

NEW DIMENSIONS TO AN AGRARIAN IN INDIAN CONTEXT

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Abstract: Mostly, the agriculture bodies concentrate on increasing the yield gain and neglect the depleting land available for farming. The paper suggests certain aspects to increase the yield and also to increase the cultivable land across INDIA. The paper gives a direction to inflation independent spheres of life.

Keywords: Agriculture, food security, technology

1. Introduction: With rising inflation in different spheres of life, a common man's affordability towards his basic needs, education and lifestyle are diminishing everyday inspite of growing purchasing power. The paper focuses on a lifestyle independent of currency inflation atleast in some spheres of life viz farming. The national food security act is yet to cover a population of 8134.92 lakhs across India[1]. Among these are the people under below poverty line. The paper details out certain measures to increase the crop lands.

2. Literature survey: Godfray et al studied the parameters of food security viz yield gap, production limits, reducing waste, changing diets, expanding aquaculture and deduced the need for technology interventions in agriculture[2]. Andersen et al discussed food security and suggested that it can be a useful measure of household and individual welfare, particularly if combined with estimates of household food acquisition and allocation behavior. If nutritional security is the goal, estimates of access to food should be combined with estimates of access to clean water and good sanitation. Anthropometric measures are likely to be more appropriate than food security estimates to target policies and programs to improved child nutrition[3]. Funk et al presented several emerging threats to global and regional food security, including declining yield gains that are failing to keep up with population increases, and warming in the tropical Indian Ocean and its impact on rainfall. If yields continue to grow more slowly than per capita harvested area, parts of Africa, Asia and Central and Southern America will experience substantial declines in per capita cereal production. Global per capita cereal production will decline by 14% between 2008 and 2030.

Drought, caused by anthropogenic warming in the Indian and Pacific Oceans, may also reduce 21st century food availability in some countries by disrupting moisture transports and bring down dry air over crop growing areas[4]. Lal et al explained the technical potential of C (carbon) sequestration in world soils for mitigating climate change and describes its positive impacts on agronomic productivity and global food security through the improvement of soil quality. The technical potential of C sequestration in soils of terrestrial ecosystems and restoration of peat soils is 50 ppm draw down of atmospheric CO₂ by the end of the 21st century by increasing the soil C pool at a rate of 1 Mg/ha/yr. Depending upon climate and other variables, this could increase cereal and food legume production in developing countries by 32 million Mg/yr and roots and tubers by 9 million Mg/yr[5]. Zezza et al compared nationally representative household survey data for 15 developing countries to analyze the importance of urban agriculture for the urban poor and food insecure. On the one hand, the potential for urban agriculture to play a substantial role in urban poverty and food insecurity reduction should not be over emphasised, as its share in income and overall agricultural production is often quite limited. On the other hand, though, its role should also not be too easily dismissed, particularly in much of Africa and in all those countries in which agriculture provides a substantial share of income for the urban poor, and for those groups of households to which it constitutes an important source of livelihoods [6]. Maxwell et al constructed a series of alternative food security indicators based on the frequency and severity of consumption-related coping strategies. These alternative indicators are then compared with more standard measures, including a consumption benchmark, a poverty benchmark and a nutritional benchmark. The coping strategy indicators are best at ruling out cases—that is, minimizing the risk of classifying a food-insecure household as food-secure. They also help to identify sources of vulnerability and the trade-offs made with other basic needs to acquire sufficient[7].

3. Methodology & Discussion: In the decade 1999-2000, the contribution of agriculture to GDP is 25.50 percent[2].

The agriculture land has been steadily declining even though the yield per hectare has increased over years. Table 1 lists out a few countries with high percentage of farming lands. When compared to these, India ranks low in the countries with average percentage of farming lands.

Table 1: farm land percentage[8]

Country	Agriculture land percentage
Australia	65
France	60.4
USA	46.5
India	52.6
Pakistan	30.1
Burma	28.5
Japan	16.8

Table 2: land revenues[8]

India revenue census	Values(%)
Cultivated land in India	52.6
Forest land	21.5
Cultivable waste land	5.2
Barren and uncultivable land	9.6
Employment from agriculture	70

Percapita availability of agriculture land in india is 0.60ha while in Canada its 46.19ha[8]. Appropriate measures are to be taken to increase the cultivable land. However, the operational holdings in agriculture showed in table 3 could be used to deduce that the finances given to marginal farmers(<1ha) could seldom be utilized to make a benefit out of it. Agriculture land must be uniformly distributed among farmers and agriculture labour as a matter of wealth distribution and equality.

Table 3: operational holdings [8]

Operational holding size(hectares)	Percent of total area in agriculture
Less than 1	9
1 to 2	12
2 to 4	18.4
4 to 10	29.7
10 and above	30.9
Total	100 (162.6 Mha)

Agriculture in india is rainfall dependent. Major irrigation projects have bought much land under cultivation but much needs to be done in the form of newer technologies like underground canal system instead of surface canals. Table 4 lists out some ways to improve the percentage of crop area and also to bring the rest of the Indians into national food security act.

Table 4: aspects to improve cultivable land and yield

Aspect	Description
Cultural aspect	the elderly are asked to fast weekly once. This is an indirect way of giving food to the deprived.
Reverse Urbanisation	Increasing the land under agriculture. Instead of urban areas expanding into the rural and sub-urban areas, let the govt offices moving to rural areas and sub-urban areas have an intermediate boundary of agriculture land in between. This reduces the cost of food transport and also gives a natural solution to air pollution
Apartment culture	Let the apartment culture grow in rural areas. Instead of horizontal expansion, let people build houses in floors over each other and utilize the land for agriculture. However, animals and tractors could be parked in the ground floor. The agriculture produce could be stored on initial floors. Let the lift maintenance systems be large enough to handle the produce.
Technology interventions	solar engineering to lighten the houses of farmers and also to be utilized in their crop lands. Modern practices of agriculture must be adapted. This requires an exposure to current day literature. The village administration should maintain a library of farming practices in the regional language. This encourages the farmer to know the latest developments in his trade. Instead of crop burning, the village administration should prefer biomass plants. Surface canals are to made underground so as to utilize the land for agriculture and also to increase the ground water levels.
Industrialization and real estate	Usually, industrialization and real estate curbs fertile agriculture lands. However, this practice must be replaced with industries utilizing barren lands and desert lands for their industrial purposes. Water and electricity should be managed by the industries themselves. Real estate must grow vertically upto 100 floors instead of horizontal expansion.

Birth rate	Other way around is to control birth rate. Irrespective of economic status of a family, a newly wedded couple should give birth to only one child irrespective of gender.
Imports	Importing food grains and pulses from countries of less currency value when compared to indian national rupee

4. Conclusion: With all these measures, food inflation could be controlled some extent. Inflation controls the lives of Indians many spheres of life like real estate, education, lifestyle, food habits etc. Atleast, food inflation must be controlled in the decade to come thus making the basic needs sustainable to every citizen across the country. The development and life independent of currency inflation should happen at the grass root levels of the country and a farmer is the first person to start with.

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