

# Exploring Food Security in Pakhimoria Block, Nagaon District, Assam: A Multi-Dimensional Case Study

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## **Abstract:**

This study aims to delve into the critical issue of food security in the Pakhimoria block of Nagaon district, Assam, India. The research focuses on four main objectives: understanding the implementation of various food security programs, examining the gap between the public distribution system and its beneficiaries, assessing the self-sufficiency of local agricultural production during distress periods, and studying nutritional awareness among households.

The results reveal a significant proportion of beneficiaries covered under food security programs, yet gaps remain due to irregularities in program implementation and issues with the quality and quantity of food provided. The local agriculture, traditionally the primary source of food and income, is being gradually abandoned due to socio-economic challenges and a lack of adequate support systems. This shift has raised concerns about self-sufficiency during periods of distress such as floods and droughts. Furthermore, the nutritional awareness among households is still deeply rooted in traditional beliefs, with limited understanding of the nutritional components of their diets. This study underscores the necessity for improved implementation of food security programs, strengthening of the local agricultural sector, and increased nutritional awareness in the Pakhimoria block. These improvements could ensure greater food security and contribute to the overall well-being of the population.

**Keywords:** Food Security, Public Distribution System, Agricultural Practices Nutritional Awareness.

## **Introduction :**

Food Security is a matter of concern for the whole world. Several Global instances of food crisis such as Bengal Famine in 1943, Ethiopia in 1972, Bangladesh in 1974 raised a global concern for relation between demand and supply of food. Many international organisation were come up to bring solution for this global problem of food security. In the year 1974 the first world food conference was held in Rome by the effort of United nations under United Nation Food and Agriculture organisation after devastating great famine of Ethiopia and Bangladesh which wake up the world to come jointly and stand for food safety. The first world

food conference come to an end with proclamation that “every man, woman and child has inalienable right to be free from hunger and malnutrition in order to develop their physical and mental faculties”.

Food security concept was primarily started with focus on assuring the availability of food and stability of prices but in later period Food and Agriculture organisation of United Nations describe that “Food security is a situation when all people at all times have sufficient food to meet their dietary and nutritional needs to lead a healthy and productive life” concerning more towards concept of nutrition, diet and preferences of food.

Food security refers to a situation where 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. In essence, it means that individuals and communities have a consistent and reliable source of food, which is of sufficient quality and quantity to maintain their health and well-being. Food security is crucial for human survival, social stability, and overall sustainable development.

Food security is a fundamental aspect of human well-being, as it ensures that people have access to sufficient, safe, and nutritious food for an active and healthy life. Achieving food security is vital for social stability, economic growth, and overall sustainable development. This concept note provides an introductory overview of food security, its dimensions, and the challenges associated with ensuring global food security.

### **Dimensions of Food Security:**

Food security can be assessed through four main dimensions:

- a. Availability: The supply of adequate food through domestic production, imports, food reserves, and food aid to meet the demand of the population.
- b. Access: The ability of households and individuals to obtain food through purchasing, home production, or social safety nets, ensuring that all people can obtain the food they need.
- c. Utilization: The effective use of food by individuals, including the nutritional quality of the food consumed, food preparation, and the ability to absorb nutrients from the consumed food.
- d. Stability: The ability to maintain food security over time, considering factors such as natural disasters, political instability, and economic fluctuations that can affect the availability, access, and utilization of food.

### **Challenges to Global Food Security:**

Several factors challenge the achievement of global food security:

- Population growth: The global population is projected to reach nearly 10 billion by 2050, increasing the demand for food and putting pressure on agricultural resources.
- Climate change: Extreme weather events, temperature fluctuations, and changing precipitation patterns can lead to reduced crop yields and increased vulnerability of agriculture to pests and diseases.

- Land and water constraints: As arable land and freshwater resources become scarcer, it becomes increasingly difficult to expand agricultural production.
- Food waste and loss: Roughly one-third of the food produced globally is lost or wasted, exacerbating food insecurity and inefficient resource use.
- Political instability and conflict: Wars, civil unrest, and political instability can disrupt food production, trade, and distribution, leading to food shortages and famine.
- Economic factors: Fluctuations in global food prices, trade policies, and economic development can affect the affordability and availability of food.

food security is a complex and multi-dimensional issue that requires a concerted effort from governments, the private sector, and civil society. By addressing the challenges through innovative and sustainable solutions, we can work towards a world where everyone has access to safe and nutritious food.

The Indian government faces numerous challenges in ensuring food security for its vast and diverse population. Some of the key challenges include:

- Population growth: With a rapidly growing population, currently exceeding 1 billion people, the demand for food is continuously increasing. Ensuring food security for such a large population puts immense pressure on agricultural resources and the food distribution system.
- Agricultural productivity: Indian agriculture is characterized by small landholdings, dependence on monsoons, and limited use of modern agricultural technologies. These factors result in lower agricultural productivity, making it difficult to meet the growing food demands.
- Climate change: Climate change poses a significant threat to India's agriculture, as it leads to erratic rainfall patterns, droughts, floods, and an increase in pests and diseases, all of which negatively impact crop yields.
- Post-harvest losses and food wastage: A significant portion of food produced in India is lost due to inadequate storage facilities, poor transportation infrastructure, and inefficient supply chain management. Additionally, food wastage at the consumption level exacerbates food insecurity and inefficient resource use.
- Poverty and inequality: Despite India's economic growth, a large section of the population still lives in poverty, which affects their ability to access nutritious food. Additionally, inequalities in income and social status create disparities in food access and utilization.

Implementation of food security programs:

The Indian government has implemented various food security initiatives, such as the Public Distribution System (PDS) and the National Food Security Act (NFSA). However, issues like corruption, leakages, and inefficient targeting of beneficiaries hinder the effectiveness of these programs.

Sustainability of food production: Ensuring food security in the long term requires sustainable agricultural practices that preserve natural resources, such as water and soil, and minimize environmental degradation. Encouraging sustainable farming methods and reducing the dependence on chemical inputs are major challenges for the government.

To address these challenges, the Indian government needs to implement a multi-faceted approach that includes investing in agricultural research and development, improving the efficiency of the food supply chain, strengthening social safety nets, promoting sustainable agricultural practices, and enhancing the effectiveness of food security programs. Collaborative efforts between the government, private sector, and civil society are crucial for achieving food security for all in India.

India's National Food Security Act (NFSA), also known as the Right to Food Act, was enacted on September 12, 2013. The act aims to ensure food and nutrition security for the Indian population, particularly the vulnerable sections, by providing access to adequate quantities of quality food at affordable prices. The NFSA represents a significant step towards achieving food security in India, which has a high prevalence of malnutrition and hunger.

The main provisions of the National Food Security Act include:

**Coverage and entitlements:** The NFSA covers up to 75% of the rural population and 50% of the urban population, categorized as priority and Antyodaya Anna Yojana (AAY) households.

**Subsidized prices:** Under the NFSA, the prices of food grains are set at a highly subsidized rate.

**Identification of eligible households:** The responsibility of identifying eligible households lies with the state governments based on specific inclusion and exclusion criteria.

**Nutritional support to women and children:** Pregnant women and lactating mothers are entitled to maternity benefits, including cash assistance and nutritious meals. Children aged 6 months to 14 years are entitled to age-appropriate meals through the Integrated Child Development Services (ICDS) and the Mid-Day Meal Scheme.

**Grievance redressal mechanism:** The NFSA provides for a transparent and accountable grievance redressal mechanism at the district and state levels, with designated officers responsible for addressing complaints.

**Transparency and accountability:** Provisions under the act require regular social audits and public disclosure of records related to the Public Distribution System (PDS) and other food security programs.

**Food Security Allowance:** In case of non-supply of food grains, the act mandates the payment of a food security allowance to entitled individuals.

The National Food Security Act is a significant milestone in India's efforts to address food insecurity and malnutrition. By providing legal entitlements to food and nutritional support, the act aims to improve the health and well-being of India's vulnerable populations.

Therefore, this study seeks to address the government effort as well as individual effort to secure dietary need and to find out the gap between beneficiary and public distribution system in Pakhimoria Block of Nagaon District in middle Assam. The paper also addresses several dimension related to food security and its different prospects.

### **Literature Review:**

Food security in India as well as south Asian region has been a focus of academic research for quite some time.

K.S Acharya (1983) examine the food security in India and define the concept of food security as well as various components of food security and its importance in Indian context.

P.S George (1994) study about food security of South Asia which is one of the most vulnerable region in terms food security and suggested that food production can be increased in these countries by employing better technologies in agriculture production, trading adequate buffer stock and enforcing target oriented programmes.

M.S Swaminathan (2004) defined food security as the livelihood security for the household and all members within, which ensures both physical and economic access to balance diet, safe drinking water and environmental sanitation, primary education and basic healthcare. According to him food security is a complex function to multiple aspects. These aspects can be categorized as social, institutional relations, access to resources (natural, financial, human), livelihood and service; quality of soil and land holding size; national policies, international trade policies.

Das and Sikider (2015) study about the relation between own cultivable land and food security and found that to meet their cultivation need households do not have liquid cash and borrow from outsiders at a high interest rate. Most of the landless labourer do not enjoy self-sufficiency in domestic food grains. Importance direct benefit transfer in public Distribution System is also suggested for effective implementation of food security act 2013.

### **Objectives of the study:**

The present study has been undertaken with the following objectives:

1. To investigate the implementation of food security programs in the study area, with a focus on the state-level context.
2. To analyze the discrepancies between the public distribution system and the intended beneficiaries in the study area.
3. To assess the adequacy of local agricultural production in meeting the consumption needs of the community and evaluate food sufficiency during challenging periods.
4. To explore the level of nutritional awareness among households in the study area.



### **Research Methodology :**

The study covers a diverse range of households in Pakhimoria Block of Nagaon District. As per Census of India 2011 report there are total 45 Gaon Panchayat falls under Pakhimoria Block. Almost 9821 households live within this block and out of this 7667 falls in rural area and remaining 2154 in urban area. It is easily predictable that most of them falls in Rural and practice agriculture as their livelihood. Therefore two number of Gaon Panchayat have been chosen for the study, namely Deodhar gaon panchayat having 343 household, and Jolah gaon Panchayat having 379 household. Therefore it is thought that these two Gaon Panchayat represent almost all the block as most of the Gaon panchayat have similar nature.

Since it is exploratory research, it is mostly based on primary data collection from the households therefore universe of the study is taken as 9821 households of the Pakhimoria block. Sample Size was fixed at almost 10% of the universal size. The sample was drawn by using convenient sampling method (non- probability Sampling Method) interviewing 100 household respondents available during the period of study. Convenient sampling is “accidental” or “haphazard” sampling. In this sampling the researcher studies all those people who accidentally came in contact during the period of research. 100 households’ family members of the selected area were interviewed through schedule.

### **Results and Discussion:**

Based on the response of the household, the researchers try to analyse various facts and figures accordingly to the objective of the study. First, analyse the various government schemes that have been already implemented regarding food security and its impact upon beneficiaries.

The Table below provides information on the number and proportion of respondents benefiting from various food security programs in the region. It includes the Antodaya Anna Yojana (AAY), Below Poverty Line (BPL), Mukhyamantri Anna Suraksha Yojana, and those not benefiting from any scheme.

| Sl. No. | Table 1 : Schemes implemented for food security |                               |               |
|---------|---|-------------------------------|---------------|
|         | Name of the food security Programme             | No. of beneficiary respondent | In percentage |
| 1       | Antodaya Anna Yojana (AAY)                      | 14                            | 14%           |
| 2       | Below Poverty Line (BPL)                        | 37                            | 37%           |
| 3       | Mukhyamantri Anna Suraksha Yojana               | 10                            | 10%           |
| 4       | Not benefited                                   | 39                            | 39%           |
|         | Total   | 100                           | 100           |

It is observed from the table 1 that over 60% respondents covered under food security programme but out of this MMASY scheme is completely irregular and those beneficiaries who already covered under this scheme is not able to enrol in other two scheme after NFSA 2013 implementation. Under AAY Scheme food

grain like Rice 35 kg at Rs 3 provided irrespective of family member in the households. BPL Scheme cover almost half of the beneficiaries and food grain like rice is provided as 5kg per family member at Rs 3. Earlier another scheme for benefits of APL families were also provided but presently that scheme is closed by the government which increased non beneficiary numbers. Moreover, some respondents fall under poor category but due to negligence of panchayat they are out of getting benefit. Second, the gap between public distribution system and beneficiaries is analysed as number of fair price shop available in the village and total number of households.

The below Table provides information on the number of households and the number of fair price shops in two Gaon Panchayats, Jolah and Deodhar, which are important aspects of the public distribution system in these regions.

| Sl. no | Table 2 Number of fair price shop for households in both Gaon Panchayat |                     |                           |
|--------|---|---------------------|---------------------------|
|        | Name of the Gaon Panchayat  | Number of household | Number of fair price shop |
| 1      | Jolah Gaon Panchayat  | 379                 | 2                         |
| 2      | Deodhar Gaon Panchayat  | 343                 | 3                         |

It is observed that both Gaon panchayat have different number of fair price shop. Where Jolah Gaon Panchayat covered by 2 Fair Price Shop but in Deodhar 3 number of fair price shop available. Respondent report that they are not happy with the services of fair price shop. 90% respondent beneficiary reported that instead of providing 35kg shop owner is irregular in providing full amount of food grain. Moreover instead of providing good quality rice inferior stocks have been provided. As there are not any measures to know about quality of rice. Apart from that as NFSA describe about nutritional security only rice is provided to the beneficiaries not any item of pulses and other food grain. Therefore nearly 90% households are unhappy with services from shop owner. There is an important point mention by respondent about irregularity stock information to the beneficiary and their prices.

To fulfil third objective, researchers studied the area of land for cultivation and person engaged in agriculture production and it is observed that though respondent have land but they do not have liquid cash to continue agriculture production. Moreover, for liquid cash in sowing season they prefer local moneylender and “Bandhan Bank” at high interest rate.

Though their first and second generation practiced agriculture as main profession for livelihood but in third generation instead of working in the field they prefer to do job in other towns and cities. Therefore, the number of agriculture dropout is significantly increasing and in many instances land remain unutilised for production or depend upon contractual farming call AADHI. Which significantly rise up the question for self-sufficiency for food security. As land become less most prefer to dropout agriculture practice. Therefore, during the period of flood and drought people do not hold sufficient food storage to fulfil their need.

Moreover, there is an important question arise as government already closed down programmes like above poverty line subsidies rate food grains to enrolled household and kerosene, sugar etc. items. There may be high chances that in due course of time if any financial crisis come out for government, then this welfare policy may be shut down as government is not obliged to provide as per constitution.

The table below shows how the respondents meet food deficiency through two main sources: own cultivation and salary. It provides information on the number of respondents, their landholding size, and the methods used to meet food deficiency during different periods, such as regular times, floods, and droughts.

| Sl No | Sources         | No of respondent | Land holding (Bigha) | Period  |        |         |               |
|-------|-----------------|------------------|----------------------|---------|--------|---------|---------------|
|       |                 |                  |                      | Regular | Flood  | Drought | Other problem |
| 1     | Own cultivation | 73               | 1-12                 | self    | borrow | borrow  | self          |
| 2     | Salary          | 27               | 1-5                  | self    | self   | self    | self          |

The Table below shows the agriculture practices for self-sufficiency of food among two groups of respondent beneficiaries - those with their own land for cultivation (57 respondents) and those without their own land (4 respondents). It also presents information across three generations, including land size, the number of family members engaged in agriculture or other professions, and their dependency on food security programs.

| Respondent beneficiaries<br>Having own land for cultivation | Generation | Land (In Bighas) | Number of family member engaged | Profession                  | Depend on Food Security program |
|---|------------|------------------|---------------------------------|-----------------------------|---------------------------------|
| 57  | 1st        | 10- 20           | All                             | Farmer                      | No                              |
|   | 2nd        | 2- 5             | Only 2-3                        | Farmer/<br>Jobholder        | No >Yes                         |
|   | 3rd        | 1-2              | 0 or 1                          | Farmer/Labour/<br>Jobholder | Yes>no                          |



|   |     |    |    |                                     |     |
|---|-----|----|----|-------------------------------------|-----|
| 4 | 1st | No | No | Labour                              | Yes |
|   | 2nd | No | No | Labour/<br>Aadhiar<br>(Contractual) | Yes |
|   | 3rd | No | No | Aadhiar/<br>Jobholder               | Yes |

It can be observed that in 3<sup>rd</sup> generation of households mostly depend upon food security programmes run by the government. Moreover, those who not have own land for cultivation they mostly depend upon contractual farming in others land vulnerable to their economic as well as food security. Another major significance is most of the young people in village households migrate to other state for livelihood in 3<sup>rd</sup> generation.

In fourth observation was done for nutritional awareness among households. In table 5 found that most of the people believed in traditional approach of nutrition. They believed in their own custom about nutrition and not aware about protein, fat, carbohydrate in their diet. But female respondent comparatively more care about household's dietary need therefore they collect available staff in their nearby areas to prepare meal out of that.

The Table below provides information on the nutritional awareness and food intake awareness of male and female respondents in the region. It indicates that both genders have traditional nutritional awareness and are aware of the benefits of various types of food, including rice, pulses, green vegetables, milk, fish, and fruits.

| Sl no | Gender | Nutrition awareness | Food Intake and their benefits awareness |        |                  |      |      |              |
|-------|--------|---------------------|--|--------|------------------|------|------|--------------|
|       |        |                     | Rice                                     | Pulses | Green Vegetables | Milk | Fish | Fruits Local |
| 1     | Male   | Traditional         | Yes                                      | Yes    | Yes              | Yes  | Yes  | Yes          |
| 2     | Female | Traditional         | Yes                                      | Yes    | Yes              | Yes  | Yes  | Yes          |

## Results and Discussions

This paper examines the different aspects of food security such as government initiative, public distribution system efficiency to cover food security as well as self-sufficiency of people in both the Gaon panchayat where survey was carried out among 100 household respondents. The result of study reveals that most of the household in rural area mostly depends upon Food Security programme run by government. Though

government introduced targeted public distribution system but still many of them deprived of getting equal benefits. Moreover, corrupt practices still prevalent in food supply.

In another dimension of the study found that though people have cultivable land for food self-sufficiency but they prefer interstate migration job to secure their family in terms of food. Therefore, the number of agriculture dropout is growing continuously. Moreover, improper land use pattern leads to food deficiency. Therefore, government agencies and other non-government organisation may come out to aware farmer about self-sufficiency of food grain and its conversion to livelihood sources. Use of new technologies and new high yielding seed to produce more irrespective of climate change. Micro credit financial assistance service to be gradually extended to rural level so that small and marginal farmer get benefited. Agriculture marketing need to be developed with the help of digital technologies to increase farmer's income and become a significant measure for reducing agriculture dropouts.

Considering all of this facts and convince upon state perspective on food availability and accessibility and utilisation of land resources by the individual may ensure India's dream for "Food for All"

In conclusion, this study on food security in the Pakhimoria block of Nagaon district, Assam, reveals several key findings. It has been observed that over 60% of the respondents are covered under food security programs; however, the implementation of these programs has been irregular, and many beneficiaries are not able to enroll in multiple schemes. Furthermore, the closure of certain schemes by the government has increased the number of non-beneficiaries, leaving many in need without proper support.

The quality of service provided by fair price shops is another area of concern, with 90% of respondents expressing dissatisfaction with the quantity and quality of food grains supplied. Additionally, there is a lack of transparency regarding the stock information and prices. This points to the need for improved monitoring and oversight of these distribution channels.

The study also highlighted the challenges faced by households in maintaining self-sufficiency in food production. Issues such as limited access to credit, high interest rates from moneylenders, and the migration of younger generations away from agriculture have contributed to a decline in agricultural practices and food security for many. This raises concerns about the long-term sustainability of food security in the region

Furthermore, the study found that many households rely heavily on government food security programs, which could be vulnerable to changes in government policy or financial crises. This underscores the importance of developing alternative strategies to ensure food security, such as promoting sustainable agriculture and local food production systems.

Lastly, the study examined the nutritional awareness among households and found that most people hold traditional beliefs about nutrition and are not fully aware of the importance of a balanced diet. This highlights the need for nutrition education and awareness programs to promote healthy eating habits and improve the overall health of the community.

In light of these findings, it is essential for the government and relevant stakeholders to address the identified challenges by improving the implementation of food security programs, enhancing the quality of service provided by fair price shops, promoting sustainable agriculture, and increasing nutritional awareness among households. By taking these steps, the long-term food security and well-being of the Pakhimoria block can be significantly improved.

#### Suggestions:

- There is an urgent need of proper system of identification of beneficiaries eligible for different food security programme.
- To check anomalies in fair price shop vigilance quad should strengthened and audit system should be introduced at local level.
- It should be instructed to fair price dealer to display stock availability and date of delivery.
- More fair price shop should be open to increase competition among them.
- Implement as soon as possible the food stamp scheme for getting better results and checking corruption.
- For self sufficiency of food government should properly introduce Soil Health Card, PM Krishi Sinchayee Scheme for better irrigation and soil nutrients.
- As most places are flood prone area therefore flood resistant crop should be provided by government.
- In food grain procurement process small and marginal famers should be included so that they get motivated with government announced MSP.
- For nutritional security other food item like pulses should be introduced and awareness should be created among woman through civil society and NGO's to take care of their family.

Enhance the implementation and monitoring of existing food security programs to ensure regular and adequate distribution of food grains to beneficiaries. Efforts should be made to address any gaps in coverage and to streamline the enrollment process for eligible households.

**Improve the Public Distribution System (PDS):** Enhance the transparency, accountability, and efficiency of the PDS by providing regular stock information to beneficiaries and monitoring the quality and quantity of food grains supplied by fair price shops. Introduce grievance redressal mechanisms for beneficiaries to report issues related to the PDS.

**Encourage sustainable agricultural practices:** Promote the adoption of sustainable farming methods, efficient irrigation techniques, and climate-resilient crops to improve agricultural productivity and reduce vulnerability to climate change. Provide financial incentives and capacity-building programs to support farmers in adopting these practices.

Facilitate access to credit and financial services: Improve access to affordable credit for smallholder farmers by promoting the establishment of rural banks, cooperatives, or microfinance institutions. This would enable farmers to invest in agricultural inputs and infrastructure, enhancing their productivity and food security.

Diversify income sources and livelihood opportunities: Encourage the development of alternative income-generating activities, such as agro-based industries, livestock rearing, and small-scale enterprises, to reduce dependence on agriculture and enhance household resilience to food insecurity.

Promote nutrition education and awareness: Implement community-based nutrition education programs to raise awareness about the importance of a balanced diet and the nutritional value of various food items. Special focus should be given to women, as they often play a crucial role in household food preparation and decision-making.

By implementing these recommendations, the Pakhimoria block of Nagaon district, Assam, can work towards achieving long-term food security, improved nutrition, and sustainable development for its residents.

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