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## **A Brief Study on increasing Food Productivity in Assam and Neighboring States**

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### **Abstract**

*Food production is the base for food security. The internationally accepted definition of food security is that given by the Food and Agriculture Organization of the UN (FAO) in the Rome Declaration on World Food Security, 1996, further refined in the FAO's State of Food Insecurity in the World, 2001. "Food security [is] a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life." The availability of food is determined by production of food. According to Swaminathan given that India's population is likely to reach 1.5 billion by 2030, the challenge facing the country is to produce more and more from diminishing per capita arable land and irrigation water resources and expanding abiotic and biotic stresses. India currently produces about 230 million tones of cereals to meet the needs of a population of 1.15 billion. He has rightly remarked that 'while calculating food requirements, the needs of farm animals are often overlooked and hence the current situation in India is that cereal production has to be doubled by 2050 in order to meet the needs of the expected population of 1.8 billion, in addition to meeting the needs of livestock and poultry' With such a backdrop the main objective of the research paper is to suggest ways of increasing food productivity. The other objective is to ensure means of creating awareness amidst the needy ones.*

**Key Words: Malnutrition, public distribution system, food-grains, self-help group.**

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**Introduction:** The Food and Agriculture Organization states that food security emerges 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. In India where more than one third of the population is below poverty line than concern of food insecurity becomes a major issue. The World Bank Report on Malnutrition in India, 2009-13 estimates that India is one of the highest ranking countries in the world for the number of children suffering from malnutrition. The 2011 Global Hunger Index (GHI) Report ranked India 15th, amongst leading countries with hunger situation. With such a backdrop the emergence of the National Food Security Bill, Right to Food Campaign, Introduction of Targetted Public Distribution System- to name a few highlights effort put in for reducing the food insecurity in India. The concept of food security creates a situation where demand for want of food equals supply of food-be it in form of grains, cereals, stock. It had been recorded that post-independence and due to the effect of green revolution India had come to a position where import of food grains was almost stopped except during emergency and severe crop failure. However, till India could reach the end of 2000 it was clear that even per capita availability

became scarce as the increase in population could not be matched with the available production. So much so that S. Mahendra Dev and A. Sharma observed that during the period 1996-2008 as compared to the years 1986-97, the growth rate in food grain production declined very sharply from nearly 3 percent to around 0.93 percent leading steadily towards food insecurity.

**Statement of the problem:** The report from the latest round of the National Sample Survey Organisation (NSSO) titled "Situation Assessment Survey of Agricultural Households" for 2012-13 clearly shows agriculture in India is not only in terrible crisis, but is fast decaying. If statistics are to be believed than in the last seventeen years media has reported of more than three lakhs farmers committing suicide. Survey reports have highlighted that more than forty two percent of farmers will readily leave the occupation of agriculture if alternate choice is offered. The Census 2011 tells us that more than 2,400 farmers quit agriculture and migrate to the cities every day. The World Bank had estimated that in the 20 years following, by 2015, the number of people migrating from rural to urban areas in India will be equal to the combined population of Britain, France and Germany. Policy makers too seem to be concentitious about the decline in agriculture production as in the twelfth five year plan, the budgetary support was increased to Rs 1.5 lakh crore from Rs 1 lakh crore as in the 11th Plan Period. In the year 2014-15, agriculture received only Rs 24,000 crore, a sector which employs fifty eight percent of the current population. Here we cannot but mention that the industrial sector on the other hand got tax concessions worth Rs 5.73 lakh crore this year.

**Literature review:** The North east part of India is been projected as a hotspot tourist destination. The picturesque landscape with its magnificent flora and fauna do attract tourists. According to ATDCL data, the State received 19,953 foreign tourists and 44,38,870 domestic ones in 2014 which was higher than its previous year's data. A total of 41,43,776 domestic tourists and 16,134 foreigners visited the State destinations in 2013. But still agriculture remains the primary occupation of the state. Statistics reveal percentage of cultivated area to total geographical area ranges from 2.2 percent (in hilly states like Arunachal Pradesh) to 35.4 percent (Assam), as compared to 43.3 percent at all-India level. Here agriculture is the sole means of livelihood. So once again it is proved that the food insecurity has to be brought to a stable position by increasing the agricultural products. The government is harnessing on the water resources, fertility, greenery along with wildlife to increase inflow of tourists. In the same shot the same potentials of natural resources can be utilised as optimum strength to ensure agricultural growth. Along with this to bring food security there have to be presence of proper market linkages and connectivity by roadways to remote areas. This method will utilise the critical path methodology where more than one activity can be carried out with one event and at the same cost. It is sheer blessing that the under agricultural production in the North Eastern Region can be entrusted upon frequent flood, soil erosion, land-slides and insurgency but efforts to utilise upgraded machineries, awareness about schemes and subsidies available are not much considered to replace the loss. The agricultural growth has been uneven across NER, which comprises 8% of India's total geographical area but produces only 1.5% of the nation's food grains. The economy of the region is lagging behind as the prime occupation is giving low input and with 101.27 lakh people living below the poverty line, the state of Assam has the 12th highest number of poor people in the country and the highest in the north east region, according to Planning Commission's Poverty Estimates, 2011-12. The north eastern part of India has been rightly remarked by B.C. Barah, as fertile land, abundant water resources, evergreen dense forests, high and dependable rainfall, mega biodiversity and agriculture-friendly climate. The arising concern of food insecurity will be a challenge no longer if people and policy makers handle the potentials gifted naturally for growth and development. The primary crop of this area is rice. If we talk of Assam,

geoclimatic variations and agriculture's dependence on rainfall have resulted in three distinct rice growing seasons: sali or winter rice (June/July to November/December); ahu or autumn rice (March/April to June/July); and boro or summer rice (November/December to May/June). But mostly flood crops get damaged. With the entrance of 'Boro' Rice, this problem is somewhat controlled. It has been reported by Regional Agricultural Research Station, Assam Agricultural University, that this crop assumes tremendous importance because, unlike the ahu and sali seasons, which are affected by flood, the boro rice season is relatively risk-free, which means that improved rice production techniques could be adopted totally, and there is ample scope for area expansion by bringing the chronically flood-affected and deep-water rice areas under boro rice cultivation by creating irrigation facilities. The same institution has also suggested that considering the vast potential of boro rice in Assam, it is imperative that rice scientists develop suitable rice varieties and management practices that are ideally suited to diverse boro rice-growing situations. An understanding of the target environments and farmers' needs is the first step in the process of developing varieties and agro techniques that are specifically suited to the environments concerned.

It has been recorded that there is increased cropping intensity, leading to a situation of surplus production in Assam. "The northeast region is expected to be a food sufficient area in five-six years," remarked Indian Council of Agricultural Research (ICAR) director general and renowned agricultural scientist S. Ayyappan. He continued that "With the collective efforts of the ICAR and states' agricultural experts, we could improve food production and productivity in all the northeastern states. The deficiency of food grains has reduced from 8.33 percent per triennium (three years) in 2012 to 2.51 percent per triennium in 2014." However, this data should not make us complacent. If we compare the pace of economic development in north eastern with the rest of India all types of farmers should be made aware of available technologies and assistance provided by government or they remain as mere schemes in paper work only. A forum needs to be set up by people like us where information can be immediately percolated to those people working at grass-root level like primary school teachers, post offices and members of gram panchayat. Ayyappan said that the ICAR has launched the KIRAN (Knowledge Innovation Repository of Agriculture in the Northeast) platform in 2012 to harness the power of scientific knowledge and technology innovation for strengthening agricultural production systems in the northeast region through dynamic partnership and convergence among the diverse stake holders. But the question remains do the needy knows about it. With knowing and utilisation of such provisions productivity can be farther increased and counter food insecurity.

Coming to a cultivation which can generate employment and raise living standard is our tea industry. Tea is grown in 3,12,210 ha area with production capacity of 507million kg, in Assam alone. Assam is the single largest tea growing region in the world. Production of tea and workers earning livelihood from this industry has been prevalent since a long time. Now, the same industry is posing as a tourist attraction. Tea tourism has become the buzz word in promoting the tourism for North East India as claimed in the article. It has also brought to light that tea estates as well as the government are planning to develop additional facilities inside the tea garden to attract tourists which can help in generating additional revenue. The state government Assam is working towards creating the necessary infrastructure for tea tourism. They are re-organizing to create the best tourism infrastructure at almost all destinations, including rural areas. If perennial problems like unemployment and its after effect like poverty and food security to some extent will be handled by such ventures. It is rightly remarked by Anil Chandy Ittyerah that "the sufficient purchasing power

in the hands of the poor can be made available through an employment intensive pattern of growth wherein remunerative work is provided to the poor thereby enhancing their purchasing power.”

**Objectives:** Taking into account the entire north eastern region, except Assam raising its rice productivity, rest can be declared food grain-deficit. The north eastern region has a demand of 6.7 million tons of food grains but produces only 5 million. The reason for creation of this food insecurity is less production of both regular and major food grains. The main objective of the research paper is to suggest ways of increasing food productivity considering the north eastern region. The other objective is to offer means of creating awareness amidst the needy ones.

**Research questions:**

1. What is the status of food security in the north eastern India?
2. How can the problem of increasing food insecurity be diminished?

**Research methodology:** The paper is descriptive in nature. Hence, it is based on literature review.

**Analysis and findings:** To bring about sustainable changes in making food availability along with Assam, all other north eastern states are to increase production of rice. Farmers usually, apart from Assam, duck off using high yielding variety seeds. Reasons seem to be -"One of the main reasons that Indian cultivators are not planting the latest hybrid rice varieties is they do not like the taste. The other reasons are lack of awareness and access to the better seed varieties," said International Rice Research Institute (IRRI) senior scientist Takashi Yamano. He also mentioned that the yield of rice in Southeast Asian countries like Thailand, Vietnam, Cambodia, Indonesia is almost double in comparison to India. Hence, to increase rice productivity adoption of hybrid seed varieties has become essential. To make products market effective sufficient amount of agri-inputs become vital like use of markets agrochemicals, plant nutrients, specialty fertilizers and hybrid seeds. Report of Indian Chamber of Commerce has reported that the use of agricultural inputs in the north east is also low compared to the rest of the country. Fertilisers used per hectare during 2010-11 were negligible in the region, especially in Nagaland (2.35 kg), Arunachal Pradesh (3.01kg); and ranged between 13 kg in Meghalaya and 63 kg in Assam compared to the national average of 135.27 kg per hectare. Also the share of agriculture in total electricity used is just under 1% in all the north-eastern states, except Tripura (7.41%), as against the national average of 20.43%.

The availability and the process of flow of availability of farm credit also ensures growth in the agricultural sector and hence food security also. There are instances which have indicated that the credit deposit rates especially of rural and semi-urban branches of banks have declined indicating a neglect of the credit needs of the farming community. There has also been an increase in indirect credit in total agricultural credit. This indirect credit has been through various intermediary agencies and instruments such as the R.E.C., special bonds issued by NABARD, and deposits placed by banks in the Rural Infrastructure Development Fund in lieu of priority sector lending .

Water is a significant part agricultural development. The north eastern part of India is also duly blessed with good rainfall but again easy availability is made its essence lost. There is no documentation of utilising the water either by conservation or harvesting to accelerate crop yield. Amrit Patel has made certain observations that NER has significant amount of unexploited irrigation potential, particularly in the Imphal valley of Manipur and in Tripura. The report also says that only, about 19% of the total potential of 5.7 lakh hectares is exploited in Assam as against 40% in India. Manipur can attain about 10% of its potential to cover 65,000 hectares. Irrigation potential in Tripura can cover 2.81 lakh hectares. It also studied that since surface irrigation potential in

Mizoram, Meghalaya, Nagaland, and Sikkim needs to be exploited since topographical conditions do not favor exploitation of groundwater for irrigation.

The farmers and their lack of appropriate knowledge about updated technologies also stand as a factor that deters the growth of agricultural sector. It is essential to bring about changes for betterment by implementing training programmes to the extension staff. The efforts taken up by various agri-research centres should develop location specific research to augment productivity based upon of that availability of raw materials, method of farming, climatic condition. In this context it is worth mentioning the initiative taken by M.S. Swaminathan Research Foundation and their kind of work should cover more and more areas.

The marketing aspect of agricultural products in the north east is in need of proper scanning. Unwanted situations are faced primarily by small and marginal farmers who are somehow earning their livelihood. The role of intermediaries seems to be that of siphoning off margins only. This has led to a wider gap between producer and consumer prices. These situations have contributed towards output price volatility. Educated people and policy makers should ensure and guide this class of farmers to sell their products through cooperatives, contract farming and organising producers marketing cells through self-help groups. The growing retail sector has made big department or retail stores to purchase direct products from producers. So tie up with corporate houses and retail chains should be shown to the farmers. There are also talks of special economic zones to get economic benefits but on the other hand such advantages would also affect growth of agriculture. If proper regulations are not handled the question of food security would also arise. The need to set up Special Economic Zones to boost industrial production and exports also diverts agricultural land to non-agricultural use.

We also have the central government aided public distribution system (PDS) which carries out operation nation-wide. The primary objective of this system is to deliver the necessary and available supplies to enlisted consumers. Though respective state governments run the PDS, central government assist it by purchasing food grains from regions that have surplus. At the same time the responsibility of maintaining buffer stock is also undertaken by it. This support system has been initiated not only to safeguard the farmers but also to balance self-sufficiency in food grains. The food grain prices are also controlled. The mechanisms applied to ensure a continuous flow by the food management system are procurement at minimum support prices, the maintenance of buffer stocks, and the public distribution system support price policy for agricultural commodities seeks to assure remunerative prices to farmers in order to ensure higher production and investment, it also tries to safeguard the interest of consumers by ensuring supplies at affordable and reasonable prices, through the provision of subsidy. The National Sample Survey Organisation has reported that in the past three years, MSP for wheat and rice have been raised by a paltry Rs 50/quintal every year. That is not even enough to offset the rate of inflation that the country has witnessed. On top of it the Commission for Costs and Prices itself has been demanding the removal of MSP for farmers, to have the markets decide the price that farmers should be getting.

Buffer stocks are maintained to control the prices of food grains. At times due to flood or drought deficit may rise in production and supply of food grains. In such external environmental circumstances prices still remains under control in the open market. On behalf of the government because of buffer stock, the public remains assured of availability of food grains at an affordable rate even during emergency.

**Conclusion:** With the changes brought in by implementing the desired views, it is expected that north eastern region will witness not only increase in productivity of traditional food grains but also high value crops. Simultaneously, infrastructure facilities will make ways. In the near future, with the expected changes coming in, the north eastern region will certainly be at par in with the rest of India in achieving all round inclusive growth. The interregional differences and problems of malnutrition will also be mitigated leading to improvement of food intake by the poor section of the society.

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