



**TURMERIC CULTIVATION AND EMPLOYMENT GENERATION OF WOMEN THROUGH CLUSTER BASED APPROACH IN ASSAM**

**Krishnaksi Choudhury**

Research Scholar, Department of Rural Development and Agricultural Production, North-Eastern Hill University, Meghalaya, Tura -794002

**Dr. D.C.Kalita\***

Associate Professor, Department of Rural Development and Agricultural Production, North-Eastern Hill University, Meghalaya, Tura \*Corresponding Author

**ABSTRACT**

In this paper an attempt was made to study the Turmeric Cultivation and Employment Generation of Women through Cluster based approach in Assam. The study was conducted in Balijana block of Goalpara district of Assam covering a total of 140 samples of turmeric growers which consist of 70 each under individual and cluster turmeric growers. The study is based on both primary and secondary data. Development of Turmeric cultivation can be considered as a possible approach to empowerment and employment generation of women through cluster approach. For the women who are engaged in household activities, there is a strong requirement for empowerment through employment generation. Similarly the production of turmeric in Assam was increased up-to 15906 tons in 2014-15. Cluster based approach is one of the process which can lead to empowerment and employment generation of women. Consequently there has been considerable growth of rural women in the state of Assam through Self-Help Group and clustering process.

**KEYWORDS :** Development of turmeric cultivation, Employment generation, Cluster Approach, Empowerment.

**INTRODUCTION**

Turmeric is a spice used commonly by people all over India. It is also an important commercial spice grown in India. Concerned over low agricultural growth rate and low levels of farm income, the Union Agricultural Ministry is working towards a plan to introduce cluster-based farming in the country. The cluster-based approach is aimed at forming a consolidated cultivable holding dedicated to specific food grains, vegetables, spices and condiments, fruits and other horticulture crops (*Leisa India*, Jun 2013).

In the present scenario the cluster concept in agriculture has come up. In terms of taking loan or any kind of micro credit facility is easily available for cluster based approach or we can say in cooperative approach. In rural areas people living below the poverty line are unable to realize their potential. Our traditional agricultural approach does not provide enough chances to the poor to make full use of their abilities. But forming groups of the poor can help them to take part in development activities as well as they can engage in agricultural activities also through which they can earn money for their livelihood.

**Table 1:Area, production and productivity of turmeric in India**

Year	Area ('000 ha.)	Production ('000 tons)	Productivity ('000 tons/ ha)
1950-51	98.00	120.00	1.23
2001-02	162.90	552.30	3.30
2005-06	177.50	846.70	4.70
2009-10	187.53	927.91	4.90
2010-11	232.02	1268.28	5.40
2011-12	237.72	1246.22	5.20
2012-13	192.91	973.09	5.00
C.G.R (%)	11.53*	34.56*	20.65*

**Source: Spice board of India- annual report 2012-13**

**Note: \*-Significant at 5% probability level**

The above table 1 indicates production of turmeric since 1950-51 to 2012-13, which has an increasing trend in the country. The area, production and productivity in India from 1951 to 2013 was showed an compound growth rate of 11.53, 34.56 and 20.65 respectively which was found to be statistically significant at 5% probability level. This indicate the growing importance of turmeric in India.

**Table 2: Area, production and productivity of turmeric in Goalpara district of Assam**

Year	Area (in ha.)	Production (in tonnes)	Average yield (in kg / ha.)
2007-08	240	123	511
2008-09	265	241	908
2009-10	320	206	643
2010-11	435	300	690
2011-12	435	405	930
2012- 13	453	426	940
2013- 14	450	423	940
2014- 15	510	482	945
C.G.R (%)	11.27*	19.34*	7.29*

**Source:** Government of Assam, Directorate of economics and statistic, 2015

Note: \*-Significant at 5% probability level

Table:2 showed that the increasing trend of production in Goalpara district in Assam. The area, production and productivity in in Goalpara district from 2007 to 2015 was showed an compound growth rate of 11.27, 19.34 and 7.29 respectively which was found to be statistically significant at 5% probability level. This indicates the growing importance of turmeric in the Goalpara district.

**OBJECTIVES**

- To see the standard of living of turmeric cultivator and employment generation of turmeric growers through cluster based approach.

**METHODOLOGY**

In the present study Goalpara district of Assam was purposively selected. The present study was comprised of primary data and secondary data. A total of 140 samples farmers who cultivated turmeric were selected randomly for the present study. The sample farmers were taken from Balijana block of Goalpara District, Assam. Since turmeric cultivation is extensively grown in the plain belt of the district. From the block 7 villages were selected randomly. From each village 10 individual and 1 group of people consisting of 10 farmers was selected randomly who did turmeric cultivation in the form of groups (i.e- SHG or Farmers Club) under the cluster approach. Thus a total of 140 turmeric cultivators were selected for the present study. Following methods were used for analysis purpose:

**HUMAN DEVELOPMENT INDEX**

The standard of living of the farm households in Goalpara district and Assam were also determined by constructing the Human Development Index. In constructing Human Development Index, three essential elements of human life namely longevity, knowledge and decent standard were incorporated. Longevity as an indicator of human development captures several aspects of welfare, because of its close correlation with nutrition, health and other biological and social achievements. The relevance of literacy to human development is self-evident.

For measurement of HDI for the district as well as the state, the variables used were per capita Real District Domestic Product (DDP), life expectancy, total literacy, female literacy and male literacy. The DDP per capita is meant to register the command over the resources to enjoy a decent standard of living. The longevity (life expectancy) is clearly valuable aspects of good life. Using the above variables three HDI were calculated as follows:

- HDI I: Income, life expectancy and total literacy
- HDI II: Income, life expectancy and male literacy
- HDI III: Income, life expectancy and female literacy

The computation of HDI requires the calculation of (i) the Life Expectancy Index, (ii) The Index of Educational Attainment, and (iii) Index of Income. The HDI is the average of these three indices and takes a value of 0 and 1. The calculation of above indices is given below.

1. Life Expectancy Index (LEI): For calculation of life expectancy index the following formula was used.

LEI = 
$$\frac{\text{Actual Value of life expectancy at birth} - \text{minimum value of life expectancy at birth}}{\text{Maximum value of life expectancy at birth} - \text{minimum value of life expectancy at birth}}$$

The fixed minimum and maximum value was taken as 25 years and 85 years at birth as established by HDR. The actual life expectancy figure was used for the total population of the state since district wise data were not available.

2. Index of Educational Attainment (IEA): the index of educational attainment was calculated by using the following formula:

IEA = 
$$\frac{\text{Actual value of literacy} - \text{Minimum value of literacy}}{\text{Maximum value of literacy} - \text{minimum value of literacy}}$$

For construction of this index, the fixed adult literacy rate for minimum and maximum was taken as 0 and 100 per cent as established by HDR. The actual value was taken from the district average figure as per 2011 census. Similarly this was done for male and female literacy also.

3. Index of Income (II): The index of income was calculated by the following formula:

II = 
$$\frac{\text{Actual value of per capita real DDP} - \text{minimum value of per capita real DDP}}{\text{Maximum value of per capita real DDP} - \text{minimum value of per capita real DDP}}$$

The actual value for this index was taken as real district domestic product at constant price. The minimum and maximum value of income was taken as PPP\$ 100 and PPP\$ 5448 as established by the HDR for India.

The maximum and minimum value of each variable was chosen from the district figures of the state, however as stated earlier, the life expectancy period of Goalpara district was considered in the present study since the data on life expectancy period of Goalpara district was not available.

The above indices are also called deprivation index.

Then an average deprivation indicator (I) was calculated by the average of these three variables.

$$I_j = (LEI + IEA + II) / 3$$

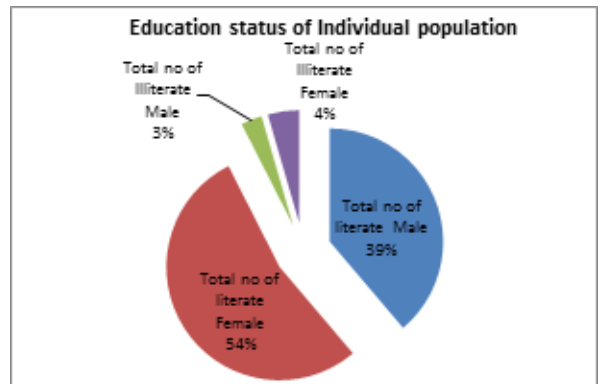
The HDI is 1 minus the deprivation index.

**RESULTS AND DISCUSSION**

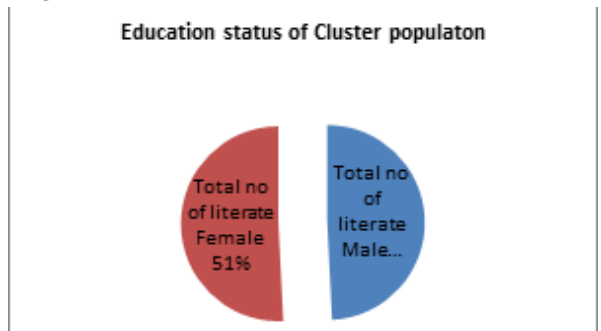
Diagram: 1 & 2, Educational statuses of Individual and Cluster farmers:

In Diagram no 1 & 2, the educational statuses of the individual farmers and Clusters are shown. In first pie diagram results indicating the educational status of individual population living in Balijana Block of Goalpara district, among the respondents 93 per cent was literate and only 7 per cent was found to be illiterate.

**Diagram:1, Educational status of Individual**

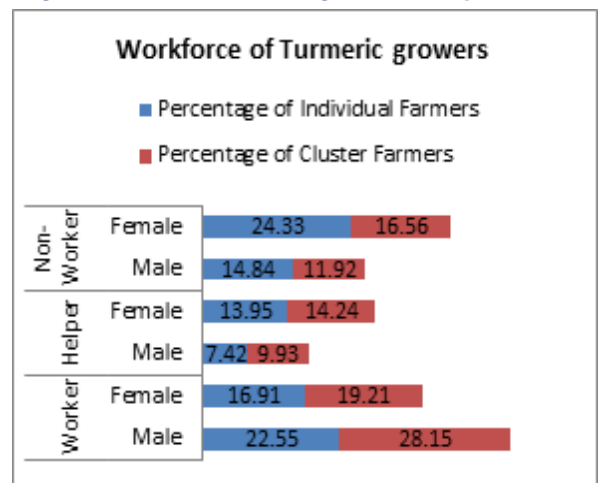


**Diagram:2, Educational status of Cluster**



In the second pie diagram, results indicates the educational status of Cluster population living in Balijana Block, among which cent percent respondents were found as literate.

**Diagram:3 Workforce of turmeric growers in Goalpara:**



The above diagram 3, indicates the workforce of Individual and Cluster turmeric growers. The results showed that in case of worker and helper number of female and male turmeric growers was high in cluster cultivation.

#### Human Development Index:

HDI for the district of Goalpara and the state of Assam are discussed in the sub-section as a measure of standard of living of the population.

Table 4 presents the variables that go into the making of indices of deprivation. From the values of this table, the deprivation indices were constructed from the maximum and minimum value chosen in the district and state. The deprivation indices are presented in Table 5.

Based on the consideration of data availability the HDI was constructed using income, life expectancy and total literacy. The Table 6 presents the HDI values for Goalpara district and the state. The table revealed that Assam had a HDI value of 0.41 and the district Goalpara had a HDI value of 0.43. The table further revealed that the HDI value of Goalpara district was higher than the state. This value indicated that the standard of living of people of Goalpara district was above the state level.

**Table: 4. Literacy rate, Life Expectancy and Real Per Capita Income of Assam and Goalpara District**

Particulars	Literacy rate (per cent) (2011 census)	Life expectancy at birth (years)	Gross district domestic product (PPP \$)
Assam	72.19	63.9	143175
Goalpara	67.37	63.9	143175

**Table: 5. Deprivation Indices of Assam and Goalpara District**

Particulars	Literacy rate	Life expectancy	Income
Assam	0.72	0.65	0.39
Goalpara	0.67	0.65	0.39

**Table: 6. Human Development Index of Assam and Goalpara district**

Particulars	HDI
Assam	0.41
Goalpara	0.43

#### CONCLUSION

The above discussion highlighted the fact that there was an impact of cluster approach on income and employment of turmeric growers. All the increase in income and employment of cluster turmeric growers over individual turmeric growers was statistically significant at 5 per cent probability level. The standard of living of turmeric growers under cluster turmeric growers based on head count ratio was better than that of individual turmeric growers, and also HDI value of Goalpara district was higher than that of state, which indicated that the standard of living of people of Goalpara district was above the state level.

#### REFERENCES

- Dixit, S., Gopinath, K.A., Kiran, L.U. and Anuradha B., 2013. Linking markets for better income. *Leisa India*, 15(2): 9.
- Dubey, R., Patel, A., Chourasia, A.K. and Gokhale, M., 2013. Devpasli, A tribal farmers' cooperative. *Leisa India*, 15(2): 9.
- Jha, A.K. and Deka, B.C., 2012. Present status and prospects of ginger and turmeric in NE States. PP: 4.
- Mohammad, A., Raza, U., Iqtidar, M., Wagar, M., Mehboob, I. and Hamid, S., 2014. Impact of microcredit scheme on socio-economic status of farmers: A case study of PRSP in Gujranwala district. *South Asian Studies*, 29(1).
- <http://databank.nedfi.com/content/horticultural-crops-0>. Accessed on: 13.08.2016.
- <http://www.indianspice.com/sites/default/files/majoritemwiseExport2016/pdf>. Accessed on: 13.08.2016.