standard of living of people. On the other hand reduce the ill effect of natural resource degradation and more importantly soil and water resources since rainfed crops utilizes less resources and adaptive to harsher environment and hence may help mitigate adverse impact of changing climate.

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