

# Economic Accessibility and Food Security of Women in Assam - A Case Study

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## Abstract

*The paper discusses the food security status of women in Assam and tries to examine whether there is association between the economic accessibility and food security of women. The study shows that the total food in-secured women in the study area are 20.2 per cent and there is no significant difference between food security status of rural and urban women. It is also observed that there is association between economic accessibility and food security status of women which indicates the need of urgent actions for improving household income, more involvement of women in economic activities, equal access of women to land and property and a secured organised and well paid working status to women.*

**Keywords:** Economic accessibility, Food security, Women, Economic activities.

## **Introduction**

The concept of food security is multifaceted and broader which depends on economic, social, political environment and also on behavioral and biological factors of individuals. The World Food Summit in 1996 adopted a definition which reflects the broader concept of food security : "Food security exists when all people ,at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preference for a healthy and active life." Thus an active and healthy life is the main

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objective inherent in achieving food security. The Government of India has been adopting several measures to ensure basic right to food to its people, but ironically food and nutrition security is a challenging issue in the economy. India ranks at 100 out of 119 countries in Global Hunger Index,2017 indicates urgent actions to remove hunger, reduce poverty and ensure food and nutrition security to all . The Global Food Security Index (2018) also ranks India at 76 with score 50.1 . The existing food insecurity in the economy is a factor of deteriorating skill and efficiency of the people and thereby the economic growth of the economy.

Food security as basic human right requires adequate consumption of quality food, equally important for men and women and mutually supportive (ADB,2013). However there is evidence in literature that women are most of the time deprived of the basic right and gender inequality exist in access to sufficient quality food (ECOSOC,2007, WFP,2009). The consumption of adequate quantity of quality food by women is essential to control the intergenerational growth failure from mother to child. It is because malnutrition of women results low birth weight babies and contribute to infant mortality rate. Among the surviving children , who born with low weight, growth retardation and illness occurs throughout their life and thus it results potential loss of human development in the long run and retards economic growth of a nation.

The consumption of adequate quantity of quality food is essential to control the intergenerational growth failure from mother to child and thereby to sustained economic growth. It is the accessibility of the households which mostly affects their consumption pattern . Accessibility or purchasing power of the household and individual depends on household income, prevailing market price and conditions. The low income households are unable to purchase sufficient quantity of quality foods and have to remain in poverty and hunger. Te Lintelo et. al. (2014) states that hunger is the result of an empty stomach due to insufficient income or social and economic entitlements to access food. Professor Sen (1981) viewed food security as “household purchasing power issue affected by access to income and other resources (such as transfers and gifts),market integration, price policies and market conditions.” Sen’s major concern was individual and household entitlement to curb poverty which directly affects food security. Literature also shows that women in low income households are more food insecure than women belonging to high income earning households (FRAC,2017) .

### **Food Security System in India**

The food management system of an economy through timely and effective procurement and distribution of food grains plays an important role in ensuring food security, particularly to the vulnerable sections of the society. In India the nodal agency that undertakes open ended procurement, distribution and storage of food grain is the Food Corporation of India (FCI) with other central and state agencies. The Minimum Support Price (MSP) of the government aims to protect farmers against excessive fall in price during bumper production years. As a measure of price stability and to make availability and accessibility of food grains government provides essential consumer goods at subsidized prices to the poor consumers through Public Distribution System (PDS) so that a minimum nutritional standard maintained. However the PDS of the economy has been suffering from limitations. There is wide criticism of PDS regarding exclusion of poor and inclusion non poor, corruption from procurement to the distribution of food at fair price shops. To overcome these challenges and to make the PDS more pro-poor the policy makers, researchers and the government has been emphasizing on food stamp, cash for food and other pragmatic measures for its universal coverage and implementation. The major changes in PDS is the introduction of National Food Security Act (NFSA, 13). The NFSA considers the food and nutrition security as a human life cycle approach. It thus emphasis on “ensuring access to adequate quantity of quality food at affordable prices to people to live a life with dignity”. As a nutritional support to women and children the NFSA makes provision of meals to pregnant women lactating mothers and children in the age group of 6 months to 14 years. There is also provision of Rs. 6000 incentives to pregnant and lactating mothers. Provision also has been made for food security allowance to entitled beneficiaries in case of non-supply of entitled food grains or meals.

### **Women and Food Security**

The food and nutritional security of women has both individual and social implications. Along with their own food security the generations of the nation becomes more skilled and productive. The accessibility to enough healthy food for a dignified life cycle is the first step in this regard. The production, import and food safety networks are the supply side determinants of food security. On the other hand economic accessibility or purchasing power of the households and individuals is a major factor affecting demand

for food. Thus a balance between supply and demand is necessary condition for a secured food and nutrition status. The lack of access to adequate amount of quality food results food insecurity, which mainly affects the women of poor households both in rural and urban areas. There are several factors that may influence the economic accessibility of adequate quantity food. The occupation and income generation of a family is a major factor which determines their ability to make expenditure in necessary food consumption. The women with higher household income are likely to be more food secure with diverse diet and required nutrition. However there is also evidence that food insecurity among women is higher than men and women are found to be food insecure even in a food secure household(Ivers and Cullen,2011; Papan and Claw, 2015), indicates intra household food insecurity and issues of gender inequality. Thus not only household income ensures the food security of women. The women need to be economically and socially strong for their secured food and nutrition status. The economic and social empowerment of women lies in their education and generation of higher knowledge and awareness. Education enables women to break all the barriers of movement towards gainful employment. The participation of women in economic activities are considered as a sign of economic growth. It also enhances their capabilities. The accessibility of adequate quantity of quality food by working women helps to maintain their own and children's health and nutrition status along with all other household members. It may be expected that the BMI of women and their diet diversity will increase with increasing education level (Dahiya & Viswanathan, 2015), as it results employment opportunities to women. However women are generally employed as casual workers with low paid wages and low social security. Regular employment is associated with a standard income generation and better economic and social status of women.

### **Food Security Status of Women in Assam**

The state of Assam falls in the serious category of hunger with State Hunger Index 19.85 | (India State Hunger Index, 2009). Poverty estimate indicates that the Poverty Head Count Ratio (HCR) in Assam is 31.98 percent which is much higher than all India average of 21.9 percent (RBI Annual Report,2013). The net Per Capita Income (PCI) of Assam has remain lower than the national average both at current and constant prices (Economic Survey, Assam 2017-18). Low per capita income results low purchasing power or accessibility of the individuals.

The socio economic status of women in Assam is not satisfactory. The gender inequality index in the state is 0.375 (Assam HDR,2014) and female literacy rate (77.56%) is lower than male literacy rate (86.72%) . The workforce participation of women and their quality of work determines the economic status of women and thereby their own food and nutrition status as well as the growth of an economy. The Assam Human Development Report, 2014 shows that “ of the total only about 15 percent of women belong to the labour force., of those in the labour force , only 17 percent are employed, leading to a high rate of female unemployment of 38.3 percent in the state.”

The low economic status of women has bearing on their food security status. The micronutrient adequacy in diet consumption is essential for the women in the reproductive age group (15-49 years). The lack of adequate diet due to low income negatively affects the health status of women and their children. The health indicators of the women and children in Assam are not satisfactory. 46 percent of women and 36 percent of children (6-59 months) are anemic in the state (NFHS-4). The Infant Mortality Rate(IMR) in Assam although shows a decreasing trend, but still higher (48) than national average (41). The Maternal Mortality Rate (MMR) of the state is highest in India (NFHS-4). The increased incomes of the households, economic empowerment of women along with other exogenous factors affecting food and nutrition status of women are the required policy interventions for a secured food status of the vulnerable group of women.

### **Objectives**

On the basis of above background the present study throws light on the following objectives

1. To determine the food security status of women in the study area.
2. To examine the association between economic accessibility and food security of women.

### **Methodology**

The study is based on multistage sampling procedure. In the first stage sample districts of Assam have been selected based on Average Per Capita Income (PCI) as estimated by Assam Human Development Report, 2014. PCI is an indicator of standard of living of the people. It reflects the per capita availability of food with adequate accessibility (Ruel et. al.,2004, Dahiya and Viswanathan,2015). The Average PCI of Assam is Rs. 2055 (AssamHDR,2014) .Only eight districts have Average PCI higher than the

state average. Thus in the first stage of sampling two districts namely Jorhat and Sivasagar above the state average of Average PCI and another two districts namely Tinsukia and Lakhimpur below the state average of Average PCI has been selected. In the second stage districts are divided as rural and urban . On the basis of lowest and highest coverage of Public Distribution System (PDS) two blocks and two towns from each sample district are selected in the third stage of sampling. From each block two villages and from each town two wards, thus 16 villages and 16 wards are selected at random in the fourth stage of sampling. The final stage purposively selects 10 percent households from each villages and wards on the basis of having women in the reproductive age group (15-49). This way a sample of 736 households from 16 villages(310 households) and 16 wards(426 households) have been selected as final sample unit for detailed observation

On the basis of structured questionnaire the study collects primary data. One women of reproductive age from each household has been selected for interview regarding questions related to women. The household level information has been collected from the head of the household. In addition , the study have collected data from various secondary sources like reports of International Food Policy Research Institute(IFPRI), National Sample Survey Office(NSSO) , World Health Organization (WHO) , National Nutrition Monitoring Bureau(NNMB), Government of India's reports, Assam Government reports and publications ,books, journals, internet and different published research paper .

The dietary intake assessments are widely used techniques for food security measurement( Jensen and Miller,2010 ; Sindhu et. al,2008). The present study used the Women Dietary Diversity Score (WDDS) to measure the food security status of women in the study area. It measure quantity component of food security and also used as proxies for measuring quality component of food access (Leroy et. al,2015). In 2005, the FANTA project initiated Women's Dietary Diversity Project .WDDS is the sum of nine different food groups(Table 1)consumed by the respondent women of reproductive age group. The food groups are included to reflect the probability of micronutrient adequacy of diets of reproductive women. Different recall periods such as previous 3 or 7 days, previous 30 days or previous 24 hours may be framed to collect data regarding the food groups consumption. FAO suggest to use 24 hour recall period as it is less subject to recall error and less cumbersome for the respondents (Kennedy et al.,2011). Literature also conforms the validity of 24 hour recall period (Kennedy et al., 2007, Arimond et

al.,2010, Ruel et al.,2004). The respondents are interviewed about their consumption of food groups (Table 3) in the previous 24 hours. For each positive response single point is awarded. Thus the WDDS ranges from 0-9. Based on overall distribution of WDDS in four sample districts, three tertiles are constructed as

- (i)  $3 \leq$  indicates low WDDS (LWDDS)
- (ii) 4 and 5 indicates medium WDDS (MWDDS)
- (iii)  $6 \geq$  indicates high WDDS (HWDDS)

For analytical purposes the dichotomous category of 'Food Insecured' (LWDDS) and 'Food Secured' (MWDDS and HWDDS) are constructed. The economic accessibility of required quality food has been measured in terms of household total monthly income, Income earned by women and by their types of employment.

Table 1. Food group categories for WDDS

Sl. No	Food Groups	Points
1	Starchy Staples( Rice,rooti,bread, noodles , all local staples made from rice ,potato,yam,sweet potato, taro root or other food made from roots)	1
2	Dark Green Leafy Vegetables(DGLV)	1
3	Vitamin A rich fruits and Vegetables	1
4	Other fruits and vegetables	1
5	Meat	1
6	Fish	1
7	Eggs	1
8	Legumes, nuts and seeds	1
9	Milk and Milk products	1
Total		9

Source: Prepared for local food groups based on "Guidelines for Measuring Household and Individual Dietary Diversity" , FAO 2011

## Result and Discussion

### Women's Food Security Status

The table 2 shows that maximum women, both in rural and urban areas, are in medium dietary diversity score. The total food insecure women in the study area are 20.2 percent and there is no significant difference between the food security status of rural and urban women. It may be due to fulfillment of food demand by rural women through home garden production of food grains and livestock and poultry. The home garden production of food grains and livestock and poultry unit is recognized as an important source to maintain food and nutrition status of rural women. The study has evidence that in flood affected areas livestock and poultry are used as risk mitigating strategy for stability in food demand and it is mainly the women of the rural households who are mainly engaged with livestock and poultry unit.

Table 2. Women Food Security Status as Measured by WDDS

Residential Status	Food Insecured (%)	Food Secured (%)			Test Statistics
	LWDDS	MWDDS	HWDDS	Total	
Rural	20.3	50.3	29.4	79.7	$\chi^2= 2.77$ p=.250
Urban	20.2	55.6	24.2	79.8	
Total	20.2	53.4	26.4	100.00	

Source: Field Survey

Another important factor contributing to food security is implementation of National Food Security Act, 13 (NFSA,13) in Assam from December, 2015. Under this scheme 2.52 crore people are being covered in the state for distribution of foodgrains at highly subsidized rate (PDS, Food, Civil Supplies and Consumer Affairs Deptt., Govt. of Assam). The rural poor households are benefited more with subsidized foodgrains. As the demand for staple food fulfill the household may diversify their demand for other nutritious food which positively affects the food security status of women.

### Economic Accessibility and Women Food Security

The ability to purchase required amount of quality food at the prevailing market price



indicates economic accessibility for a secured food and nutrition status. The table 3 indicates that the percentage of food insecure women decreases with increased household monthly income. There is also significant association ( $\chi^2 = 15.83$ ,  $p=.000$ ) between women's monthly income and their food security status. The working women make more expenditure on food items and contribute to food security of their own and other household members (Naser et. al, 2014). With employment of women the total income of the household increases and thus dietary diversity and thereby food security status improves. In present study (table 4) the positive relationship ( $R=.268$ ,  $p= .000$ ) between WDDS and Monthly Income of Women shows that the dietary diversity and thereby food security of women increases with the increased income of women.

However the working status of women is also very important. The employed women who are in regular working status are more food secured than the casually employed women . It is because the casual workers have to work at a low wage rate, income is uncertain and the working condition is insecure. The study shows that only 4.9 percent regularly employed women are food insecure while 26.2 percent of casually employed women are found food insecure in the study area.

Table 3: Association between Economic Accessibility Indicators and Women Food Security as measured by WDDS

<i>Economic Accessibility Indicators</i>	<i>Food Insecured Women (%)</i>	<i>Food Secured Women (%)</i>	<i>Test Statistics</i>
<b>Household Monthly Income (Rs.)</b>			
Below 25000	24.7	75.3	$\chi^2 = 65.78$ $p=.000$
25001-50000	7.2	92.8	
50001 and Above	4.0	96.0	
<b>Monthly Income of Women (RS.)</b>			
Below 10000	17.4	82.6	$\chi^2 = 15.83$ $p= .000$
Above 10000	2.4	97.6	

<b>Women Employment Status</b>			$\chi^2 = 41.763$ p= .000
Casual Regular	26.2 4.9	73.8 95.1	

Source: Authors' Calculation based on Field Survey

Table 4: Correlation between Economic Accessibility Indicators and WDDS

		Household Monthly Income	Monthly Income of Women	Women Employment Status
WDDS	Spearman Correlation	.274	.268	.165
	p value	.000	.000	.000

Source: Authors' Calculation based on Field Survey

**Summary and Conclusion:** The food security of an economy depends on the balance between demand and supply of foodgrains. The Indian PDS needs to be streamlined more for universal coverage of vulnerable sections. A shift from the present system of public distribution in kind to direct cash transfer and food stamps are need to be considered to archer our food policy to the requirements of the people. The NFSA's initiative to consider eldest women of the household of age 18 years and above to be the head of the household for the purpose of issuing ration card may be considered as important strategy of women empowerment.

The association and positive correlation of economic accessibility and food security status of women indicates the need of urgent actions for improving household income, more involvement of women in economic activities, equal access of women to land and property and a secured, organised and well paid working status to women. However it is not possible to improve the food security status of women only by their increased involvement in organised economic activities. A critical aspect would involve recognition of the role of the 'care' economy and women's role in unpaid work at the household and community levels. The rural women are mainly engaged with market

isolated household production of horticulture and livestock products. The investment in horticulture and livestock products and marketing of it enables women to earn income and to be economically empowered. The greater investment of public resources in women's education and training for skill development, investment to enable access to affordable food, setting up of childcare facilities and ensuring the availability of water, fuel and fodder at the local level can not only enable women to access paid work, but can have a multiplier effects in terms of ability to access adequate amount of nutritious food for their own, children and other family members for a secured food consumption status which have long run implications on human development and economic growth.

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