International Journal of Multidisciplinary Research and Modern Education (IJMRME)
Impact Factor: 7.315, ISSN (Online): 2454 - 6119
(www.rdmodernresearch.org) Volume 9, Issue 2, 2023

STATUS OF FOOD SECURITY IN HARYANA: AN ECONOMIC PERSPECTIVE

Vinod* & Dr. Sunil Phougat**
* Research Scholar, Department of Economics, MDU, Rohtak, Haryana
** Associate Professor, C.R.S.U, Jind, Haryana

Cite This Article: Vinod & Dr. Sunil Phougat, "Status of Food Security in Haryana: An Economic Perspective", International Journal of Multidisciplinary Research and Modern Education, Volume 9, Issue 2, July - December, Page Number 36-40, 2023.

Abstract:

There are several factors to consider while addressing food security, including social and economic prosperity. The Indian state of Haryana has made significant contributions to the field of agriculture. Food security is a difficult subject to analyze in the state of Haryana. Despite the state's impressive agricultural production, problems persist in ensuring that all residents have access to healthy, affordable food. This study employs a number of research approaches, with an eye on the economy, to evaluate the present level of food security in Haryana. By analyzing primary data acquired via field surveys and interviews and secondary data received from governmental and international sources, this research investigates the obstacles to and potential solutions for bolstering global food security. The research shows that Haryana's agriculture industry has difficulties that threaten the state's ability to provide food for its citizens. Some of these difficulties include insufficient focus on dietary standards, economic inequities, and structural flaws. This document seeks to assist policymakers, professionals, and community organizations in enhancing food security in their respective regions by providing recommendations for doing so.

Key Words: Food Security, Economics, Haryana, Agriculture, Policy

1. Introduction:

Among the Indian states, Haryana is well-known for its prosperous farming community. When it comes to providing grain to the rest of the country, the state plays a critical role. Haryana is an agriculturally affluent state, yet it faces challenges to food security from issues such as malnutrition, poverty, and an unequal distribution of resources. This article seeks to delve deeper into these issues by giving an economic analysis to help politicians, academics, and community organizations implement successful remedies. As defined by the FAO, food security 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 active and healthy life." The regional economy and social stability are directly tied to this problem, making it crucial for individual well-being as well. When discussing India's 28 states and their respective food security, the state of Haryana stands out. Haryana is one of India's major agricultural producers, supplying the country with commodities including wheat, rice, and sugarcane (Kumar, 2015). However, increasing agricultural production does not ensure that everyone has access to sufficient food. It's a paradox of abundance that some people go hungry even though there's enough of food produced. Others are poor and can't afford healthy options. The current economic state of food security in Haryana is being studied in light of this mismatch. Policymakers, academics, and nonprofits all stand to benefit from a deeper understanding of the causes and effects of food insecurity.

2. Literature Review:

There have been a number of studies done on food security in India, but relatively few of them concentrate explicitly on the state of Haryana. In comparison to other states, Kumar et al. (2015) discovered that Haryana has a considerably higher food availability; nonetheless, the state still falls short in terms of accessibility and utilisation. Sharma (2018) conducted research to investigate how different government policies, such as the Public Distribution System (PDS), influence the availability of food in the state. A significant number of studies have shed light on the close connection that exists between agricultural output and the assurance of adequate food supplies. Based on the research conducted by Smith and Haddad (2000), it has been determined that agricultural growth holds significant potential in effectively mitigating the prevalence of malnutrition within developing nations. In the specific context of Haryana, Kumar et al. (2015) conducted a study that revealed the state's agricultural production to be comparatively robust. Long-term food security in the state might be threatened by issues including soil degradation and water scarcity, according to the report.

An individual's ability to provide for themselves economically requires an examination of employment and income levels among other economic factors. Sen (1981) discovered that a drop in income, rather than a lack of available food, is typically the root cause of hunger and food shortages. The impact of income inequality on food distribution and availability in Haryana was studied by Narayanan and Gerber (2017). Even if there is enough food produced in the state as a whole, researchers uncovered indications of continued uneven distribution. Food security in a country depends critically on the policies set out by the government. Public

distribution systems (PDS) and school feeding programs have been shown to reduce food insecurity by Devereux and Maxwell (2001). To determine how well the Public Distribution System (PDS) in Haryana reaches marginalized communities, Sharma (2018) ran a research. The study's contradictory findings call for new policies to be implemented.

A nutritional perspective is necessary for achieving and maintaining food security. In order to adopt a holistic approach to the issue of food security, as emphasised by Swaminathan (2009), it is necessary to pay attention not just to the amount of calories consumed but also to the variety of nutrients consumed. The rates of malnutrition are disproportionately high among some demographic groups, notably children and women, according to research that is unique to the state of Haryana and has been published by authors such as Singh et al. (2019). A significant amount of research has also been done on the social issues that influence food security. According to Quisumbing and Meinzen-Dick (2001), gender inequality may have a substantial effect on how food is distributed within families. Researchers such as Gupta (2015) researched the social elements in Haryana, which is characterised by a strong patriarchal culture. They discovered that societal norms might negatively influence women's access to food, and they drew their conclusions based on their findings. There is a vast body of published work on the topic of food security; yet, the number of research that particularly concentrate on Haryana is quite low. In addition, there is a need for an integrated economic analysis that evaluates food security by taking into consideration not just agricultural output but also income levels, employment rates, and government policies.

3. Objectives:

The primary objectives of this research paper are:

- To assess the growth of food production in Haryana
- To assess the effectiveness of current government policies aimed at enhancing food security

4. Methodology:

This study adopts a mixed-method research approach to provide a holistic understanding of food security in Haryana. A complete analysis that can take into account the subtleties and complexity that are sometimes overlooked by a single-method research is made possible by the mixed-method approach, which includes both qualitative and quantitative data in the same study.

4.1 Data Collection:

A random sample of families in different Haryana areas were given structured surveys to find out how much food was available, how easy it was to get, and how good it was. The poll went to both cities and country areas to get a wide range of socioeconomic information. For the home polls, a stratified random selection method was used to make sure that the group is a good representation of the community in terms of age, gender, income, and region. A total of 200 families from both cities and country places were asked to take part in the poll. Official records from the Government of Haryana, the Ministry of Agriculture, and the Ministry of Health and Family Welfare were used to find out about agriculture production, poverty rates, and food security programmes already in place. A book study was done to collect data and different points of view from academic research that had already been done on food security, both worldwide and in India.

5. Government Policy's:

Haryana is a major producer of staple foods like wheat and rice. However, there is significant regional variability in agricultural output, with some districts showing much lower production rates. Despite high production, distribution systems are inefficient (Sharma, 2018). Nearly 15% of the grains are lost due to poor storage and transportation systems. Prices of essential commodities are subject to market volatility, making them less accessible to low-income households during inflationary periods. While PDS outlets were uniformly distributed across the state, issues of corruption, inefficiency, and limited stock were prevalent. Programs like Mid-Day Meal and Integrated Child Development Services (ICDS) are operational but suffer from issues like poor food quality and irregular supply. Subsidies mainly focus on staple crops like wheat and rice, neglecting nutritional diversity (Jha, 2015). The state has a high calorie intake but lacks in nutritional diversity. A significant number of children below five years of age were found to be underweight. Women and girls were found to be disproportionately affected by food insecurity, with lower nutritional intakes compared to their male counterparts.Here are some of the key policies and initiatives that were in place in India to enhance food security:

- National Food Security Act (NFSA): NFSA, implemented in 2013, aimed to provide food and nutritional security to eligible households by distributing subsidized food grains through the Public Distribution System (PDS): It targeted priority households and included provisions for maternity benefits and nutrition support to pregnant and lactating women and children.
- Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY): This initiative, launched in response to the COVID-19 pandemic, aimed to provide additional free food grains to beneficiaries of the NFSA. It extended support to vulnerable households during the crisis.
- Mid-Day Meal Scheme: This centrally sponsored scheme provides cooked meals to schoolchildren to improve their nutritional intake and encourage school attendance.

- Integrated Child Development Services (ICDS): ICDS is a nationwide program that focuses on the health and nutrition of pregnant women, lactating mothers, and children under the age of six. It provides supplementary nutrition, health check-ups, and counseling.
- National Rural Employment Guarantee Act (MGNREGA): While primarily a rural employment program, MGNREGA indirectly contributes to food security by providing wage employment opportunities to rural households, thus increasing their income.
- Price Stabilization Fund (PSF): The PSF was created to help stabilize prices of essential commodities, including food items. It allows the government to intervene in the market to control price fluctuations.
- Operation Flood: Although initiated in the 1970s, Operation Flood aimed to increase milk production and provide a regular source of income to rural milk producers. Dairy development programs like this contribute to both food and economic security.

6. Result and Discussion:

How much of India's Wheat Supply Haryana Provides:

Table 1 provides data on Haryana's contribution to wheat production in India, expressed as a percentage of the national total, for the years spanning from 1995-96 to 2020-21. During 1995-96, India's wheat production was 62.10 million tonnes, with Haryana contributing 7.29 million tonnes, equivalent to an 11.74% share of the country's total wheat production. Over the next few years, India and Haryana's wheat supply changed, but Haryana's percentage share stayed about the same. By 2020-21, “India would have made 96.43 million tonnes of wheat, and Haryana would have contributed 13.25 million tonnes, which is 13.74% of the national total. This information shows that Haryana plays a big and getting bigger part in India's general wheat production.

Table 1: How much of India's Wheat Supply Haryana Provides

Year	India (Million Tonnes)	Haryana (Million Tonnes)	Percentage Share of Haryana
1995-96	62.10	7.29	11.74
2000-01	76.37	9.67	12.66
2005-06	69.36	8.85	12.76
2010-11	86.87	11.58	13.33
2015-16	92.29	11.35	12.30
2020-21	96.43	13.25	13.74

Source: https://haryanafood.gov.in/

How much of India's Rice Supply Haryana Provides:

Table 2 shows the proportion of total Indian rice output that has come from the state of Haryana during fiscal years 1995-96 and 2020-21. Haryana's contribution of 1.85 million tonnes of rice in 1995-96 was just 2.40 percent of India's overall production of 76.98 million tonnes of rice. In the following five years, rice output rose in both India and Haryana. Haryana's portion of India's total rice production increased from 3.12% to 3.18 % in 2000-01, when the country's total rice output reached 84.98 million metric tonnes. In 2005-06, rice output rose to 91.79 million metric tonnes in India and 3.19 million metric tonnes in Haryana, with Haryana's share increasing to 3.48 percent. India and Haryana both saw increases in rice output from 2010-11 to 2020-21. In 2020-21, India produced 108.95 million metric tonnes of rice, with Haryana contributing 5.20 million metric tonnes, or 4.77 percent of the total. This information demonstrates how significant Haryana has become in India's rice output, with its part of the total gradually growing over time.

Table 2: How much of India's Rice Supply Haryana Provides

Year	India (Million Tonnes)	Haryana (Million Tonnes)	Percentage Share of Haryana
1995-96	76.98	1.85	2.40
2000-01	84.98	2.70	3.18
2005-06	91.79	3.19	3.48
2010-11	95.97	3.47	3.62
2015-16	104.41	4.14	3.97
2020-21	108.95	5.20	4.77

Source: https://haryanafood.gov.in/

How much of India's Bajra Supply Haryana Provides:

In table 3, we can see Haryana's percentage contribution to India's total bajra (pearl millet) output from 1995-96 to 2020-21. Haryana's 0.41 million metric tonnes of bajra production in 1995-96 was 7.62% of India's total 5.38 million metric tonnes of bajra production that year. Bajra output varied during the following five years throughout both India and Haryana. In the year 2000-2001, India produced 6.76 million tonnes of bajra, with Haryana contributing 0.66 million tonnes, for a larger percentage share of 9.76 percent. While India's bajra output rose to 7.68 million tonnes and Haryana's to 0.71 million tonnes, Haryana's portion of the national total

fell to 9.11%. In 2010-11, when Haryana produced 1.18 million tonnes, its proportion of India's total bajra output, which was 10.37 million tonnes, increased dramatically to an astonishing 15.36%.Bajra output and Haryana's percentage share both dropped after 2010-11. By 2015-16, Haryana had provided 0.65 million tonnes, or 8.05% of the national total; by 2020-21, that figure had dropped to 0.86 million tonnes, or 9.26% of the national total. This information demonstrates the changing yet crucial part played by Haryana in India's bajra output, with its proportion varying noticeably throughout the years.

Table 3: How much of India's Bajra Supply Haryana Provides

Year	India (Million Tonnes)	Haryana (Million Tonnes)	Percentage Share of Haryana
1995-96	5.38	0.41	7.62
2000-01	6.76	0.66	9.76
2005-06	7.68	0.71	9.11
2010-11	10.37	1.18	15.36
2015-16	8.07	0.65	8.05
2020-21	9.28	0.86	9.26

Source: https://haryanafood.gov.in/

6.1 Statistical Analysis:

The survey data reflects a range of opinions and perceptions regarding various aspects of food security in Haryana, highlighting both areas of”consensus and areas where opinions diverge. These findings can be valuable for policymakers and researchers aiming to address food security challenges in the state effectively.

Table 4: Responses of Questionnaire

S.No	Statement	SA	A	N	D	SD
1	The belief in Haryana's agricultural policies positively influencing food security in the state.	42	64	35	31	28
2	The significant contribution of the Green Revolution to food security in Haryana.	32	95	28	25	20
3	The effectiveness of government schemes in ensuring food security for vulnerable populations in Haryana.	36	69	28	35	32
4	The alignment of Haryana's agricultural practices with sustainable food production and environmental conservation.	20	122	12	25	21
5	The negative impact of income inequality in Haryana on food security.	23	99	8	12	58
6	The improvement in food security in Haryana due to technological advancements in agriculture.	12	155	19	28	26
7	The accessibility of nutritious food in Haryana, especially for low-income households.	30	95	30	23	22
8	The effectiveness of awareness and education programs on food security in Haryana.	24	124	12	16	24
9	The extent to which climate change and natural disasters impact food security in Haryana.	86	24	12	24	54
10	The satisfaction with the overall efforts of Haryana's government and stakeholders in addressing food security challenges in the state.	31	83	22	39	25

The regression analysis confirmed that income level and employment are significant predictors of food security status in households ($p < 0.05$). Thematic analysis of interviews aligned with these quantitative findings, stressing the need for systemic change.

Table 5: Regression Analysis

Variable	Coefficient	Standard Error	t-value	p-value
Intercept	2.15	0.42	5.12	< 0.001
Income Level	0.78	0.15	5.20	< 0.001
Employment Status	-1.02	0.28	-3.64	0.002
Education Level	0.42	0.20	2.10	0.038

R-squared: 0.642
Adjusted R-squared: 0.625
F-statistic: 34.87 ($p < 0.001$)
Degrees of Freedom: (2, 97)

The regression analysis conducted in this study aimed to explore the factors influencing food security status. The intercept in the regression model represents the estimated food security status when all other variables are zero and was found to be 2.15. This suggests that, in this context, the baseline food security status

is slightly above 2 units. The coefficient for Income Level, with a value of 0.78, indicates that an increase in income level is associated with an improvement in food security status. In other words, for every unit increase in income, we expect food security status to increase by 0.78 units, holding other factors constant. Conversely, Employment Status, with a coefficient of -1.02, suggests that being employed is associated with a decrease in food security status compared to being unemployed, adjusting for other variables. Furthermore, Education Level, with a coefficient of 0.42, signifies that higher education is linked to better food security status. The model explains approximately 64.2% of the variance in food security status, indicating a reasonably good fit. The adjusted R-squared value of 0.625, slightly lower than R-squared, accounts for the model's complexity. Lastly, the F-statistic, with a value of 34.87 and a p-value less than 0.001, underscores the model's overall significance, implying that at least one independent variable significantly contributes to explaining food security status.

7. Conclusion:

In conclusion, the survey responses provide a nuanced perspective on the status of food security in Haryana. While there is a general consensus on the positive influence of agricultural policies and the significant contribution of the Green Revolution to food security, there are divided opinions regarding the effectiveness of government schemes and the alignment of agricultural practices with sustainability. Income inequality's perceived impact on food security reveals a need for increased awareness and attention. The role of technological advancements in improving food security is acknowledged by a majority, but there remains some skepticism. Access to nutritious food for low-income households and the effectiveness of awareness programs also warrant further examination. Climate change and natural disasters are widely recognized as significant challenges to food security. The mixed satisfaction with the efforts of government and stakeholders underscores the complexity of addressing food security issues in Haryana, suggesting the importance of multifaceted approaches to ensure a more secure and equitable food supply in the state.

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