

# MANAGEMENT OF FOODS SCARCITY IN INDIA

\*Sanjay Sachdeva  
\*\*Pooja Pathak

## Abstract

*The definition of food security as defined by FAO comprises four key dimensions: availability, stability; access and utilization. Studies indicate that the impact of climate change are significant with a projected figure of 100 million and above additional people at risk of hunger by 2050. In addition the crucial issues are resources and their distribution region wise under the impact of extreme events such as drought and floods, intervention and interaction of disease in productivity and related income generation of dependents. The paper dwells upon issues of climate change and related socio-economic development paths determinant in the ability to cope with problems of food instability caused by climate related factors.*

**Keywords :-** Productivity, Development paths, Food instability, Disease, Resources

Food security refers to the availability of food and one's access to it. A household is considered food secure when its occupants do not live in hunger or fear of starvation. According to *World Resource Institute* global per capita food has been increase in substantially. In 2006, MSNBC reported that globally the number of people who are overweight has surpassed the number who are under nourished, i.e. an estimated 800 million are under nourished. According to 2004 article from BBC, 30 million people have been added to the ranks of the hunger since mid 1990's and 46% of the children are underweight.

Climate change is a significant and lasting change in the statistical distribution of whether patterns over periods ranging from decades to millions of years. More often the term has become synonymous with anthropogenic global warming inclusive of increasing green house gas level effects.

### Objectives of the study:

1. To access the present levels of understanding by the community regarding climate change in reference to climate schedules and agriculture response.
2. To seek information, analyze and understand the impact of present patterns in climate change on rural life and livelihoods.
3. Develop an understanding of the challenge faced in minimizing the adverse impact of climate change on agriculture resources and resultant food insecurity.

### The Emerging Patterns:

Factors that shape climate are called climate forcing or forcing mechanism. These include process such as variation as solar radiations, deviations in earth's orbit, mountain building and continental drift, and change in

green house gas concentrations. Evidence of climate change in taken from a variety of sources that can be used to reconstruct past climates. Reasonably the changes are inferred from indicators such as vegetation, ice cores, dendro chronology, Sea level changes and glacial geology.

Over 900 million people experience the hardship that hunger encompasses, a figure which continues to rise even amidst the riches of 21<sup>st</sup> century. As world food prices surge new peaks, food insecurity and feminine once again dominates humanitarian headlines, barely three years since the last crisis. Engulfed with in a vertex of population growth, economic instability and climate change, food security presents a formidable challenges for national and global governance.

### The Initiatives:

The science, Sociology and Economics of food production and access to food began in 2009, reviewed that in developing country, often 70% or more of the population lives in rural areas. In that context, agricultural development among small land hold farmers and landless people provides a livelihood for people allowing them the opportunity to stay in their communities. Approximately 2.4 Billion people live in the drainage basin of Himalayan rivers. India, China, Pakistan, Afghanistan, Bangladesh, Nepal and Myanmar could experience floods following severe droughts in coming decades.

Food security is a situation when all people, at all times, have physical, social and economics access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for active and healthy life (FAO 2008). Thus food security will prevail of both demand for and supply of food is inadequate to meet the food requirements of a country in a dynamic manner and Food insecurity will prevail if either of them falls short If demand

\*Sanjay Sachdeva, H.O.D. B.B.A., S.D. College of Management Studies Mujaffar Nagar  
\*\*Pooja Pathak Lecturer SITM Barabanki

in terms of both quantity and quality.

CGIAR and ESSP seeks to overcome the threats to agriculture and food security in a changing environment, exploring new ways of helping vulnerable rural communities adjust to global changes in climate.

In India 28.9% of the population lives below the National Poverty line. According to the Human development report 2010, India with a Human Development Index of 0.519 has a Multi Poverty Index of 0.296 and 41.6% of its Population below Poverty line of PPP \$ 1.25 a day. A large portion of this poor live in the rural areas. According to IFAD, large number of India's Poor live in Rajasthan M.P., U.P., Bihar, Jharkhand, Orissa, W.B. and Chhattisgarh. Most of the states come under the semi-arid tropical and moist tropical region. In these areas adverse climatic conditions like recurrent droughts, shortages of water, monsoon failures are bottleneck in the agriculture production.

Today climate change has become a serious impediment in the path of development of the rural poor. According to NAPCC 2009, climate change may alter the distribution and quality of India's natural resources and adversely affect livelihood of its people. With the Indian economy closely tied to its natural resource base and climate sensitive sectors such as agriculture, water, forestry, India may face major threat due to the projected climate change as 2/3 of rural population depends for its livelihood on the climate sensitive resources and with ¾ of the country's agriculture is dependent on the monsoon rainfall.

China, India & U.S. account equally for some 40% of the total area in the world under crop production. Yet the agriculture production in metric tons per capita of the total population is for the world 0.26, China 0.29, India 0.20 & U.S. 1.4. The US agriculture is influenced by (a) increased urbanization (b) increased population migration from rural to urban communities (c) farming by mechanization and consequently decreased dependence on labor. (d) Increased area under cultivation and application of biotechnology (e) Gain of higher yields and (f) Farms consolidation.

In contrast, factors influencing food insecurity in the developing country includes (a) increasing population (b) rapidly growing urbanization (c) decreasing crop land (d) decreasing farm resources (e) continuing crop loss and (f) declining biodiversity.

#### Literature Review:

Pulitzer Gateway of food security suggest that the risk poised by a fungus that is deadly to the world's largest crop, wheat, continues to rise. More than a billion people in developing countries rely on wheat for their food and income. Shaun Schmickle explored in a 2008 project for the Pulitzer center Ug99, poses a major threat because 80% of the Asian and African wheat varieties are susceptible to the fungus. In his blog on Philanthropy Action Tim Ogden urges global poverty philanthropists to look towards agriculture and funding for science as he elaborate on the potential discovery of the wheat killing disease. A post by Allen Dodson on the Biodiversity blog of the federation of American scientists insists the vital importance to deal with the disease to develop new forms / hybrid of Ug99 in Africa to recover the insecurity resulting from the disease. Steve Lavage in-Sustainability-remains optimistic relying on plant breeders on what they

have achieved in the past and would continue to do so, what he calls as qualified optimism.

#### The Growing Concerns:

India ranks 65<sup>th</sup> out of the 88 countries on the 2009 global hunger index with worse under nutrition rates than nearly 25 sub-saharan African nations and all of south Asia, except Bangladesh. 285 million women earn livelihood from agriculture. 60% of India's agriculture is dependent on rain fed crops and even modest alterations in the intensity, frequency and timing of rainfall can disrupt agriculture production. 5 major disaster in the last 8 years have affected millions. Our population by 2050 would be nearly 1.8 billion and the aspect of storage, movement and utilization of food grains will attain a higher magnitude since 75% of the produce has not received adequate attention for storage and distribution.

Feminine is the most extreme state of Food insecurity. It exists where a series of hunger indicators, including mortality, cross critical thresholds set by the UN. The first MDG falls short of food security aspirations in seeking only to reduce by half the proportion of world's population experience in hunger. FAOs has two indicators for measuring hunger i.e. 2000 Calories per day for light activity and second is the proportion of children under five years who are underweight in relation to their age. There has been no improvement on this count since 1995 amongst poor families in South Asia where the incidents underweight children is 43%, according to 2011 MDG progress report.

In response to widespread under nutrition and growing concern about agriculture incapacity to meet future food needs and set targets for govt. and non govt. organizations for achieving food security at the individual, household, national, regional & global levels, World food summit was conducted in 1996. Further in 2009 world summit on food security helped launched the global food security program in April 2010 & the global food crises response program.

#### The Implications of Climate Change:

The paper concludes the following implications of climate change on food and fodder security for the rural population in particular and the community at large in general -

1. Increasing population
2. Low rainfall
3. Less water for irrigation
4. Decrease in agriculture produce quality and quantity
5. Higher expenses in substituting natural resources.
6. Less availability of fodder for animals with decreasing her size and mulching animals.
7. Less availability of water for drinking and maintaining herds.
8. Increasing instance of disease in human & animals.
9. Crop failures.
10. Migration of labor.
11. Adverse conditions prevail due to sudden changes in temperature.
12. Use of fertilizers and pesticides in agriculture production.
13. High rate of forest destruction.
14. Intensive farming and more cultivation of irrigated crops.

#### 15. Diesel operated irrigation and cultivation.

In their report, the Commission on Sustainable Agriculture and Climate Change proposes specific policy responses to the global challenge of feeding a world confronted by climate change, population growth, poverty, food price spikes and degraded ecosystems. (South African Condition for CSIR on Food insecurity.) has pointed several tasks to be earnestly performed to overcome to fear of starvation.

To understand the path forward, the commission reviewed major components and drivers of the global food systems including the rate of changing of diet patterns, the link between poverty, national resource degradation, and low crop yields the need to address the inefficiencies in food supply change, gaps in agricultural investment and the patterns of globalized food trade, food production subsidies and food price volatility.

#### The Action Path:

1. Integrate food security and sustainable agriculture.
2. Significantly raise investment in sustainable agriculture and food systems.
3. Sustainably intensify agriculture production while reducing green house gas emission and other negative environmental impacts of agriculture.
4. Target population and sections most vulnerable to climate change and food security.
5. Reshape food access and consumption patterns to ensure basic nutritional needs.
6. Reduce loss and waste in food systems particularly infrastructure, practices, processing, distribution and household habits.
7. Create comprehensive, shared, integrated information systems, then encompass human & ecological dimensions.

#### The Realization:

The Indian Government in 2012 has also come up with its response to the dimensions of food insecurity with rising population and agricultural capacity to meet present and future demands with a Food Security Bill 2012 which insures a minimum of 46% of the rural population and 28% urban population a minimum availability of 7 Kg of food grains per month per person. Rice will be provided at Rs. 3/ Kg., wheat at Rs. 2/ Kg. and coarse grains at Rs. 1/ Kg.

In achieving food security, it is important to find ways and means to reducing present losses of produce, poor processing and marketing techniques and inadequate storage & distribution facilities in the Indian context. It is expected that productivity will fall because of increased temperature & reduce rainfalls. Developing countries must prepare policies to mitigate potential damages from climate change. With climate variability, a mixture to improve agriculture productivity and the provisions of food assistance are often applied. Agricultural productivity assistance can help the farmers cope with marginal environments. Food assistance can

help the poor bridge the gap between one harvest and the next.

Productivity reductions from climate change are far more permanent than with climate variability. Consequently more permanent solutions to the more long lasting problems that get over climate change by considering the following steps. (1). Maintaining agriculture inputs and productivity levels in affected areas and communities. (2). Providing alternate development strategies to mitigate the adverse changes in climate and (3) Encouraging people to migrate away from adverse sites to productive centres.

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