

Original Research Article

<https://doi.org/10.20546/ijcmas.2019.812.037>

## Gender Analysis of Dimensions of Food Security in Farm Households: A Study from Northeastern India

Kankabati Kalai<sup>1\*</sup>, Rajesh Singh Sengar<sup>1</sup> and Loukham Devarani<sup>2</sup>

<sup>1</sup>Department of Agricultural Extension, College of Agriculture, IGKV, Raipur, 492012, India

<sup>2</sup>Department of Social Sciences, College of Post Graduate Studies, CAU, Umiam, Meghalaya, India

*\*Corresponding author*

### ABSTRACT

Gender imbalance is most concern issue and is one of cause for food insecurity. Detail understanding of the issue is significant in forming any strategy for gender balance. The investigation was carried out with the motive to explore the gender differences in dimensions of food security in farm households. Data was collected from two states of Northeastern region Tripura and Meghalaya. 160 randomly selected farm households were considered for the study where both primary men and women were interviewed separately and individually from same household through pre tested structured schedule, making a sample size of 320 consisting of 160 primary men and 160 primary women. Gender analysis was carried out using the data collected from both men and women in all dimensions of food security and appropriate statistical method was applied. The findings from the present study revealed that there was significant difference between men and women in access and stability dimension of food security. Furthermore significance difference between men and women was also observed in socio-personal and socio-economic attributes. Based on the findings of the present study, suggestion was made, that for any planning and implementation of programme or policy the differences in gender the unique need and issue in individual level in farm household should be looked upon and taken into consideration.

#### Keywords

Gender, Tripura, Meghalaya, Food security, Gender analysis

#### Article Info

Accepted:  
04 November 2019  
Available Online:  
10 December 2019

### Introduction

Gender inequality and food security are considered to go side by side. Gender is clearly an important matter in the farming sector especially in developing countries (Paul, 2014). Both men and women have a different role in farming activities while

women are considered to play a vital role in feeding the world, meet the nutritional needs of their family members in spite of poor conditions and limited access to natural resources or other resources (Bridge, 2014). Despite enough production and rapid economic growth, still, the number of starving women and girls is more compared to their

men counterparts in India (Bridge, 2014). Furthermore, the Northeastern region of the country being far away from rest of mainland of the country has remained deprived from many developmental processes due to undulating topography remote location and political issues (NCERT, 2017). The Northeastern region consist of eight states viz. Tripura, Nagaland, Manipur, Meghalaya, Assam, Mizoram, Arunachal Pradesh, and Sikkim, commonly they were called seven sisters and one brother. Farming is considered as the main activity of this region (Barah, 2007) and provides around 70% of the livelihood assistance to the population of the region (Patel, 2017). The region often faces food shortages due to erratic climatic conditions and also a victim of food insecurity like the rest of the states (Das, 2017). The development process in the northeastern region is not gender-neutral. Even though the status of the women in this region is believed to be in a better position compared to the women who are blessed to avail other opportunities (Saikia, 2011), still differences might exist in dimensions of food security among the farming household. So, to explore and understand the gender differences in dimensions of food security in farm households in the region, the present study has been carried out. The findings of the present study can help in formulating gender-sensitive projects, policies, and programme to improve food security in the region both in the household and individual level.

## **Materials and Methods**

For this present study data was collected from two purposively selected Northeastern states (Tripura and Meghalaya). Tripura was selected based on the fact that the state is habitat by 19 different tribal groups which makes 31.76 % and other non-tribal groups (68.2 %) in the state, and in addition, the state follows patriarchy society. Furthermore,

Meghalaya was selected, as the state follows matrilineal society and the state is habitat majority by Khasi (34 %), Garo (30.5%) and Jantia (18.5%) (Census, 2011) tribal groups. Two districts from Tripura (Dhalai and Sepahijala) and two districts from Meghalaya (East Khasi hills and South-west Garo hills) were selected randomly based on an ethnic group from two selected states. From each district, two rural development blocks, from each rural development block two villages and from each village 10 households comprising of primary man and woman was selected randomly. From each household Primary man and woman were interviewed individually using a pre-tested structured schedule from each household making a sample size of 320 which comprises 160 men and 160 women.

For carrying out gender analysis four dimensions (Availability, Access, Use, and utilization and stability) of food security were considered. The gender-disaggregated data obtained from both men and women respondents were compared and analyzed using appropriate statistical tools.

## **Results and Discussion**

### **Differences in Socio-personal attributes among gender**

It is evident from the Table 1 that among the socio-personal attributes in the overall result, age (z value=3.10\*\*), education (z value=2.73\*\*), cosmopolitaness (z value=7.44\*\*) and control on resources (z value=6.91\*\*) was found to be significantly different between men and women at 0.01 level of probability. Whereas the attributes of social participation (z value=2.17\*), dietary diversity (z value=2.06\*) was significantly different at 0.05 level of probability between men and women. Furthermore, it was also spotted that men respondent mean score was found to be higher than women in age,

education, social participation, cosmopolitaness, control on resources and decision on food purchase/sell. However, women respondents were found to be significantly higher than men in and access on resources/assets. When state wise result was observed different result was spotted in both the states.

In Tripura, age (z value=3.20\*\*), cosmopolitaness (z value=10.72\*\*), access on resources/Assets (z value=9.23\*\*), control on resources/assets (z value=10.96\*\*), and decision on food purchase/sell (z value=5.19\*\*) was found significantly different between men and women at 0.01 level of probability, while education was found significantly different 0.05 level of probability.

Furthermore, the result from Meghalaya showed that in only social participation (z value=4.38\*\*), men and women were significantly different at 0.01 level of probability. In household mostly between husband and wife, the age of wife is less than men as men prefer wife younger than them, can be one of the reasons behind this difference. While in case of difference in education, women's discontinuation of their study when they reach marriageable age can be the fact behind.

Men being free from household chores are more mobile and being considered as the breadwinner of the family, have active social participation (both formal and non-formal) and access to different food groups compared to their women counterparts. Gender-based heavy machinery and other resources mostly belong to men and for which they have more control over it. In addition to it, women have control over the resources which belong to them, purchased by themselves, and received a gift from their parents or relatives during marriage.

### **Differences in Socio-economic attributes among gender**

The z value presented in Table 2 revealed that all the five socio-economic attributes considered were significantly different between at 0.01 level of probability. Men were found to have a significantly higher score than women in the attributes of income diversity, annual individual income, and material possession. While on the other hand women were found to have a significantly higher score than men in livestock possession and land ownership. The result from Tripura spotted that the entire considered variable except for livestock possession, other variables (income diversity, annual individual income, material possession, and land ownership) showed significant differences between men and women at 0.01 level of probability. Whereas in Meghalaya different scenario was observed, except variable age all the other variables exhibit a significant difference between men and women at 0.01 level of probability. In the study area, farmers rent land on year basis for cultivation from farmer/family that has a government job and don't have much time for agriculture or cultivate land which has been not transferred in their name. In Meghalaya women mostly own land as the state follows matrilineal society. In men headed households, women were dependent on men and are mostly housewives; they rear livestock which serves for their additional income and has very little annual income than their men counterparts. The detail of the finding is presented in Table 2.

### **Gender analysis of dimensions of food security in farm households**

Differences might not be apparent between the gender roles in developed countries. But in a developing country like India gender differences is observed in almost all the field.

**Table.1** Differences in socio-personal attributes among gender

Attributes	Overall			Tripura			Meghalaya		
	Mean score		z value	Mean score		z value	Mean score		z value
	Women (n=160)	Men (n=160)		Women (n=80)	Men (n=80)		Women (n=80)	Men (n=80)	
<b>Age</b>	42.31	46.34	3.10**	41.78	47.94	3.20**	42.85	44.75	1.09
<b>Education</b>	1.48	1.66	2.73**	1.50	1.71	2.29*	1.0	1.61	1.06
<b>Social Participation</b>	0.82	0.99	2.17	0.94	0.78	1.56	1.21	0.70	4.38**
<b>Cosmopolitaness</b>	17.52	26.11	7.44**	16.09	30.08	10.72**	18.95	21.41	1.46
<b>Dietary Diversity</b>	4.11	4.37	2.07*	4.10	4.41	1.70	4.11	4.33	1.17
<b>Micronutrient intake</b>	1.31	1.36	0.75	1.38	1.41	0.38	1.25	1.31	0.68
<b>Access on resources/Assets</b>	12.46	9.88	6.70**	9.09	14.03	9.23**	10.91	10.69	0.46
<b>Control on Resources/assets</b>	4.83	6.39	6.91**	4.18	7.40	10.96**	5.50	5.39	0.39
<b>Decision on food purchase/sell</b>	0.82	0.99	2.17*	0.60	0.93	5.19**	0.68	0.75	1.04

\*Significant at 0.05 level of probability

\*\* Significant at 0.01 level of probability

**Table.2** Socio-economic attributes of an individual respondent

Attributes	Overall			Tripura			Meghalaya		
	Mean score		z value	Mean score		z value	Mean score		z value
	Women (n=160)	Men (n=160)		Women (n=80)	Men (n=80)		Women (n=80)	Men (n=80)	
<b>Income diversity</b>	1.86	2.55	5.55**	1.3	2.4	6.49**	2.41	2.70	1.66
<b>Annual individual income</b>	28441.25	74252.5	5.54**	17170	76922.5	5.64**	39712.5	71582.5	2.52*
<b>Material Possession</b>	3.09	4.06	3.79**	2.49	5.95	14.01**	3.69	2.16	4.80**
<b>Livestock Possession</b>	1.82	1.13	4.09**	2.03	1.86	0.67	1.61	0.39	6.02**
<b>Land Ownership (ha)</b>	0.56	0.37	2.96**	0.14	0.79	8.89**	0.60	0.31	3.63**

\*Significant at 0.05 level of probability

\*\* Significant at 0.01 level of probability

**Table.3** Gender analysis of dimensions of food security

Dimensions	Items	Overall			Tripura			Meghalaya		
		Mean Score		z value	Mean Score		z value	Mean Score		z value
		Women (n=160)	Men (n=160)		Women (n=80)	Men (n=80)		Women (n=80)	Men (n=80)	
<b>A. Availability</b>	1. Enough food available for consumption	0.79	0.81	0.28	0.78	0.80	0.38	0.81	0.81	0
	2. Eat limited variety of food due to lack of resources	0.77	0.77	0.00	0.71	0.71	0	0.82	0.82	0
	3. Food that preferred not available in store/market	0.21	0.16	1.14	0.28	0.13	2.40*	0.15	0.20	0.83
	4. Decision on production	1.98	1.86	1.29	1.8	1.66	0.97	2.16	2.05	0.90
<b>B. Access</b>	1. Access to nutritious vegetable/fruit	0.67	0.79	2.40*	0.59	0.75	2.20*	0.75	0.83	1.16
	2. Access to balance meal	0.44	0.62	3.29*	0.21	0.35	1.94	0.66	0.89	3.52**
	3. Could not eat particular food due to some cultural/traditional restrictions	0.31	0.29	0.36	0.39	0.34	0.65	0.24	0.25	0.18
	4. Economic access to food (decision on purchase/sale of food)	0.64	0.84	4.16**	0.60	0.93	5.19**	0.68	0.75	1.05
<b>C. Use and utilization</b>	1. Avoid particular nutritious food (fruits/vegetables) due to lack of knowledge	0.54	0.51	0.67	0.30	0.55	0.64	0.49	0.46	0.31
	2. Lack of knowledge of nutritious food or balance diet	0.61	0.57	0.79	0.53	0.53	0	0.70	0.61	1.16
<b>D. Stability</b>	1. Adequate access to food during price shock	0.92	0.94	0.88	0.85	0.99	3.27**	0.99	0.90	2.43*
	2. Adequate access to food during conflict and natural disaster	0.76	0.81	1.09	0.85	0.86	0.22	0.68	0.76	1.23
	3. Adequate access to food during financial and economic crisis	0.73	0.83	2.15*	0.76	0.85	1.4	0.69	0.80	1.63

\*\*Significant at 0.01 level of probability, \*Significant at 0.05 level of probability

In the present investigation, there was no significant difference between women and men in the availability, use and utilization dimension of food security.

But a significant difference was observed in dimensions "Access and Stability". However, under "access" dimension item 1 "Access to nutritious vegetable/fruit" (z value=2.40\*), item 2 "access to balanced meal" (z value=3.29\*\*) and item 4 "economic access to food (decision on purchase/sale of food)" (z value=4.16\*\*), showed to have significantly higher in men compared to their women counterparts. While, in the dimension "stability" only item 3 "Adequate access to food during the financial and economic crisis" spotted to have significant differences, in which men were found to be higher than women. Whereas the rest of the items does not show to have significant differences but was somewhat higher for men respondent than women respondent. Except in the items of dimension, "use and utilization" where women respondents were slightly higher than men respondents and the details are shown in Table 3. As per the response from the women respondent, they mostly avoid food, which is unknown to them, as the responsibility of food safety on them and also give an enormous share of their nutritious food to their children and counterparts even though they have access and during a crisis. In Tripura significant difference between men and women at 0.01 level of probability was observed in "Economic access to food" and "Adequate access to food during price shock" while significant difference at 0.05 level of probability was observed in "Food that preferred not available in-store/market. The rest of the items do not reveal significant differences between men and women. Furthermore, the result from Meghalaya showed different pictures, only in "Access to balanced meal" and "Adequate access to food during price shock" spotted that men were

significantly different from women at 0.01 level and 0.05 level of probability respectively. Holmes *et al.*, in 2009 also revealed that women more vulnerable to price shocks and coping mechanisms are limited compared to men. In the study area, women being bounded with household chores and other activities, for which they don't get much time, most of the purchase/sale of the food is carried out by men.

Though eight northeastern states are similar in their geographical features, each state has its uniqueness for being habitat by different ethnic groups, their culture, and tradition. The result from different states can reveal unique and different results.

So, generalization is limited to some extent as the data was collected from only two states Tripura and Meghalaya among the eight northeastern states. The result from the present investigation gave a clear picture that gender difference does not only exist in socio-personal and socioeconomic attributes but also in the dimensions of food security. Significance differences between men and women were mostly observed in access and stability dimensions of food security. From the present finding, it can be suggested that for any planning and implementation of programme or policy the differences in gender the unique need and issue in individual level in farm household should be looked upon and taken into consideration.

Empowering gender through training for cottage industries to improve the income of women, personality development programmes or strategy for building confidence level in decision making, improve bargaining power both socially and economically especially targeting women farmers, awareness of good health to both the gender, and also enhancing women farmer's access to food can help in closing differences between men and women

farmers. In addition, food security can be achieved at national level only when there are gender indifferences, gender balance and food security both in individual and household level.

### **Acknowledgement**

Immense thanks goes to University Grants Commission for providing with fellowship under National Fellowship and Scholarship for Higher Education of ST students scheme which helped in carrying out research work smoothly.

### **References**

Barah, B. C. 2007. Strategies for Agricultural Development in the North-East India: Challenges and Emerging Opportunities. *Ind. Jn. of Agri. Econ.* 62(1): 13-31.

Bridge. 2014. Gender and Food Security towards gender-just food and nutrition security overview report. [https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/5245/IDS\\_Bridge\\_Food\\_Security\\_Report\\_Online.pdf?sequence=3](https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/5245/IDS_Bridge_Food_Security_Report_Online.pdf?sequence=3). Accessed on 13<sup>th</sup> November 2019

Das, R. 2017. Food Productivity and Food Security: an Analysis in the Context of North-East India. *International Journal of Innovative Research in Science, Engineering and Technology.* 6(8): 16500-16504

Holmes, R. Jones, and N. Marsden (2009).

Gender vulnerabilities, food price shock and social protection responses. Background Note. Overseas Development Institute. Pg 1-12.

NCERT. 2017. North East India People, History and Culture. [http://www.ncert.nic.in/publication/Miscellaneous/pdf\\_files/tinei101.pdf](http://www.ncert.nic.in/publication/Miscellaneous/pdf_files/tinei101.pdf). Accessed on 4th November 2019.

Patel, A. 2017. Harnessing Agricultural Potential in North Eastern Region of India. *Agribusiness. India Microfinance.* <https://indiamicrofinance.com/agricultural-in-north-east-india.html>. Accessed on 13th November 2019.

Paul, A. 2014. Why gender inequality and food security go hand-in-hand. *Food Tank. The Christian Science Monitor.* <https://www.csmonitor.com/Business/The-Bite/2014/1219/Why-gender-inequality-and-food-security-go-hand-in-hand>

Rao, N. Pradhan, M. and Roy, D. 2017. Gender justice and food security in India: A review. *IFPRI Discussion paper.* <http://www.ifpri.org/publication/gender-justice-and-food-security-india-review>

Saikia, H. 2011. *Socioeconomic Empowerment of Women in North East India.* Book. Ssdn Publishers & Distributors. [https://www.researchgate.net/publication/270052533\\_Socioeconomic\\_Empowerment\\_of\\_Women\\_in\\_North\\_East\\_India](https://www.researchgate.net/publication/270052533_Socioeconomic_Empowerment_of_Women_in_North_East_India).

### **How to cite this article:**

Kankabati Kalai, Rajesh Singh Sengar and Loukham Devarani. 2019. Gender Analysis of Dimensions of Food Security in Farm Households: A Study from Northeastern India. *Int.J.Curr.Microbiol.App.Sci.* 8(12): 263-269. doi: <https://doi.org/10.20546/ijcmas.2019.812.037>