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Factors and Impact of Rural Out-Migration in Assam

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Abstract*: The present study attempts to measure the factors of rural out-migration and to assess the impact of rural out-migration on agriculture mainly on labour availability, crop yield and farm income on agriculture in origin areas of migration mainly of the Scheduled Tribes (ST) and Non-ST communities in Dibrugarh district, Assam due to the fact that there is continuous decline in agricultural cultivators, increase in the slum population and increase in the unemployment rate. A total of 150 samples were collected from the farm households with migrants for more than one year. The rural out-migration from the study areas were mainly dominated by male and mostly by married male migrants of the age-group of 25-34 years old with a monthly income in the range of ₹ 10,000-15,000 in the destination. The push factors such as unemployment, crop failure, lack of unemployment opportunities and pull factors such as better wage, continuous income etc play an important role in the rural out-migration. However, the ST community opines that soil erosion and poor housing condition is a major factor of rural out-migration as they reside near the river Buridehing and flood damages the houses and erodes the soil of the homeland areas of the houses that are just living beside the river and as result of which their homeland area decreases year after year. The ST people migrate to far off places whereas the Non-ST people migrate within the states of the study area. Remittances and the net sown area are the major factors of the impact on agriculture. The impact of rural out-migration is felt in negatively on the labour supply and positively on increase in the land area, increase in food crop production and vegetable production and increase in the flow of income of the household. The Non-ST community find tea plantation is an additional source of income for sustainable living. Migration can be checked if more focus is given on the creation of small and cottage industries along with the optimum utilization of the agricultural resources. Lastly, area-specific programme should be launched to absorb the local skill and unskilled people.

***Keywords*: rural out-migration, agriculture, logit regression, net sown area.**

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I. INTRODUCTION

The rapid decline in agricultural employment along with an increase in non-farm employment was observed during the period of 2004-05 in India (Parida, Mohanty, & Raman, 2015). The sharp rise in the output and employment in the non-farm sector in the urban areas created an exodus of rural people to the urban areas in search of jobs (Mehrotra, Gandhi, Saha, and Sahoo, 2013). The major factors of such migration are: increasing rural-urban disparities, fragmentation of land holding, increasing population pressure at the household level (Haberfeld, Menaria, Sahoo, and Vyas, 1999), increasing agricultural wage, crop loss, soil erosion, flood, lack of alternative employment opportunities (Das, 2015) and the increasing education level. The rural-urban migration affects both the place of origin and destination both positively and negatively simultaneously (Mitra, 1990). It helps accelerating the destination area development and at the same time, creates overcrowding, increase unemployment rate and increase slums areas (Agesa and Kim, 2001). At the place of origin, it creates shortage of labour supply, specially young labour in the agricultural production (Lipton,1980) and positively it helps the migrants household to increase their household level of income and assets accumulation through remittances (Sagynbekova, 2017). Jokisch (2002) and KC et.al (2017) found diversion from agricultural use to domestic asset creations. Taylor et.al (2003) observed that the decline in yield in the rural migrant household due to loss of labour as a result of rural out-migration is partially compensated by the remittances sent by the migrants and reduction in crop yield due to rural out-migration is compensated in the long run leading to investment in agriculture (Haas, 2001). Fasoranti (2009) in his study in Nigeria found that migration created more agricultural land space for cultivation which ultimately brings about enlarge cultivation and finally rise in crop yield. Haberfeld et.al (1999) found in his study in Dungarpur district of Rajasthan, India that every month of the migrant worker increases the household annual income by 7% and every hectare of arable land contribute 16% to household income in the source area. Deshingkar (2004) concluded that loss of labour due to rural out-migration may or may not decrease the productivity of agriculture in Asia; remittances probably can or cannot enlarge the accessibility to assets through alleviating credit constraints which probably can or cannot increase the productivity of agriculture and household earnings.

Being a major economic issue with far-reaching multiple impacts on the economy as a whole both in short and long run, the study attempts to measure the factors of rural out-migration and to assess the impact of rural out-migration on agriculture mainly on labour availability, crop yield and farm income.

II. METHODOLOGY

This study is primarily based on the primary data collected from Barbaruah Block of Dibrugarh district, Assam with a sample size of 150 through multi-stage sampling method[1]. A total of 150 samples have been collected. Data were collected from those farm households who have out-migrants from their household for more than one year to the urban areas and at the age-group of 15 to 55 years old because people below the age of 14 who even migrates with their family members for work are not legally allowed to do any manual work. Secondly, the upper age limit is preferred to be taken as 55 as beyond 55 people may contribute for the household work but generally do not get any opportunity to work in urban areas in comparison to the young. As Assam is an agrarian state and the rural population are mainly dependent on agriculture for their livelihood. The study area is considered due to the following facts. According to the Census of India (2011), about 81.62% of the population in Dibrugarh district of Assam lives in rural areas.

There is a continuous increment of urban population in Dibrugarh district mainly from the rural areas due to the rapid expansion of industrialization and urbanization. The continuous increase in the number of migrants to Dibrugarh MB + OG Town (MB=Municipal Board, OG= Urban Outgrowth) has increased the number of slums population and makes it among the highest in all Assam (Dibrugarh MB + OG Town, 27089) which is a serious issue for the economy of the city and the state and also for the government. According to Assam Human Development Report (2014) the unemployment rate is highest in Dibrugarh district (19.4%) among all the districts of upper Assam and is the second highest among all the districts of Assam next to Cachar district (20.5%). The percentage of cultivators in Dibrugarh district declined from 33.93% of the total population in 2001 to 24.12% of the total population in 2011 and percentage of agricultural labourers decreased from 15.42% of the total population in 2001 to 10.92% of total the total population in 2011 (Census of India, 2001, 2011). Besides this, Dibrugarh district has highest school drop-out rate (47.41%) in rural areas to support earning of household among upper Assam districts of Jorhat, Dhemaji, Lakhimpur, Golaghat, Charaideo, Majuli, Sivasagar and Tinsukia according to Assam Human Development Report (2014). The lack of irrigation facilities, crop loss due to damage by flood every year increases the risk burden of the rural household. This forces the rural people to migrate to the cities. The perceptions of the SC and ST community on the push and pull factors have been tested for their statistical significance.

III. RESULTS AND DISCUSSION

About 62 percent of the sample households have migrated to south Indian states such as Kerala, Chennai and Karnataka (Bangaluru). In Bangaluru and Chennai the migrants are mainly engaged in jobs like Security guard, driver, delivery boy, construction worker, worker in automobile parts making factory and manpower supplier and in Kerala they were engaged as a worker in the plywood industry. The local labour in Kerala are mainly demanding more wages and most of the local labour migrate to the West Asian countries where the wage is higher than the local wage. Majority of the migrants' worker from the study area in Kerala are engaged in paper and plywood industry and very few in the coke industry. Because of shut down of plywood industry in Assam and the growing up of plywood industry in Kerala mainly attracts the workers who are working in the shutdown plywood industry in Assam (Peter & Gupta, 2012). Guwahati city is the most developed city in the Assam and among the North-Eastern states. Here, the migrant workers from the study area are mainly engaged in jobs like business, driver, mechanic, construction worker, welder, carpenter and workers in hotels, shops and showrooms. Due to develop transportation it is easier for the migrants to travel. In case of Digboi, the migrants are mainly attracted to migrate due to the contacts jobs in the oil refinery mainly of cleaning the machinery units and of security guard of various industrial units, godowns, store room of various industries and showrooms. In Namrup, majority of the migrants' workers are engaged as a home guard and few as a driver of companies**.**

The households who have marginal size of landholding, less household income and have more number of members in the household generally send the more number of labour persons from the household to the urban areas in order to increase the household income level. The Table 1, shows that 90.7% of the migrants households send at least 1-2 members from the household to work in the urban areas to increase the household income. In a household who have more than 5 members in the household and mostly by the joint family are capable of sending 2 or more migrants from their household. The age-group of the migrants mainly reflects about which age-groups are more prone to migrate from rural areas to the urban areas. Besides this, the age-group of the migrants also reflects about the availability of what age-group of the labour force is left in the origin areas. About 54.7% of the migrants in the study fall in the age-group of 25-34 and the second highest group is 30.7% which is in the age-group of 15-24. Mainly young able-bodied are demanded more in the urban areas that's why rural young people mainly migrate after completing high school level and secondary level of education in search of jobs in the urban areas to raise the level of household income, for their own better future and for a regular and stable source of income.

[1] Multi-stage sampling technique was used and data were collected with the help of questionnaire. From the 13 Gaon Panchayats, 3 Panchayats having 75 and above percentage of ST population to total population and households have been selected for the rural sample. From each Panchayat, one village is selected which has the highest number of ST population and households. The selected villages are Lepetkatta Kachari Gaon of Duliakakoti Panchayat, Lezai Miri Gaon of Kalakhowa Panchayat and Modhupur Thakera Phukuri F.V. of Garudharia Panchayat. For comparative study, 3 villages having no ST population are selected. They are Konwar Handique Gaon of Barpathar Panchayat, Suba Chuk Gaon of Garudharia Panchayat and Bali Gaon of Kutuha Panchayat.

The majority 95.3% of the migrants in the study areas were male migrants and in the age-group of 25-34 years old (54.7%). In the origin place of migration most of the migrants households is left with wife along with their children and old parents.

Monthly income of the migrants ranges from ₹ 5000 to 25000. About 54.0% of the migrants monthly income is in the range of ₹ 10000-15000 and 28.7% is in the range of ₹ 5000-10000 which reflects that majority of the migrants migrate to the urban areas in search of monthly income of ₹ 5000-15000 which is at least a stable source of income, unlike the agricultural income which is low due to marginal size of landholding, seasonal and unstable due to crop loss damaged by flood. Majority of the migrants have education of high school level and higher secondary level, therefore, are not competent of high ranking jobs and high salaried jobs in the urban. Most of the migrants are unskilled. Monthly income of ₹ 15000-20000 and from ₹ 20000-25000 are only 14% and 3.3% mostly by the migrants who have education level of degree level and are in a higher position in company jobs than high school level migrants of company worker and mainly by businessman.

making and plywood industry mainly in the destination of Chennai, Bangalore and Kerala. From the Table 1, it is observed that the majority (55.3%) of the migrants' years of migration in the destination is 3-4 years. As the period of stay increases in the destination, the migrants come to know about the new job opportunities where working condition and wages is comparatively better than their earlier working condition. Besides this working in the same industry or profession, the skills of the migrants' increases and some got promotion to higher ranking jobs.

A. Dominant Push and Pull Factors of Rural Out-Migration

The push factors of migration mainly force the people to move out from their place of residence to other places. From the Table 2, it is observed that the highest percentage of reasons of push factors of rural out-migration in the study area is unemployment (84.7%) followed by crop failure (82%), lack of alternative employment opportunities (78%), low household income (77.3%), increase household or family burden (61.3%), scarcity of land (55.3%), poor housing condition (32%) and soil erosion (13.3%). The difference of opinion on poor housing condition and soil erosion between the ST and Non-ST communities is significantly different.

Table: 1 Migrants Socio-Economic Status

Category		Number	%	Category		Number	%
Number of Migrants	1-2 Members	136	90.7	Place of Destinations	Bangalore	27	18
	2 or More Members	14	9.3		Chennai	31	20.7
Marital Status	Married	86	57.3		Dibrugarh	19	12.7
	Single	64	42.7				
Years of Migration	1-3 Yrs	65	43.3		Digboi	15	10
	3-5 Yrs	63	42		Guwahati	28	18.7
	>=5 Yrs	22	14.7		Kerala	18	12
Age Groups of Migrants	15-24 Yrs	46	30.7		Namrup	12	8
	25-34 Yrs	82	54.7	Occupations of Migrants	Business	10	6.7
	35-44 Yrs	19	12.6		Company Worker	58	38.7
	45-54 Yrs	3	2		Construction Worker	12	8
Migrants Monthly Income	₹ 5000-10000	43	28.7		Contact Worker	10	6.6
	₹ 10000-15000	81	54		Driver	7	4.7
	₹ 15000-20000	21	14		Security Guard	23	15.3
	₹ 20000-25000	5	3.3		Workers in Hotels, Shops, Malls	19	12.7
Education Level of Migrants	Upper Primary	4	2.7				
	High School	108	72				
	Higher Secondary	29	19.3		Self-Employed	11	12.7
	Degree Level	9	6				

Source: Author's Calculation from Primary Data

About 57.3% of the migrants are married. The low income from agriculture due to marginal size of landholding besides very less non-farm employment opportunities in the rural areas forces the household to send at least one of its family members to work in the urban areas in order to increase the household level of income and to reduce the household risk burden. Majority of the migrants 38.7 % in the urban areas are engaged in a private company as a worker mainly in car part making industry, bike parts making industry and in paper

Crop failure is the second major reason of rural out-migration in the study which is mainly seen due to flood which occurs continuously years after year and attacked by wild animals (elephants and monkey) coming from the nearby Jokai Rain Forest. Most of the migrant household's cultivable lands in the origin were in the low lying and are being affected by continuous flood. Besides farming, very few rural people are engaged in activities like bamboo and cane product making,

Table: 2 SC and ST Community Perception on Push Factors of Rural Out-Migration

Push Factors of Rural Out-Migration	Types of Community				Total (150)		Chi-Square
	ST (75)		Non-ST (75)				
	N	%	N	%	N	%	
Crop Failure	63	84	60	80	123	82	χ^2=0.407, df= 1, p=0.524
Poor Housing Condition	48	64	0	0	48	32	χ^2=70.588, df=1, p=0.00
Soil Erosion	20	26.67	0	0	20	13.3	χ^2=23.077, df=1, p=0.00
Scarcity of Land	40	53.34	43	57.34	83	55.3	χ^2=.243, df=1, p=0.622
Unemployment	64	85.34	63	84	127	84.7	χ^2=0.51, df= 1, p=0.821
Lack of Alternative Employment Opportunities	60	80	57	76	117	78	χ^2=0.350, df= 1, p=0.544
Increasing Household or Family Burden	46	61.34	46	61.34	92	61.3	χ^2=0, df= 1, p=1
Low Household Income	59	78.67	57	76	116	77.3	χ^2=0.152, df= 1, p=0.697

Source: Author's Calculation from Primary Data; N= Number

Table: 3 SC and ST Community Perception on Pull Factors of Rural Out-Migration

Pull Factors of Rural Out-Migration	Types of Community				Total (150)		Chi-Square
	ST (75)		Non-ST (75)				
	N	%	N	%	N	%	
Higher Wage	71	94.67	69	92	140	93.3	χ^2=.429, df= 1, p=0.513
Better Income Earning by Migrants from Same Village	63	84	52	69.34	115	76.7	χ^2=4.509 ,df=1 ,p=0.034
Regular Monthly Income	62	82.67	62	82.67	124	82.7	χ^2=0.00 ,df=1 ,p=1
Large Number of Industries	66	88	56	74.67	122	81.3	χ^2=4.391, df=1, p=0.036
Short Distance	20	26.67	51	68	71	47.3	χ^2=25.700, df= 1, p=0.00
Same Language and Culture	20	26.67	51	68	71	47.3	χ^2=25.700, df= 1, p=0.00
Own Settlement	32	42.67	31	41.34	63	42.0	χ^2=0.27 ,df= 1 ,p=0.869
Better Employment Opportunities	63	84	57	76	120	80	χ^2=1.500 ,df= 1 ,p=0.221

Source: Author's Calculation from Primary Data; N= Number

local liquor selling, small vendor shop, pickle making and handloom. Majority of the migrant household in the study area are engaged in farming only. Low household income is the fourth major reason of rural out-migration.

Due to the marginal size of landholding, increasing family members in the household and lack of alternative employment opportunities mainly results in low household income. To support the family and maintains the increasing household expenditure on food and other items mainly the male members of households migrate to the urban areas in search of jobs. Scarcity of land is the next push factors of rural out-migration. Scarcity of land is mainly due to increasing the size of the family members and partition of land as the joint family goes for separation which further goes for separation generation after generation and the landholding decreases. The ST communities in the study area are residing near the river Buridehing and flood damages the houses and erodes the soil of the homeland areas of the houses that are just living beside the river and as result of which their homeland area decreases year after year.

The pull factors of migration in the destination mainly attract the migrants to migrate to that place which is mainly the urban places. The Table 3 shows pull factors that attracts the rural people in the study area to migrate to the urban places were higher wage (93.3%) followed by regular monthly income (82.7%), large number of industries (81.3%), better employment opportunities (80%), better income earning by migrants from the same villages (76.7%), short distance (47.3%), same language and culture (47.3%), own settlement (42%).

Higher wages and regular monthly income mainly attracts the rural areas people to migrate to the urban areas because income earned from agriculture is seasonal and quite low as compared to non-farm employment in the urban areas.

From Table 3, it is observed that there is significant difference in the opinion on better income-earning, large number of industries, short distance and same language between the ST and Non-ST communities. The differences are mainly seen because in the study area ST migrants are migrating to long-distance mainly from one state to another mainly in the states like Tamil Nadu, Karnataka, and Kerala. Whereas, the Non-ST communities in the study area mainly migrate to short distances urban areas within the state. Besides this, there is very less number of migrants from the Non-ST community villages to urban places in other states of India in the study areas because of which the demonstration effect of migration is very less and as a result, there is less number of long-distance rural out-migration. The short distance also has advantages of coming to their home in the origin during the time of emergency, can send remittances by friends, relatives and by migrants' themselves. Beside this migration within the state also has the advantage of communication which has the same language and culture.

B. Impact of Rural Out-Migration on Agriculture in the Area of Origin

To estimate the impact on agricultural performance in the place of origin due to rural out-migration, logistic regression model is used. Three alternative methods have been used to check the good fit of the model. To test whether the overall models coefficients are significantly different from zero, the omnibus test is conducted. The test hypothesizes that at least there is one variable whose coefficient is different from zero (H0: The coefficients of all variables are zero; H1: At least one coefficient variable is different from zero**).** In all the three methods (Table-4) the overall model coefficients are significant. The regression equation takes the form as:

$$ln\left(\frac{\hat{p}}{1-\hat{p}}\right) = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 \dots\dots + b_nx_n + e_i ----(1)$$

$\hat{p}$ is the expected probability of the outcome is present. x_i independent variables.

The next step is to check whether the model fits the data and therefore Hosmer test is done where H_0: The model fits the data and the alternative is model fails to fit the data. The dependent variable is the response of the respondent in the form of yes and no (taking the value 1 or zero). The independent variables number of migrants from the household (**migno**); years of education of the migrants (**migedu**); monthly income of the migrants (**income**); net sown area (**nsa**); amount of remittances send by the migrants (**rem**);: years of migration (**yearsofmig**); marital status of the migrants (**marital**). On the basis of the omnibus test in the enter method except for net sown area all other variables coefficients are insignificant.

In the second method (forward stepwise conditional method, Table-5.1) two alternative models is considered, in the first Step 1 model considered *remittances as a significant* variable that affects agricultural performance and the model itself drops all the other variables whereas, in the second Step it considered *net sown area and remittances as a significant variable* that affects agricultural performance and the model drop the other variables itself.

In the third method (forward stepwise likelihood method, Table-5.2) two alternative model is considered, in the first Step, *net sown area and remittance* are considered as a significant variable for affecting agricultural performance and in the Step 2, it considered only remittances as a significant variable that affects agricultural performance and the model itself drop all the other variables.

The model fitting the data is tested by the Hosmer and Lemeshow test in which H_0= model fits the data. In the enter method χ^2=9.072, p (.336) > 0.05 and hence the null is accepted i.e. the model fits the data. In the forward stepwise conditional methods in the first Step 1 model χ^2=6.650, p (.575) > 0.05 and in the second Step 2 model χ^2=6.332, p (.610) > 0.05 and hence in both the model the null is accepted i.e. the model fits the data but compared to first model the probability value is more in the second model. In the forward stepwise likelihood method, in the first Step 1 model χ^2=6.650, p (.575) > 0.05 and in the second Step 2 model χ^2=6.332, p (.610) > 0.05 and hence in both the model null hypothesis is accepted i.e. the model fits the data but compared to first model the probability value is more in the second model.

The power of explanatory variable explaining the dependent variable is tested by Nagelkerke R Square in which value from 0.2-0.4 is highly satisfactory. From all three alternative methods, forward stepwise conditional method's second model is considered because in this model the probability value, Nagelkerke R square value and the explanatory variable which are significant in affecting agricultural performance is more as compared to the other models in the three alternative methods. Hence, net sown area and amount of remittance are statistically significant for influencing the positive impact on agriculture. Higher agricultural net sown area has important implication for the migrant households. Further, there is a significant decline in the labour availability which is mainly because of migration of family from the household to urban areas. There is mainly more shortage of labour by the migrant households who have only two working members in the household for cultivation purpose before migration and after migration of one of its family labour from the household there is only availability of one labour in the household for cultivation and other household activities. The migrant households who have more than one family member migrating from the rural to the urban areas and migrants whose monthly income is more than ₹ 15000 per month are able to send more remittances back to the households in the origin which helps the migrant household to purchased new land for cultivation purpose. The migrants household income from agriculture, non-farm income and the regular monthly remittances send by the migrants together with the savings of the households help migrant households to increase their cultivable land area. Those households who do not have the ability to purchase new agricultural land, having marginal land and have large family members in the households to fulfill the food demand for the entire year take leased-in land with the help of remittances send by the migrants.

Now the impact of migration is particularly explained with reference to labour availability, change in agricultural cultivable land, change in livestock holding and farm income. The indicators are compared before and after the migration take place. From the Table 6, it is observed that the area of cultivation of the migrant household increased after migration of family member from the households. There is a significant improvement in the mean value of cultivated area before migration increased from 2.8900 *bigha*[2] to 3.1500 *bigha* after migration t-value (5.424) it may be due to of hiring leased-in land and purchasing of new cultivable land.

Table: 4 Omnibus Test of Test Model Coefficients of Three Methods

Enter Method (1)				Forward Stepwise Conditional Method (2)		Forward Stepwise Likelihood Method (3)	
Step 1		Chi-square	Sig.	Chi-square	Sig.	Chi-square	Sig.
	Step	35.960	.000	Step	19.993	19.993	.000
	Block	35.960	.000	Block	19.993	19.993	.000
	Model	35.960	.000	Model	19.993	19.993	.000
				Step	13.432	13.432	.000
				Block	33.425	33.425	.000
				Step	19.993	33.425	.000

Source: Author's Calculation from Primary Data

Table: 5.1 Coefficients of Variables Forward Stepwise Conditional Method

Forward Stepwise Conditional Method			
	Var	B	Sig
1step	C	-1.583	0.094
	rem	0.15	0.000
2 step	C	-4.216	.002
	nsa	1.085	.003
	rem	.15	.002
Step 1	Hosmer and Lemeshow Test: ChiSquare (6.650); p (0.575) Nagelkerke R square (.270)		
Step 2	Hosmer and Lemeshow Test: Chi-Sq (6.332) p (0.610) Nagelkerke R Square: (.432)		

Source: Author's Calculation from Primary Data

Table: 5.2 Coefficients of Variables Forward Stepwise Likelihood Method

Forward Stepwise Likelihood Method			
1 step	Var	B	Sig
	c	-1.583	0.094
	Nsa	1.085	0.003
	rem	0.21	0.000
Step 2	C	-4.216	0.002
	rem	0.17	0.002
Step 1	Hosmer and Lemeshow Test: Chi-sq: (6.650); p (0.575) Nagelkerke R Square (.270)		
Step 2	Hosmer and Lemeshow Test: Chi-Sq (6.332) p (.610) Nagelkerke R Square (.432)		

[2] 1 bigha equal to 0.1337803776 hectare

Table: 6 Paired t-Analysis of Rural Out-Migration on Agriculture

Items	Pre Migration (Mean Value)	Post Migration (Mean Value)	t-Value (p-Value)
Area Cultivated (in bigha)	2.8900	3.1500	5.424 (0.000)
Labour Availability (in person)	3.9400	2.8400	-41.770 (0.000)
Value of Paddy Cultivated (in ₹)	20650.9333	25213.6667	3.891 (0.000)
Vegetables Cultivated Value (in ₹)	1158.3333	1238.6667	3.756(0.000)
Livestock Value (in ₹)	20970.2667	26989.6000	12.409 (0.000)
Tea Value (in ₹)	466.6667	3383.3333	5.459 (0.000)
Farm Income (in ₹)	33707.1333	44764.7333	8.722 (0.000)

Source: Author's Calculation from Primary Data

Source: Author's Calculation from Primary Data

The land is mainly purchased by the migrant households who have more than one number of migrants from the household, having migrants monthly income of above ₹ 15000 and having one government employee in the migrants households. The increased in cultivated area is mainly used

Table: 7 Adaptation of Tea Plantation by Migrants Households in Origin

Tea Garden Plantation as a side Income	Types of Community				Total (150)	
	ST (75)		Non-ST (75)			
	Frequency	%	Frequency	%	Frequency	%
Yes	8	10.7	17	22.7	25	16.7
No	67	89.3	58	77.3	125	83.3
Total	75	100	75	100	150	100

Source: Author's Calculation from Primary Data

for paddy cultivation and vegetables cultivation. The remittances send by the migrants help in hiring of labour and tractors for agricultural purposes. Besides hiring of labour, there is exchange of labour to labour system in which the neighbor helps each other in planting and harvesting agricultural crops of each other in which no monetary wage are paid and only labour to labour are exchanged and is mainly prevalent among the ST communities than Non-ST communities in the study areas.

From the Table 6, it is observed that the mean value for the paddy (*Sali and Ahu*) cultivated value has significantly increased from ₹ 20650.9333 before migration of family member from the household to ₹ 25213.0667 after migration of family member from the household. The purchasing of new land is mainly seen in those migrants households whose family member(s) have migrated for more than 3 years, having monthly income of more than ₹ 15000 and of households having one family member in the government jobs. As far as the vegetables are concerned (potato, cauliflower, broccoli, cabbage, tomato, pea, brinjal, carrot, bitter gourd, bottle gourd, pumpkin and sweet potato) the t-value (3.756) also shows a positive difference between the two periods of migration. The remittances send by the migrants to the household in the origin not only helps in financing day to day expenditure of the household but also helps in growing vegetables which are mainly good source of income. Through the remittances, the migrants' households are able to buy high yielding variety of vegetable seeds, fertilizer and pesticides. The vegetables are yield within a short span of time compare to paddy cultivation. Besides this, vegetables can be grown within a small plot of cultivable land which is easier to maintain. The locally produced vegetables are more demanded in the market and have better prices. The market nearest to the study area is *Barbaruah* market and the Dibrugarh town market where the vegetables produced by the migrants households are sold easily.

In the study area, all the migrant's households rear animals and fowls for their earning. From Table 6, it is observed that the mean value of the livestock possessed by the migrants' household which was ₹ 20970.2667 before migration increases to ₹ 26989.6000 after migration. The remittances send by the migrants helps the household in purchasing livestock animals. The main animals and fowls reared by the migrants household are cows, buffalo, duck, chicken, goats, pigs and ox. In the majority of the migrants' households of the ST communities pig are the most reared animals because of its higher price value compared to other animals reared by the households. Pig is more demanded in ST communities because in rituals and ceremonial activities of the household pig is required besides other animals like chicken and fish. Because of this every households rear at least one or two pigs. Buying of pigs from the market for rituals and ceremonial activities by the poor migrants household it is costlier for them because of which they rear piglets which has a low price. Beside this pigs is easily sold in the market and a good amount of income can be earned from it because of its higher price. Goats rearing are quite low in both ST communities and Non-ST communities. They are reared for commercial purposes only. The livestock helps the migrants' households in earning a good amount of earning besides income earning from paddy and vegetable cultivation. For feeding the livestock the migrants' households do not buy any fodder from the market they give locally homemade fodder of the dried paddy plants, rice husk and wastage of vegetables and food items.

As the majority of the migrants households in the study area have a marginal size of landholding and of low lying agricultural land because of which there is frequent damages of their paddy crop by floods every year. Due to lack of non-farm employment opportunities in the rural areas the households in the rural areas have no option rather than to do agricultural activities or to migrate to towns in search of non-farm jobs and higher income. The damage of their crop by floods and wilds animals led to food scarcity and the income from tea cultivation along with the remittances money send by the migrants helps the migrant households in fulfilling the food demand and other expenditure of the households at the time of emergency. Most of the migrant households have 0.5-1 *bigha* of tea garden and earn ₹ 17500-35000 yearly. The migrants' households do not hire labour for plucking green leaf, spraying and other activities in the tea garden. All the works are done by family labour only. Besides this, the tea growers of the migrants households do not have any proper training of tea cultivation. From Table 6, it is observed that the mean value of the tea crops rises from ₹ 466.667 before migration to ₹ 3383.3333 after migration of family member from the households. From the Table 7, it is observed that there is a significant difference between the ST and Non-ST communities in the change in the productivity of tea land. The Non-ST Communities are planting more tea garden because the Non-ST villages have more suitable land available in the village for tea cultivation. As the majority of the ST migrants, households areas are in low lying areas and the area available to do any activities close to the households area are also in the low lying areas because of which tea plantation is not suitable for the ST migrants' household.

The farm income of the migrants' households mainly increases after migration of family member from the households to the urban areas. From the Table 6, it is observed that the mean value of farm income of the migrants' households before the migration of family member was ₹ 33707.13333 increased to ₹ 44764.7333. The t-value (8.722) also shows a positive difference between after and before the migration period of family member from the households. The farm income of the migrants' households mainly increased due to increased in agricultural cultivable land, increased in livestock numbers, increased in vegetable production and tea land garden. The remittances send by the migrants along with households earning from agricultural activities and non-farm income helps the households in purchasing new land, increasing the number of livestock and helps the households in increasing their farm incomes.

IV. CONCLUSION

Rural out-migration is a serious issue of academic concern. The present global scenario is a burning example of this problem. The empirical research on factors and impact of rural out-migration in agriculture from the study areas were mainly dominated by male and mostly by married male migrants. The dominant age-group of the migrants is mainly seen in the age-group of 25-34 years old (54.7%) and in the age group of 15-24 years old (30.7%) which reflects that mainly the young able labour force is migrating and in the origin areas labour force is left in the age-group of above 35 years old mainly by migrants wives along with their children and old parents. The push factors such as unemployment, crop failure, lack of unemployment opportunities and pull factors such as better wage, continuous income etc play an important role in the migration. Majority of the migrants earned monthly income in the range of ₹ 10,000-15,000 in the destination which reflects that majority of the migrants from the study areas are prone to migrate from the rural to urban areas for such a range of a monthly income. Along with this the farm income of the migrants' households increased as a result of increase in the cultivable land, increase in the number of the livestock, increase in the vegetable production and tea land garden. The main animals and fowls reared by the migrants household are cows, buffalo, duck, chicken, goats, pigs and ox. In the majority of the migrants' households of the ST communities pig are the most reared animals because of its higher price value compared to other animals reared by the households. The damage of their crop by floods and wilds animals led to food scarcity and the income from tea cultivation along with the remittances money send by the migrants helps the migrant households in fulfilling the food demand and other expenditure of the households at the time of emergency. Most of the migrant households have 0.5-1 *bigha* of tea garden and earn ₹ 17500-35000 yearly. The ST people migrate to far off places whereas the Non-ST people migrate within the states of the study area. Remittances and the net sown area are the major factors of the impact on agriculture. The impact of rural out-migration is felt in the labour supply, an increase in the land area, increase in food crop production and vegetable production**.** The small tea plantation garden as a side source of income is more prevalent among the Non-ST community because of the suitability of the land available in the village areas of the Non-ST communities as most of the ST villages households areas were in low lying areas compared to Non-ST communities. Despite its positive impact on the standard of living, migration is not economically justified as it creates a regional imbalance, overcrowded urbanization, and increasing demand for more socioeconomic and health infrastructure that brings a fiscal problem on the public authority in the long run. Migration can be checked if more focus is given on the creation of small and marginal industries along with the optimum utilization of the agricultural resources. Lastly area specific programme should be launched to absorb the local skill and unskilled people.

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