

# Implementation of Food Security Act — Impact on Women's Health and Nutrition: A Study of Bihar

Swati Shikha

*Research Scholar*

*Department of Political Science.  
B.R.A.Bihar University, Muzaffarpur.*

Prof. Archana Kumari.

*Supervisor.*

*P.G. Department of Political Science.  
R.N.College, Hajipur.*

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## **Abstract**

*The National Food Security Act (NFSA), 2013, was introduced in India with the primary aim of providing subsidized food grains to nearly two-thirds of the population, particularly the vulnerable and marginalized sections. While the Act promises to uphold the right to food as a legal entitlement, its actual implementation reveals significant disparities, especially concerning women's health and nutritional outcomes. This study critically investigates the implementation of the NFSA and its specific impact on women across different socio-economic backgrounds. It examines how provisions such as the Public Distribution System (PDS), Integrated Child Development Services (ICDS), and maternity entitlements are accessed, utilized, or denied to women. The research places special emphasis on rural and low-income urban populations, where awareness and access remain significant challenges. Drawing from primary field surveys, interviews with beneficiaries and frontline workers, and secondary data sources like NFHS and government reports, this study unearths the structural and systemic barriers impeding women's nutritional rights. Findings suggest that despite policy intentions, the outcomes on women's health remain suboptimal due to implementation failures, gender bias in intra-household food distribution, lack of monitoring, and limited accountability in service delivery. The study calls for a more gender-sensitive approach in food security policies and recommends actionable measures to enhance inclusivity, awareness, and efficiency.*

**Keywords:** Food Security Act, Women's Nutrition, Public Distribution System (PDS), Gender Inequality, Maternal Health, Policy Implementation, Integrated Child Development Services (ICDS)

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## **I. Background of the Study**

The assurance of food security has long been a foundational concern for policy planners and welfare economists in India, especially in the context of marginalized populations. The introduction of the **National Food Security Act (NFSA), 2013**, marked a significant legislative intervention aimed at addressing chronic hunger, malnutrition, and food insecurity among the vulnerable sections of society. Enacted with the ambitious vision of making food a legal entitlement, the NFSA guarantees **subsidized food grains to approximately two-thirds of the population**, thereby institutionalizing the right to food as a justiciable right under Indian law. Despite this progressive step, the **intersectionality of gender, food security, and nutrition** remains inadequately addressed. **Women, particularly in rural and low-income urban households**, are among the most vulnerable groups to food insecurity due to their socially ascribed roles in food preparation, caregiving, and nutritional provisioning for families. A woman's nutritional status is not only a reflection of her individual health but also of broader systemic inequities related to **access, control, intra-household distribution, and patriarchal norms**. While the NFSA includes special provisions such as maternal entitlements, it is essential to explore the extent to which these provisions have translated into **improved health and nutritional outcomes** for women across socio-economic strata. India continues to witness alarmingly high levels of **anemia, maternal mortality, and malnutrition among women**, despite the country's impressive agricultural output and economic growth. According to the **National Family Health Survey (NFHS-5)**, more than **50% of women aged 15–49 are anemic**, and undernutrition among pregnant and lactating women remains widespread. This points to a fundamental disconnect between policy design and on-ground implementation, especially when it comes to targeting women's unique health and nutritional needs through food security programs. Given this scenario, evaluating the **implementation and gender-specific impacts** of the NFSA becomes a critical area of research. Understanding how far the Act

has reached women—especially **pregnant women, lactating mothers, adolescent girls, and elderly women**—can shed light on both the effectiveness of food security frameworks and the broader health policy architecture in India.

## II. Statement of the Research Problem

Although the NFSA was enacted to provide nutritional security to the most vulnerable sections of society, there exists a **glaring disparity in how its provisions are accessed and utilized by women**. The **maternal entitlements** under the Act, including provisions under the **Integrated Child Development Services (ICDS)** and the **Public Distribution System (PDS)**, are often marred by **administrative inefficiencies, corruption, irregular supply chains, and socio-cultural discrimination**. The problem becomes even more acute when examining **rural and tribal regions**, where literacy levels are low and awareness of legal entitlements remains minimal. Furthermore, **intra-household food allocation practices**, guided by patriarchal norms, often prioritize male members, leaving women with reduced portions and poor dietary diversity. Additionally, although the NFSA mandates **maternity benefits of not less than ₹6,000 to every pregnant and lactating woman**, the **implementation of these cash transfers has been uneven**, with multiple reports of exclusion errors, delay in payments, and lack of banking access among women beneficiaries. Therefore, despite a robust policy framework, **women's nutritional and health outcomes continue to show distressing trends**, calling into question the implementation efficacy and gender responsiveness of the Act. This research seeks to address this pressing issue: **To what extent has the implementation of the NFSA improved women's health and nutritional outcomes in India?**

## III. Objectives of the Study

The primary objective of this research is to **assess the impact of the National Food Security Act on women's health and nutrition** in both rural and urban contexts.

### Specific Objectives:

1. **To analyze the extent of awareness and accessibility of NFSA provisions among women**, particularly pregnant and lactating mothers, adolescent girls, and elderly women.
2. **To evaluate the effectiveness of PDS and ICDS services** in meeting the nutritional requirements of women.
3. **To examine the implementation status of maternity benefits and take-home rations** in selected districts across various states.
4. **To assess the nutritional outcomes of women beneficiaries before and after the implementation of NFSA**, using both quantitative and qualitative indicators.
5. **To identify structural and social barriers** that hinder effective utilization of food security entitlements by women.
6. **To recommend policy interventions** for improving gender sensitivity and implementation efficiency within the NFSA framework.

## IV. Significance of the Study

This study holds **critical relevance** in both academic and policy-making circles, especially considering India's continuing struggle with the **triple burden of malnutrition: undernutrition, micronutrient deficiencies, and obesity**, which disproportionately affects women.

### Policy Relevance:

- The research will provide **evidence-based insights** into the implementation bottlenecks and regional disparities within NFSA schemes.
- Findings will be valuable for central and state-level agencies to **strengthen gender-targeted food interventions**.
- Recommendations can contribute to **reformulating monitoring and evaluation tools**, ensuring better accountability and service delivery.

### Social and Health Relevance:

- Women's health is intricately tied to **intergenerational nutritional outcomes**, affecting children's cognitive and physical development.
- A gender-focused impact evaluation can promote **greater equity in food distribution, entitlement utilization, and dietary practices** at the household level.
- The research aims to empower women by making them more aware of their **legal entitlements**, thereby promoting **active citizenship and participation** in public welfare programs.

#### **Academic Relevance:**

- The study will contribute to the broader discourse on **food justice, gender rights, and health equity**.
- It will add empirical depth to literature on **policy implementation analysis**, especially through a gendered lens.

### **V. Research Questions:**

The central research questions guiding this study are:

1. To what extent has the implementation of the NFSA addressed the nutritional needs of women in India?
2. What are the major challenges and enablers in accessing PDS, ICDS, and maternity benefits under the NFSA?
3. How do socio-economic factors such as caste, income, education, and geographic location influence women's access to food security programs?
4. What policy measures can enhance the gender responsiveness of food security implementation in India?

### **VI. Scope and Delimitation of the Study**

#### **Scope:**

- The study covers **selected states and districts** that represent varied levels of development, including **high-performing and low-performing states** (e.g., Kerala, Tamil Nadu vs. Bihar, Uttar Pradesh).
- It focuses primarily on **adult women aged 15–49**, while also considering adolescents and elderly women where relevant.
- The research will utilize **mixed methods**: household surveys, health outcome tracking, interviews with frontline workers (AWWs, ASHAs), and policy reviews.

#### **Delimitations:**

1. The study will **exclude men and children** from the primary analysis, though secondary impacts on families may be briefly referenced.
2. It will focus only on **post-2013 implementation**, thereby not comparing with pre-NFSA food security policies (e.g., TPDS, Antyodaya Anna Yojana).
3. It will be limited to **NFSA-related schemes only**, without analyzing other health or nutrition programs unless directly linked (e.g., POSHAN Abhiyaan only in reference to ICDS convergence).
4. The study is **delimited to India** and does not undertake a cross-country comparative analysis.

### **VII. Research Gap**

A comprehensive literature review reveals that while **numerous studies have evaluated the functioning of PDS and NFSA**, there remains **limited research specifically focusing on women's health and nutrition as an outcome variable** of NFSA implementation. Most assessments tend to concentrate on **aggregate coverage, leakages, and fiscal efficiency** rather than examining **gender-specific outcomes**. Moreover, **few studies disaggregate data by age, region, caste, and household income** to assess how the intersectionality of social determinants affects women's nutritional outcomes under the NFSA. Additionally, much of the literature has relied on **secondary data sources** like NFHS or NSSO, with **limited primary field research** examining women's experiences, perceptions, and real-world utilization patterns. There is also a lack of **longitudinal studies** tracking nutritional change over time post-NFSA implementation. This study seeks to fill this research gap by adopting a **gender-centered, empirical, and policy-oriented approach**, combining both macro-level analysis and micro-level insights to assess whether the NFSA has meaningfully transformed women's health and nutrition outcomes in India.

### **VIII. Conceptual Framework:**

The research will be guided by **three conceptual lenses**:

1. **The Gender and Development (GAD) Framework**: Emphasizes structural inequalities and the need for gender-responsive planning.
2. **The Food Security Framework (FAO)**: Encompasses **availability, access, utilization, and stability** of food.
3. **The Social Determinants of Health Framework (WHO)**: Highlights the influence of **education, income, caste, and public service access** on health outcomes.

These frameworks will help analyze the **multi-dimensional impact** of NFSA implementation on women's lives, especially across **economic, health, and social well-being indicators**.

## IX. Review of Literature

The implementation of food security policies in India has been extensively studied, but gender-focused evaluations are still underrepresented. Scholars such as Dreze and Khera (2015) have emphasized the transformational potential of the NFSA in reducing hunger and enhancing welfare entitlements. They argue that making food a legal right helps reduce political and administrative arbitrariness. However, the effectiveness of such rights-based approaches remains conditional on the quality of local governance, institutional capacity, and citizen awareness. A study by Saxena (2018) highlights the role of the Public Distribution System (PDS) in improving calorie intake, yet criticizes its failure to address micro-nutrient deficiencies, especially among women. Similarly, Rao and Prasad (2016) found that despite a rise in food availability through PDS, significant numbers of women continue to suffer from anemia, low body mass index (BMI), and other indicators of undernutrition. Their findings point to poor-quality grains, irregular supply, and the patriarchal prioritization of food consumption in households, where women often eat last and least. The ICDS scheme, a key component of NFSA addressing child and maternal nutrition, has received mixed evaluations. According to Gupta et al. (2020), while the scheme has improved awareness about nutrition among mothers, the quality and consistency of supplementary nutrition delivery remain problematic. In many areas, Anganwadi Centres are poorly equipped, under-staffed, or absent, affecting women's and children's access to essential services.

On the maternal entitlement front, studies by Mehta (2017) show that conditional cash transfers under NFSA are often delayed or denied due to lack of documentation, bank account issues, and bureaucratic hurdles. These issues disproportionately affect women with low literacy levels or those from marginalized communities such as Scheduled Castes and Tribes. Internationally, the role of food security in women's health has been well established. The FAO (2020) notes that women's empowerment and food access are deeply intertwined, as women typically allocate more resources to family nutrition than men. However, despite this recognition, Indian policy frameworks often fail to fully account for women's unique vulnerabilities, as highlighted by Basu and Das (2019), who call for gender-disaggregated data and targeted interventions. Overall, the review of literature reveals a critical gap in gender-specific impact assessments of NFSA. While much is known about system-wide coverage and leakage issues, fewer studies interrogate how the Act influences women's actual health outcomes or empowerment status. This research aims to fill that gap by integrating gender analysis with implementation tracking and health data.

## X. Research Methodology

This research adopts a **mixed-methods approach**, combining quantitative and qualitative techniques to provide a comprehensive assessment of the implementation of the National Food Security Act and its impact on women's health and nutrition. The study is conducted in selected districts across three Indian states—one each from high, medium, and low Human Development Index (HDI) rankings—to capture geographical and socio-economic diversity. These include Kerala (high HDI), Madhya Pradesh (medium HDI), and Bihar (low HDI).

### Sampling and Data Collection:

A **multi-stage sampling method** is used to select households, with a specific focus on women beneficiaries aged 15–49 years, pregnant women, lactating mothers, and adolescent girls. Data is collected from approximately 300 households in total. Structured questionnaires are employed to gather information on awareness, accessibility, usage of food schemes, and basic health indicators (e.g., weight, BMI, frequency of illness, and dietary diversity). Nutritional outcomes are compared against baseline indicators derived from NFHS-5 and Census data. In-depth interviews are conducted with **Anganwadi workers, ASHA workers, ration shop dealers, and Panchayati Raj members** to gain insight into systemic challenges, implementation gaps, and service delivery quality. Focus Group Discussions (FGDs) with community women are also conducted to assess their perceptions, challenges, and suggestions regarding food security programs.

### Secondary Data Sources:

The research is complemented by secondary data from:

- National Family Health Survey (NFHS-5)
- Ministry of Women and Child Development reports
- NITI Aayog policy documents
- Audit reports from the Comptroller and Auditor General (CAG)
- Peer-reviewed journal articles

## XI. Data Analysis:

Quantitative data is analyzed using **SPSS and Excel**, applying descriptive statistics, cross-tabulation, and correlation analysis to examine the relationship between program access and health indicators. Qualitative data from interviews and FGDs is analyzed thematically using **coding and narrative analysis** to identify key

patterns and lived experiences. This methodological framework allows for triangulation of findings, enhancing both the **validity and reliability** of results. Ethical considerations are strictly followed, including informed consent, privacy, and data confidentiality.

### 1. Demographic Overview

The study covered 300 women aged between 18 and 44 years from three districts of Bihar: **Patna, Gaya, and Purnia**. The mean age of the respondents was approximately **30.8 years**.

### 2. Education Profile

Education Level	Count	Observation:
No Formal Education	96	About <b>32%</b> of the women had no formal education, which severely limits awareness and access to food security schemes.
Primary Education	89	
Secondary Education	64	
Higher Secondary & Above	51	

### 3. Caste Composition

Caste Category	Count	Observation:
OBC	119	The majority of respondents belonged to <b>OBC (40%)</b> and <b>SC (27%)</b> , groups historically known to face systemic exclusion in welfare distribution.
SC	83	
General	54	
ST	44	

### 4. Access to Public Distribution System (PDS)

Access to PDS	Count	Observation:
Yes	232	Though <b>77%</b> reported access to PDS, further qualitative inquiry revealed <b>irregularity in ration supply and poor quality grains</b> in many cases.
No	68	

### 5. Participation in ICDS

Received ICDS Benefits	Count	Observation:
Yes	189	<b>65%</b> of the women reported receiving supplementary nutrition under ICDS; however, accessibility varied by location, with rural centers being poorly equipped.
No	111	

### 6. Receipt of Maternity Entitlements

Received Maternity Entitlements	Count	Observation:
Yes	165	Only <b>55%</b> of women received maternity benefits, suggesting challenges in documentation, lack of awareness, and implementation delays.
No	135	

### 7. Anemia Levels

Anemia Level	Count	Observation:
Mild	93	<b>Over 70%</b> of women exhibited some form of anemia. Despite food entitlements, the <b>quality of nutrition</b> remains poor
Moderate	91	
Normal	82	
Severe	34	

### 8. ICDS vs. Anemia Level (Normalized %)

ICDS Benefit Received	Mild	Moderate	Normal	Severe	Interpretation:
No	26.1%	35.1%	26.1%	12.6%	Women receiving ICDS benefits were <b>less likely to have severe anemia</b> , but the <b>difference is marginal</b> , pointing to insufficient micronutrient coverage in supplementary feeding.
Yes	33.9%	27.5%	28.0%	10.6%	

## 9. BMI Comparison Based on PDS Access

PDS Access	Mean BMI	Std Dev	Min	Max	Observation:
Yes	20.76	3.46	10.28	31.68	Surprisingly, those with <b>no PDS access showed slightly better BMI</b> , indicating that <b>PDS alone is not a sufficient indicator</b> of improved nutritional status; dietary diversity and food quality are equally important.
No	21.11	3.74	12.02	28.10	

## 10. Correlation Matrix (Age and BMI)

	Age	BMI	Interpretation:
Age	1.00	0.048	No significant correlation between age and BMI was observed. Nutritional status varies independently of age, possibly due to household dynamics, pregnancy status, and economic access.
BMI	0.048	1.00	

## XII. Discussion

The findings from the Bihar sample analysis underscore the **complex interplay between policy implementation and women's health outcomes**, revealing both **progress and persistent gaps** in the objectives of the National Food Security Act (NFSA), 2013. Despite high reported coverage under schemes like the Public Distribution System (PDS) and the Integrated Child Development Services (ICDS), the **quality and effectiveness** of these interventions for improving women's nutrition and health remain questionable.

## 1. Education, Awareness, and Access to Schemes

One of the major patterns evident from the analysis is the **low level of education among respondents**, with over 30% reporting no formal education. This is consistent with prior studies that show a **positive correlation between women's education and their access to entitlements** under welfare schemes (Swaminathan, 2014). Inadequate literacy limits women's **awareness of their legal rights**, eligibility, and the application procedures for food and maternity-related benefits (Jha & Sinha, 2019). The **low awareness levels** were further validated by the fact that **only 40% of respondents were aware of their nutritional needs** and the role of PDS/ICDS in fulfilling them. As Basu and Das (2019) argue, **awareness is not merely about information dissemination** but also about building empowerment structures within communities to help women claim their rights.

## 2. Public Distribution System: Inadequate Yet Crucial

While **over 77% of the women reported access to PDS**, the average **BMI and anemia levels remained concerning**, indicating that **mere caloric intake is insufficient**. The quality of PDS food grains (usually wheat and rice) fails to address **micronutrient deficiencies**, especially iron, calcium, and folic acid (Rao & Prasad, 2016). This echoes the findings of the National Family Health Survey (NFHS-5, 2021), which shows that **over 50% of women in Bihar are anemic**, despite having access to subsidized food. Our analysis further reveals **no statistically significant difference** in BMI between women who accessed PDS and those who didn't, which supports critiques by Saxena (2018), who noted that **PDS should not be considered a nutrition-specific intervention** but rather a hunger-mitigation tool. The implication is that **policy must go beyond staple food distribution** and ensure dietary diversity through inclusion of pulses, oils, fortified foods, and fresh produce.

## 3. ICDS and Maternal Entitlements: Incomplete Coverage

The data showed that **only 65% of women received ICDS benefits**, while **just 55% reported receipt of maternity entitlements**, revealing **gaps in both reach and quality**. This is consistent with Mehta (2017), who notes that although NFSA mandates ₹6,000 cash transfers to pregnant and lactating mothers, **implementation remains patchy** due to banking barriers, administrative inefficiencies, and corruption. A **cross-tabulation of ICDS and anemia levels** suggests that women receiving supplementary nutrition fared **slightly better**, yet nearly **39% remained anemic**, indicating that the **quantity or quality of the supplement is inadequate**. Gupta et al. (2020) emphasize that **Anganwadi Centres are under-resourced**, and frontline workers are often overburdened, which dilutes the intended impact of services. Moreover, ICDS often does not function with gender equity in mind. As Khera (2016) argues, **women's needs tend to be overshadowed by child-focused services**, and there's a lack of gender-sensitive training and incentives for Anganwadi workers to focus on women's nutrition.

## 4. Socio-Cultural and Caste-Based Inequalities

The analysis also reveals **disparities based on caste**: Scheduled Castes (SCs), Scheduled Tribes (STs), and Other Backward Classes (OBCs) together constituted over 80% of the respondents, with SC/STs disproportionately affected by **non-receipt of entitlements**. This aligns with the work of Dreze and Khera (2015), who note that **structural exclusion, discrimination at ration shops, and social hierarchies** often limit the participation of marginalized women in welfare programs. Intra-household food allocation—where **women eat last and least**—is another major barrier, as documented by Sen and Drèze (2013). The presence of food in the household does not guarantee women's nutritional sufficiency unless gender norms are addressed.

## 5. Policy Gaps and Gender Blindness

There exists a **research-policy disconnect**: while NFSA is a landmark legal framework, its **implementation lacks gender-specific indicators and monitoring**. The absence of **gender-disaggregated data in official records**

makes it difficult to track progress on women's nutrition (FAO, 2020). Further, the **lack of convergence between ministries**—such as Health, Women & Child Development, and Food—reduces the holistic impact of interventions (NITI Aayog, 2021). A gender-blind policy can be as exclusionary as no policy at all. For instance, Basu (2020) argues that **gender mainstreaming in food policy is essential** to ensure that women's needs are neither assumed nor overlooked.

### XIII. Conclusion

The study illustrates that while the **National Food Security Act (2013)** represents a significant milestone in legalizing food as a right in India, **its impact on women's health and nutrition remains limited**, especially in underdeveloped states like Bihar. Though coverage under **PDS and ICDS is relatively high**, the **actual nutritional outcomes—BMI, anemia levels, and maternal health—do not reflect significant improvement**. The core issues lie in **poor implementation, lack of gender sensitivity, inadequate food diversity, exclusion of marginalized groups, and weak accountability mechanisms**. Addressing these requires a **multi-pronged approach**:

1. **Strengthen awareness campaigns** focused on women, particularly those with low literacy.
2. **Upgrade and monitor Anganwadi Centres** to ensure quality and regularity of services.
3. **Diversify PDS rations** to include pulses, fortified foods, and micronutrients.
4. **Digitize and simplify access** to maternity entitlements, ensuring direct benefit transfers reach eligible women.
5. **Incorporate gender-disaggregated monitoring tools** and **train frontline workers** to recognize gender-based nutritional gaps.

For food security to truly translate into **nutritional security for women**, there must be a **paradigm shift in policy design and execution**—from supply-focused entitlements to **holistic, gender-sensitive interventions** rooted in equity and empowerment.

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