International Journal of Humanities and Social Science Invention
ISSN (Online): 2319 – 7722, ISSN (Print): 2319 – 7714
www.ijhssi.org Volume 2 Issue 8 ǁ August. 2013ǁ PP.07-11

Changing Cropping Pattern: A Boon or a Bane to Food Security?

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ABSTRACT: *Agriculture is one of the core sectors in Indian economy. Large number of the population depends on agriculture for food, fodder and livelihood. Agriculture provides the food to the whole population of the country, but, in these days people are losing interest in agriculture sector for many reasons and depend on other sectors for livelihood with changing their cropping pattern which is a permit to work in other sector of the economy, this trend directly has adverse effect on countries food production and food security*.

KEYWORD: *Accessibility, Food Security, Food Crisis, Poverty*

I. INTRODUCTION

Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO, 1996). It has four dimensions food availability, access to food, stability of supply and access, and safe and healthy food utilization.

With regard to food availability, present global food supplies are more than adequate to provide everyone with all the calories he or she needs for an active and healthy life, if the food were equally distributed. Per capita daily calorie availability currently exceeds 2,100 in all global regions, though barely so in Sub-Saharan Africa. However, this abundance of food is not, in fact, equally distributed, so hundreds of millions of people in developing countries actually consume less than their minimum requirements. According to the latest data, over 820 million people in developing countries are undernourished, i.e., their diets are calorie-deficient. More than 60 percent of these food insecure people live in South Asia and Sub-Saharan Africa, which form hunger's centre of gravity. This can be viewed as an infringement on the human right to adequate food, which implies availability and accessibility of food in sufficient quantity for all (UNCESCR, 1999)

While India has seen impressive economic growth in recent years, the country still struggles with widespread poverty and hunger. India's poor population amounts to more than 300 million people, with almost 30 percent of India's rural population living in poverty. According to official government of India estimates, poverty declined from 37.2% in 2004-05 to 29.8% in 2009-10. Rural poverty declined by 8 percentage points from 41.8% to 33.8% and urban poverty by 4.8 percentage points from 25.7% to 20.9% over the same period (World Bank 2012).

India is home to 25 percent of the world's hungry population. An estimated 43 per cent of children under the age of five years are malnourished (WFP 2012). India remains an important global agricultural player, despite the fact that agriculture's share in the country's economy is declining. It has the world's largest area under cultivation for wheat, rice, and cotton, and is the world's largest producer of milk, pulses, and spices (World Bank 2012). Nearly three-quarters of India's households are dependent on rural incomes. Agricultural productivity in the country's semi-arid tropical region is impeded by water shortages and recurrent drought, while environmental degradation and vulnerability to weather-related disasters pose challenges to the country as a whole.

Poor populations also face lack of access to productive assets, financial resources, education, health care, and basic social services. The government has recently begun to focus on microenterprise development as a way to address these challenges, as well as initiatives to bring basic services to the rural poor. With the country's population and economy continuing to grow, huge demands will be placed on critical infrastructure in the coming years. It is estimated that US$1 trillion will be needed to meet India's infrastructure needs in the next five years (World Bank 2012).

II. REVIEW OF LITERATURE

Ramesh Chand (2008) this paper discusses the various factors that have been identified as responsible for the current global crisis in the availability of food and for the rise in prices of cereals. It argues that the crisis is different from the ones in the 1960s and 1970s in that there is now likely to be a permanent upward shift in

real prices. It is important that developing countries place renewed emphasis on self-sufficiency to ensure food security, since they are unlikely to be able to afford expensive food import.

R. KalpanaSastry (2011) says that A framework for assessment of the potential of nanotechnology for enhancing food security in India. Agricultural productivity, soil health, water security, and food quality in storage and distribution are identified as the primary determinants of food security that can be impacted by developments in nanotechnology. The framework is developed in two stages: (i) mapping nanotechnology to agri-food thematic areas across the agricultural value chain and (ii) from the thematic areas to the food security determinants. The model allows identification and prioritization of potential areas for nanotechnology applications to enhance food security. Comparisons of this technology with green revolution technologies and agricultural biotechnology indicate a possibility of greater and faster impact on all components of the agri-value chain with concurrent social, ethical, legal and environmental implications. There is a need for investments in capacity building and development of an agri-nanotechnology infrastructure in India, and for ex ante assessment of its implications for society.

Manoj Panda (2008) in his paper attempts to assess the impact of trade liberalization on growth, poverty, and food security in India with the help of a national level computable general equilibrium (CGE) model. It shows that GDP growth and income poverty reduction that might occur following trade liberalization need not necessarily result in an improvement in the food security nutritional status of the poor. Evidence from simulations of (partial) trade reforms reflecting a possible Doha-like scenario show that the bottom 30% of the population in both rural and urban areas suffers a decline in calorie and protein intake, in contrast to the rest of the population, even as all households increase their intake of fats. Thus, the outcome on food security status with regard to individual nutrients depends crucially on the movements in the relative prices of different commodities along with the change in income levels. These results show that trade policy analysis should consider indicators of food security in addition to overall growth and poverty traditionally considered in such studies.

III. FOOD SECURITY

Food security means availability, accessibility and affordability of food to all people at all times. The poor households are more vulnerable to food insecurity. whenever there is a problem of production or distribution of food crops. Food security depends on the Public Distribution System (PDS), Government vigilance and action at times when this security is threatened. Food security has following dimensions

a) Availability of food means food production within the country, food imports and the previous year's stock stored in government granaries.
b) Accessibility means food is within reach of every person.
c) Affordability implies that an individual has enough money to buy sufficient safe and nutritious food to meet one's dietary needs.

IV. OBJECTIVE OF THE STUDY

1) To analyze the impact of changing cropping pattern on food security.

V. METHODOLOGY

This paper is based on both secondary and primary data. Primary data is collected from 100 households with scheduled questionnaire in a village closely located near Hassan district. SPSS package is used for data analysis. Paired T test method was used to analyze wage differences before and after labourers shift to urban area. Excel is used for tabulation and construction of Chart. Garret's ranking technique is used to rank the reasons for urbanization effect on farmers and changing cropping pattern.

It has been observed that the most productive manual labour of the rural population that is youth are getting attracted towards urban life. This has made a big negative impact on the agricultural productivity. The so called educated rural youth find one or the other job in the informal sectors of urban area. This has made them to migrate to cities neglecting their agricultural activities. Though they are earning better and feel that their standard of living has improved; because of this, they are stopping the production of food crops and shifting over to commercial crops. This will become a threat to food security in the long run

Table 1 Age

Age	Frequency	Percentage
21-30	58	58.0
31-40	29	29.0
41-50	13	13.0
TOTAL	100	100

In the above table collected data has been classified based on age group of the farmers who are seeking jobs in other sectors of the urban area. Here we find that 58% of them are belonging to 21-30 age group and 29%of the labourers belong to 31-40 age group. It is clearly shows that younger age people are more mobile compared to upper age groups. 41-50 ages consists only 13 %of the labourers and more than 50 age group people do not want to move to urban area.

Table 2 **Education levels of the villagers**

Class	Frequency	Percentage
Illiterate	15	15.0
Higher primary	9	9.0
High school	42	42.0
P.U.C	9	9.0
Graduation	10	10.0
Job oriented training	13	13.0
Master degree	2	2.0
Total	100	100

Above table refers the educational status of the farmers. It shows 42% of them are having high school level education. This is the highest percentage of education attained by the farmers. Illiterates are second highest constituting 15 percentages. There are very few post graduates and graduates this statistics shows that high school level is sufficient enough to fetch a job for them in urban or semi urban areas. With this education normally they prefer urban life to rural.

Table 3 **Gender**

Gender	Frequency	Percentage
Male	88	88.0
Female	12	12.0
Total	100	100

This table shows the gender wise classification of the surveyed population. according to the above table, men constitute highest share of 88 % in total job seekers and female are lowest in 12 %job seekers .Here one of the interesting thing is when the males are seeking jobs in other sectors of the economy for earning more for livelihood, women are shouldering the responsibility of the family and agriculture activities in male members absence.

Due to the attraction towards urban life majority of the rural semi educated youth particularly male are moving towards urban areas. But in some areas they are not completely leaving their agricultural connection as the elders want them to be in the villages to do agriculture instead they are shifting to other crops which demand less of their time and effort but brings more income. This has made a big change in the cropping pattern in many places where previously foods crops were the main production crops. Now they are concentrating more on commercial crops.

Table 4 Income difference after changing Cropping Pattern

Paired	Mean	std deviation	std error mean	95%confidance interval		T	df	Sig
				Lower	Upper			
Before and after crop	-1364.000	875.540	87.554	-1537.726	-1190.274	-15.579	99	.000

Above Table 5 refers to the income difference of the before and after changing the cropping pattern of the farmers moving to the other sectors of the urban area with changing the cropping pattern. The table value is greater than calculated value (1.660>-15.579).Therefore the null hypothesis is rejected. Rejecting null hypothesis shows that the test is statically significant. There is a significant difference between income level of

the job seekers before and after changing the cropping pattern. The income has actually increased. This type of changing the cropping pattern has no doubt helped to improve the standard of living of the job seekers. But this type of changing cropping pattern has negative impact on food crop productivity.

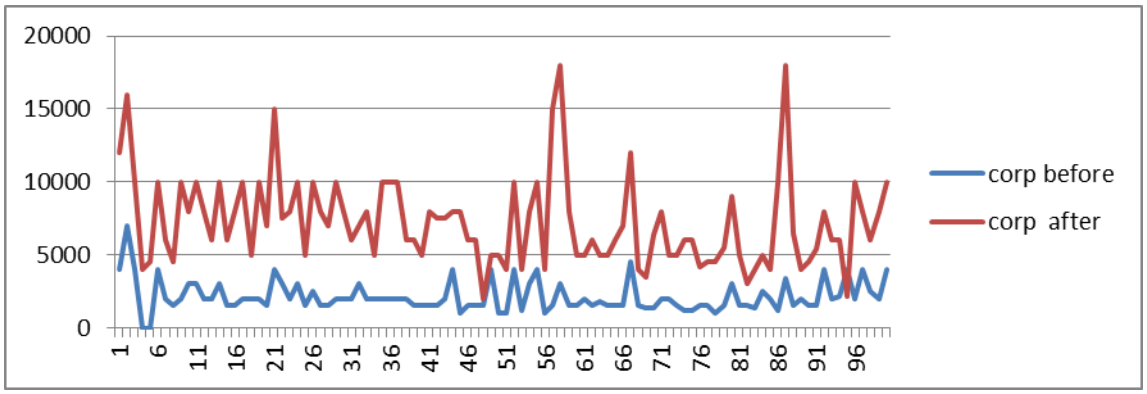

Figure 1

Figure-1 also clearly shows the difference between income of the before and after changing cropping pattern. Not only that the present day rural youth are considering cropping as one of the less benefitting activities. They have their own reasons for neglecting agriculture and moving towards urban jobs. Due to these reasons it is very visible that now a days the food production is not so attractive to the productive youth population and this may affect the food security of India in a long way to come.

Table 5 Reasons For Not Prefering Agriculture

Indicators	Scores	Rank
Loss in agriculture	5393	II
Unstable income	6487	I
Environmental reasons	5230	III
Over dependency	3115	V
Higher input cost	4367	IV
Labour problem	3021	VI

Garrett's ranking technique is used for ranking the reasons for leaving agriculture and working in urban area; first and foremost reason for leaving the agriculture is unstable income in agriculture. Second most influencing reason is loss in agriculture, environmental reasons like drought, heavy rain fall, and insecticides problems are the third reasons to influence. Higher input cost got fourth rank in the Garrett's ranking table like hybrid seeds, fertilizer, and technology. Many of the job seekers are marginal and small farmers hence one or two members of the family to other sectors for employment and higher wages, over dependency is the fifth reason for moving to urban area. Interesting observation here is all are change their cropping pattern and show their interest in growing commercial crops instead of food grain which they grown previous for livelihood. All are interested to earn more money than food grains.

Table 6 Reasons for Job Seeking In Urban Area

Indicators	Scores	Rank
Good demand for labour /irregular work in village	4694	III
Stable income	6206	I
Improvement of infrastructure	5734	II
Weekly/monthly income	4200	VI
Higher income	3845	V

Above Garrett's ranking table is also used to rank the reason for moving to urban area in search of jobs. Unstable or seasonal income in agriculture sector is most influencing reason for job seeking in urban area, improvement in infrastructure like more bus facility, good roads, telephone and mobile facilities are the second in the ranking table , speedy urbanization is creating demand for huge amount of labourers and absorb more labourers from rural areas , most of the workers are working in informal sector they get weekly or monthly income, this type of income helps in repayment of loan and to make saving through chits ,SHG's and fixed deposit with bank and post office fixed bank account , it is the fourth reason in ranking table, lastly higher

wages attract the labourers to migrate and work in other area where they are get more wages and continuous employment.

VI. FINDINGS AND CONCLUSION

In this paper we find that most of the agricultural labourers are showing less interest in producing food crops which demands their complete attention and are changing their cropping pattern to commercial crops so that they can work both in urban area and on land to a limited extent. All marginal farmers are slowly depending on other sector for higher wages without fully neglecting the agriculture. Instead of that they are changing the cropping pattern and continued their agriculture activity with other family members and relative's .They are changing cropping from food crops to commercial crops. This has posed a threat to the overall production of food crops. If every farmer thinks that changing the food crops to commercial crop will bring more income, then there will be no one to produce needed amount of food crops in the country. Therefore there is an utter need to encourage the farmers to continue with the food crop production so that there will not be any threat to food security in the future

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