CHAPTER SIX

SUMMARY, CONCLUSIONS AND SUGGESTIONS

6.1 Summary of the Study:

The present study attempts to look into the food security issue in rural Assam by taking into consideration all the possible dimensions of food security. The present study is very relevant as the state of Assam is lagging behind the other states of the country on many fronts and hence it would be of prime interest to see its relative status in respect of food security. Moreover the studies on food security in Assam till date have mostly focused on the availability dimension and analysis of food security at inter-district level in the state has not been carried out yet. At this back drop, the present study has tried to fill this research gap by analyzing food security situation in Assam through the facets of availability, accessibility and absorption of food.

6.1.1 Findings related to First Objective:

1. The status of food security in rural Assam vis-à-vis to the rest of India is found very miserable. Assam has achieved 13th rank out of the 17 major states with regard to the level of food security in both time periods i.e 2001-05 and 2007-11. This has mainly occurred due to the relatively poor performance of Assam in respect of food availability and food absorption dimension in contrast to the food accessibility dimension. Assam has got lower ranks in case of availability and absorption of food i.e 16th each while its rank in respect of food accessibility is much higher i.e fourth. Ranks of Assam in

respect of food security and its dimensions are found unchanged over two cross section periods.

2. Assam has achieved low level of food security. The performance of Assam is far below than national average in respect of the attainment of food security. Apart from the food accessibility dimension, the performance of Assam in the other two dimensions of food security is found below the national average.

6.1.2 Findings related to Second Objective:

1. Sibsagar is found as the most food secure district in 2001-05 while Nalbari has attained the highest level of food security in 2007-11.Dima Hasao is found as the least food secure district in 2001-05 as well as in 2007-11.

2. On the matter of food availability, Nagaon tops the list in 2001-05 but Barpeta comes first in 2007-11.Sibsagar ranks first in case of accessibility of food in both the time periods and it also tops the list in case of food absorption in 2001-05. However, Nalbari ranks first with regard to absorption of food in 2007-11. Dima Hasao is placed at the bottom with respect to all the dimensions only with one exception in 2001-05 when Karimganj has got the last position in case of food absorption.

3. Sibsagar and Nagaon are found as highly food secure districts and Dima Hasao and Karbi Anglong are found to have low level of food security while the rest twenty districts are in the midst of moderate level of food security in 2001-05. But in 2007-11, the situation changed little bit in the form of emergence of Nalbari as the single most highly food secure district and both Sibsagar and Nagaon dropped into the category of

moderately food secure districts. Thus on the basis of performances of the districts, Assam, on the average, can be called a moderately food secure state.

3. The level of food security achieved by Dhubri, Sibsagar, Nagaon, Jorhat, Golaghat, Darrang, Nalbari, Kamrup, Barpeta, Dibrugarh , Tinsukia and Marigaon is higher than the state average in 2001-05 while it is below state average in case of the other districts. Thus it means that 52.17 percent of the districts in rural Assam have performed better than the state average on the matter of food security while the performance of the rest 47.83 percent districts in this regard is below the state average. In 2007-11, Bongaigaon has replaced Tinsukia as a district performing better than the state average on the matter of food security. The rest of the picture remains same as prevailed in 2001-05.

4. Districts of the state are found to have done well in terms of food accessibility and food absorption but their performance in respect of food availability is quite miserable. This is reflected in terms of relatively lower values of Food Availability Index of the districts over both the cross sections. Even Nagaon and Barpeta which topped the list on food availability rankings in 2001-05 and 2007-11 respectively are having very low index values. Thus it is found that the prospect of food security for the districts in rural Assam is not that bright mainly because of vulnerable food availability situation across the districts.

5. The status of food security in rural Assam has not improved over time although it is seen that there is a statistically significant increase in the level of food absorption.

6.The difference between two extreme states in respect of food availability and food accessibility has declined in 2007-11 while this difference has increased in case of food absorption and overall food security.

7. The values of standard deviations for two cross sections indicate that disparities among the districts on the issue of food security and its various dimensions have declined in 2007-11.

8. It is also found that there is a significant difference in the ranking of the districts between 2001-05 and 2007-11 in respect of food security and its various dimensions.

9. So far as the relationship among various dimensions of food security is concerned, it is found that in 2001-05, the association between food availability and food accessibility and that between availability and absorption of food are moderate and positive while accessibility and absorption of food are found highly positively correlated. In 2007-11, the association between food availability and food accessibility is found positive but relatively weaker in comparison to that of 2001-05.The association between food availability and food absorption is found to be relatively stronger in 2007-11 in comparison to that of 2001-05 while the association between food accessibility and food absorption is found to be relatively weaker in 2007-11 in comparison to that of 2001-05.

6.1.3 Findings of the Third Objective:

1. Assam's per capita purchase of PDS rice in the rural context is lower than national average throughout during the study period.

2. The status of per capita purchase of PDS wheat in rural Assam is found more dismal in comparison to that of rice as no purchase of PDS wheat takes place during 1999-2000 to 2004-05. Even the purchases taking place in this regard in the later cross sections of the reference period are much lower than the national average.

3. Per capita purchase of rice is much higher than that of wheat from PDS in rural Assam during 1999-2000 to 2007-08. The mean difference between per capita purchase of PDS rice and that of PDS wheat is also found statistically highly significant. In line with Khera's framework (2011), it is found that Assam has attained the status of a reviving state with regard to purchase of per capita PDS rice in the rural context from 2006-07 onwards. On the other hand, Assam is a languishing state in respect of PDS wheat purchase as there is not a single instance of PDS wheat purchasing by more than 1 kg per month throughout the reference period.

4. Per capita purchase of rice in rural Assam is higher than that of urban Assam during 1999-2000 to 2007-08. The rural-urban mean difference in respect of per capita purchase of rice is found to be statistically highly significant. Assam is emerging as a reviving state regarding the purchase of PDS rice in the rural context while the situation of urban Assam on this front is a languishing one.

5. There is no rural-urban difference in respect of per capita purchase of wheat in Assam during 1999-2000 to 2007-08. Based on Khera's frame work (2011), Assam is empirically emerged as a languishing state on the matter of purchase of PDS wheat in rural as well as in urban context.

6. The relative status of Assam in comparison to the national level on the matter of diversion of rice is very disappointing as the diversion figures of rice in Assam are found to be much higher from the national average.

7. Diversion figures of wheat are much higher than the national average in almost all the years with little exception in the year 1993-94 where the gap with national diversion figure is small. In fact during 1993-94, only Madhya Pradesh has performed better than

Assam in respect of wheat diversion. However, during 1999-2000 to 2007-08, Assam could not be able to compete with a single state in this regard by any means. Things have improved little bit in 2009-10 with a decline of diversion rate.

8. Leakages from PDS in case of rice and wheat are increasing simultaneously at a great speed. However, diversion of wheat from PDS is more than that of rice in Assam. This implies relatively higher incidence of leakages with respect to PDS wheat. In case of diversion of PDS rice, the variations over time are quite high. Unsurprisingly the variations in the amount of diversion of PDS wheat are low as not much of changes have taken place in the amount of wheat diverted from PDS over the years. One encouraging finding is that diversion of rice has declined by huge margin in 2009-10 as compared to its preceding years. Signs of improvement have also been noticed in respect of diversion of wheat in the recent year.

9. The association between per capita purchase of rice and its diversion from PDS as well as that of per capita purchase of wheat and its diversion from PDS are found negative. However the degree of association is found low in case of purchase and diversion of PDS rice while it is strong in case of that between PDS wheat. This indicates that PDS purchase-diversion relationship in respect of wheat is more serious.

10. It is found from the analysis that the status of rural Assam regarding performance of PDS covering the study period 1999-2000 to 2007-08 is poor in respect of rice, while it is very poor with regard to wheat.

6.1.4 Findings of the fourth Objective:

1. The status of food security at household level in rural Assam is high only by a negligible margin. A separate analysis for Irongmara and Digarugaon shows that the status of household level food security in these two places is more or less same. This is reflected from the insignificant t value which means that there is no significant difference in the level of household level food security between Digarugaon and Irongmara.

2. The inequality regarding food security at household level in case of two extreme households is very high. The inter-household variations in the level of food security are found more or less equal in rural Assam as well as in case of Digarugaon and Irongmara when the analysis is made for the two locations separately.

3. At household level, it is found that availability and accessibility of food are positively and strongly associated. The association between availability and absorption of food is found low and positive. Similarly the relationship between accessibility and absorption of food is also found positive and weak. This is totally in contrast with the result obtained at district level because although the direction of association between various dimensions of food security is found similar at district as well as at household level, the line of demarcation arises in respect of the strength of such association.

4. Estimated regression equations shows that household level food security in rural Assam is positively and significantly influenced by household's asset, education level of the head of the household and type of occupation. So far as the impact of occupation is concerned, it is found that households with non-agricultural occupations and households with a mix of agricultural and non-agricultural occupations are more food

secure in relation to the households with agricultural occupations. Social group, female headed households, experience of the head of the household and household's dependency ratio do not have any significant influence upon the level of household food security in rural Assam.

6.2 Conclusions:

The present study has found that the status of food security in rural Assam vis-à-vis to the rest of India is very disappointing. Assam has achieved 13th rank out of the 17 major states with regard to the level of food security in 2001-05 and 2007-11. The performance of Assam is far below than national average in respect of the attainment of food security. It is mainly because of poor food availability. Inter-district analysis in rural Assam shows that majority of the districts are moderately food secure. The districts are found to have done well in terms of accessibility and absorption of food but their performance in respect of food availability is quite miserable. Thus availability of food is a major concern for the state in order to attain a higher level of food security. The present study has also examined the role of PDS model in meeting the objective of food security in rural Assam. The findings of the study in this regard indicate a poor status of PDS in terms of purchase of PDS rice and wheat. However the diversion of PDS rice in relation to that of wheat is found declining over the years.

The present study has also analysed food security situation at the household level. For this purpose, we have purposively selected two districts viz. Digarugaon and Irongmara. The field survey was made in May-June, 2015. On the basis of the analysis of the household level data, it is found that the status of food security at household level in rural Assam is high only by a negligible margin and it is positively and significantly

influenced by household's asset, education level of the head of the household and type of occupation of the household.

6.3 Suggestions:

The following suggestions have been identified on the basis of the findings of the study.

1. Steps should be undertaken for strengthening the availability and absorption dimension of food security in rural Assam. This is due to the fact that poor relative status of Assam on the matter of food security is mainly caused by miserable condition of food availability and food absorption. The same story prevails for the districts also. Availability of food can be raised by applying more scientific methods of production and making proper utilization of irrigation projects. Government should also provide the easy flow of institutional credit to the farmers so that they can develop a strong infrastructure base, which helps in increasing the level of production and hence an improved situation of food security.

2. Accessibility to safe drinking water must be increased at a great space in order to improve the status of food security from absorption dimension. The govt. should provide credit support to the poor rural households for availing tube well or hand pump. Besides this, various Government organizations and NGOs should come forward in arranging awareness programmes relating to the need of having access to safe drinking water.

3. The poor status of PDS in Assam calls for either controlling the leakages of PDS or the replacement of PDS by cash transfer model. However the choice between these two

options must be made carefully. Since Assam has emerged as a reviving state in terms of per capita purchase of PDS rice, the diversion figures of PDS rice should not distract the govt. from the continuation of PDS immediately. This suggestion is also justified in the perspective of weak and negative association found between per capita purchase and diversion of PDS rice. However if in the long run this association becomes stronger and stronger then the Government must resort to cash transfer model in addressing the objective of achieving higher level of food security.

4. The finding that households with non-agricultural occupations and households with a mix of agricultural and non-agricultural occupations are more food secure in relation to the households with agricultural occupations highlight the importance of creating more jobs and occupational opportunities in other sectors in ensuring higher level of food security at household level. This finding suggests that sole dependence on agriculture centric occupation may not be sufficient for a household to become food secure and hence in the present juncture effort must be there on behalf of the government to uplift and promote the non-agricultural occupations.

6.4 Limitations of the Study:

1. Per capita net availability of food grains could be one of the more relevant indicators of food availability as out of the entire food grain production some part may get destructed due to natural calamities. There is also a possibility of importing some grains to the other states. But unavailability of data on per capita net availability of food grains at state as well as at district level has compelled the present study to rely upon per capita food grain production as one of the important indicators of food availability.

2. Domestic production may not be sufficient to meet all the necessary food requirements in a state or district and under such circumstances the needy state or district may import grains from the other states or districts. Thus food import may be crucial in ensuring or sustaining food security of the states as well as of the districts. However due to unavailability of data on inter-state and inter-district import of food grain, we could not be able to assess the impact of food import on food security.

3. Due to unavailability of data, three food accessibility indicators viz. share of working age population, monthly per capita consumption expenditures and wage rate for casual labourers could not be incorporated in the district level analysis of food security in rural Assam. Also due to the unavailability of district level data on purchasing as well as diversion of PDS food grain, the effectiveness of PDS cannot be empirically examined across districts in rural Assam. The analysis in this regard is confined to rural Assam in relation to the rest of rural India and to whole Assam for various years.

4. Although the study is conducted for rural Assam, the effectiveness of PDS in terms of diversion of food grain is examined for the whole Assam and not for the rural context. This is again primarily due to data limitation. Similarly, the functioning of PDS when examined through a combined analysis of PDS purchasing of food grain and diversion of PDS food grain, the data for the former is referred to rural Assam while that for the later is referred to whole Assam.

5. The present study has not made any attempt to explore the reasons behind low purchase and high diversion of PDS rice and wheat in Assam. Thus there lies a scope of to fill up this research gap in some future studies.

6. Analysis of food security at household level is carried out by excluding the two extreme situations of food security i.e by excluding the cases of highly food secure and poorly food secure districts. Such analysis is justified on the ground that approximately 88 per cent of the districts are found moderately food secure in rural Assam. However in the absence of such finding, one may go for a different kind of analysis by considering all the categories of food secure districts in analyzing the status of household food security.

6.5 Contributions of the Study:

The present research work has enriched the existing body of knowledge from four angles. These are:

1. It has filled up a methodological research gap by contributing in constructing a composite Food Security Index (FSI) along the facets of three important dimensions of food security taken together viz. availability, accessibility and absorption. There is dearth of such exercises in the context of India. This composite index can be used for analyzing the status of inter-state as well as inter-district level of food security.

2. It has analysed the status of food security across various districts of rural Assam under the combined shed of supply (food availability), demand (food accessibility) and absorption dimension of food. There are many existing studies which have analysed the issue in the context of Assam at district level from supply dimension mostly. Though studies confronting all the dimensions of food security in Assam exist at household level, but district level analysis with a combination of all these three dimensions are

almost missing in the literature. The present research work is a significant contribution in this regard.

3. It has analysed the status of PDS in rural Assam both in terms of purchase of food grains from PDS as well as their diversion or leakage from PDS. The analysis is made for this indicators separately as well as combining the both. The empirical finding related to the effectiveness of PDS may show a path whether to continue with PDS in addressing the issue of food security in rural Assam or not.

4. The research work carried out for analyzing food security at household level in rural Assam is done in relation to the findings from analysis of food security at district level.