

LIVELIHOOD, LAND AND FOOD SECURITY AS SOCIAL SURVIVAL ATTRIBUTES: A CASE OF CHAKMA SETTLERS IN ARUNACHAL PRADESH, NORTH EAST INDIA

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Abstract : The survival strategy of the stateless people across the world has various similarities as they have a common factor: *the struggle for socio-cultural existence*. There are stateless people in India's Northeast region, who are deprived of nationality and in the ongoing process of getting assimilated and adopted in the new geography and they face enormous obstacles to continue their own living pattern and livelihood. The paper illustrates the social survival indicators, which are conceptualized with socio-economic variables such as livelihood, landholding and family level food security that contribute to the continued existence of Chakma settlers, the victim of development-induced displacement who had been brought to Northeast India from Bangladesh. The study focuses on the 12 settlement villages in Arunachal Pradesh state and covered 360 Chakma families. By practicing new plough mode of cultivation, they themselves adapted to the new situations and produce food crops for their daily consumption and also sell to the local markets. The landless and the households who do not have sufficient land for agriculture engage in share cropping with other Chakma families and local Arunachali tribal groups. The study may guide the policy makers and development workers to understand the process of social survival attributes of the stateless across the world.

Keywords: Social survival, Stateless people, Northeast India, Livelihood, Food security, Share cropping

I. Introduction

As a survival strategy, the tribal communities mainly occupy the rural areas and adjacent locations to the forests and they primarily engage in the activities of safeguarding their land, protecting language and promoting their culture, along with numerous forest based livelihood activities. Muhammed et al.(2010) articulates the challenging situations being faced by certain indigenous communities, that they have been striving for their social survival: to preserve customary life style and to attain enough and safe participation in the present state systems, practices and governance where they are currently belonged to. In the ongoing process of getting assimilated and adopted in the new area having diversified social challenges, such communities face enormous obstacles to continue their own living pattern and livelihood. Survival is the state or fact of continuing to live or exist, typically in spite of an accident, ordeal, or difficult circumstances (Oxford Advanced Learning Dictionary). Social survival deals with the capacity to access, sharing and utilization of various resources required for the survival. The social survival illustrates the growth of particular group of people by adopting community level strategies in survival as group rather than as individuals (Parisi & Cecconi, 1997).

There are stateless people in India too, who are always deprived of nationality which is the fundamental human right that affirmed in the article 15 of Universal Declaration of Human Rights. Thus, the socially excluded people are always in crisis of identity, human dignity and security and social protection (Zetter, 2015). Medical benefits, food security and livelihood support in terms of skill training are the key provisions being given to the refugees or stateless population in India by UNHCR and Government of India. However, lack of refugees legislation in India lead to adhoc approach to different refugee communities and some groups such as Tibetans and Srilankans are granted a full range of benefits including legal residence and the ability to be legally employed, whilst but many others are denied access to basic social resources(Paul& D Nag, 2015).Very few communities such as Tibetans and Chakmas were provided land for cultivation to ensure their economic sustenance and food security(Artiles, 1985 and CCRCHAP,2012).

In the case of refugees or stateless people, UNHCR has food security strategy plan that focuses on the households to be food secured through provision of safe foods. The refugee or stateless households are considered to be food secure only when they have access to adequate quantity of variety of safe foods that the members required to lead healthy lives (Johnson, 2019 and UNHCR strategic plan, 2008 and Harrelson, 2011). Food security also refers to the ability of a household to secure these needs through their own production, purchases, barter or other means. Food security's three pillars are availability, access and utilization (Harrelson, 2011). United States Agency for International Development (USAID) defines Food Security as when all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life

The World Food Summit,1996 defined food security as existing "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life". Commonly, the concept of food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences. Household food security exists when all members, at all times, have access to enough food for an active, healthy life. Food security incorporates a measure of resilience to future disruption or unavailability of critical food supply due to various risk factors including droughts, transportation issues, fuel shortages, economic instability, and wars.

The present paper illustrates the social survival indicators which are conceptualized with socio-economic variables such as livelihood, landholding and family level food security that contribute to the continued existence of Chakma settlers, a group of people living as refugee and stateless in Changlang district of Arunachal Pradesh state of India. In the present paper, food security focuses on Chakmas' household food consumption status, availability of nutritious food, food patterns and influencing factors towards changing food patterns, quantity of food production and the income and expenditure from the production and procurement at family level. The paper reviews the significant relationship between food security and income and landholding patterns among the Chakma families in the study villages. Also, it analyses the livelihood and food security and other associated elements towards the social survival of Chakma community, a Tibeto-Burman Tribal community of India and Bangladesh. The Chakmas, the first victim of development-induced displacement in modern South Asia had been brought to North Eastern States of India as refugees during mid 1960s from their ancestor's land in Bangladesh (Singh, 2010).

2. Material and methods

2.1. Background of the study

During the year 1964-65, the Chakmas who lived in the Chittagong Hill Tracts (CHT) of East Pakistan (present Bangladesh) lost their land due to the construction of Kaptai Dam on the Karnaphuli River. Since they were non-Muslim and non-Bengali speakers, they faced religious persecution. They were displaced to various countries and the major population was moved and sought asylum in India. A major percent of them had settled in North eastern states especially in Arunachal Pradesh, Mizoram and Tripura. Talukdar (1988) pointed out that Chakmas were absorbed in Arunachal Pradesh in the early sixties, but they do not enjoy the same rights as local tribes. Kumar (2011) asserts that Chakmas are the third largest ethnic communities in Arunachal Pradesh and the group of Chakmas are termed with different identities such as 'refugees', 'environmental refugees', 'nomads', 'trespassers', 'developmental refugees', 'illegal immigrants', 'foreigners' unwanted migrants' and 'Indian citizens' in various documents authorized by state and central government, political leaders, national and international Non Governmental Organizations (NGOs) and scholars (Singh, 2010, Talukdar, 1998, Ganguly: 1995, Report CCRCHAP: 13, Baruah: 1986, Weiner: 1993 as cited in Singh, 2010).

The stateless Chakmas in Arunachal Pradesh defy the stereotypical portrayal of refugees, as they are not dependent on any external aid agency for their survival. Apart from the initial assistance extended to them by the Indian government during the course of their settlement in 1964-69, they have not received aid or assistance of any kind. Most facilities extended to them in the form of ration card, access to government schools and health centres, and even employment in central government institutions were withdrawn in the late 1980s after Arunachal Pradesh attained statehood in 1987. The land which was originally allotted to each Chakma family at the time of their settlement continues to form the mainstay of their living. Most of them are small farmers who, in addition to cultivating basic crops like wheat and rice, grow cash crops like vegetables to help them to earn income to take care of different kinds of requirements. Though there are some who have branched out to areas like trading, their primary means of livelihood remains agriculture (Singh, 2010). Past sixty years of existence of Chakmas in Arunachal Pradesh have been contributed by spectrums of factors such as their agricultural skills, family level food security, skills to adapt to the new situation and living styles etc have contributed to the existence of Chakmas in Arunachal Pradesh for the past sixty years.

2.2. Methodology

The Chakmas are settled in four main districts—Changlang, Namsai, Lohit and Papumpare in the state of Arunachal Pradesh. The study focuses on the six villages each in Miao and Bordumsa subdivisions of Changlang district. The researcher covered one respondent each from 360 Chakma families of 6 villages each from Bordumsa and Miao subdivisions. 30 respondents from each village were identified and hence 360 families were covered in the present study. Detailed socio-economic survey and household food security analysis were done in the study villages. Chakma families residing in Bordumsa and Miao subdivision in Changlang district were identified as the unit of the study. Both quantitative and qualitative data were collected to critically explore the contributing factors towards the social survival of Chakma settlers in Miao and Bordumsa subdivisions. Cross tabulation and bivariate analysis were done to interpret the data gathered for this present work.

3. Results and findings

3.1. Livelihood Profile

3.1.1. Livelihood profile of Arunachal Pradesh

The state of Arunachal Pradesh is known for the diversified livelihood which is forest and agriculture based. The Arunachal Development report (2009) and report by Department of Planning, Government of Arunachal Pradesh reveal that, five percent land is available for cultivation of the total geographical area. Food and livelihood security is a big concern of the state as the state population has increased.

The Development report narrates that about 80% of population living in rural area is dependent on agriculture and 62.29% of total working populations are engaged in agriculture. The average size of holding has declined from 6.19 ha in 1970-71 to 3.69 ha in 2000-01, partly showing increasing population pressure on the agricultural land. (Arunachal Development Report, 2009). In many of parts of Arunachal Pradesh, *Jhum* cultivation is being practiced by the indigenous people. Shifting cultivation system provides livelihoods to a large section of the rural population of the State. Many of the *jhumias* still reside in remote and relatively underdeveloped pockets of the State. It is revealed that there is significant change in the cropping pattern in the State. The percentage of area under food grains has declined drastically within two decades. However, there is minimal increase in the areas for maize and oil seeds cultivation. It is understood that since early 2000s, Arunachal Pradesh faces food insecurity in terms of production of food crops.

In Arunachal Pradesh, especially in the rural population, livestock plays an important role as one of the key sources of income. Apart from the cultural significance of the livestock in the traditional economy of many of the tribes, there is a growing demand for livestock and dairy products in the State. Pigs, buffalos, poultry are the main livestock in the state. Sarmah & Arunachalam (2011) narrate that the forests of Arunachal Pradesh support rich diversity of timber as well as non-timber yielding. The non-timber forest products (NTFPs) possess imperative part of the traditional life style in Arunachal Pradesh and utilisation of these products has been contributing much to the local livelihood.

3.1.2. Livelihood summary of Changlang district

In Changlang district, 92.36% area is covered by the forest and about 5.8% of the total geographical area is under agricultural activities. Agriculture is the most important source of livelihood for the people of the district with paddy as the major crop. Shifting cultivation is the most widely practiced form of agriculture in this district. The primary occupation of the indigenous people is agriculture and its associated activities. Also, rearing of animals is a secondary occupation of the people. Other activities such as government jobs, agricultural labour, government contract works, casual work under government departments, trade in local products, etc, too bring in resources to the people (Kanungo, 2010). The work participation rate is 47.9% which is higher than the state average of 44%. Of the total workforce of 48%, 39.2% are main workers and 8.7% are marginal workers. Among the total workforce, there are 41786 (69.6%) cultivators, 3289 (5.5%) agricultural labourers, 729 (1.2%) household industries workers and 14241(23.7%) other workers (District report, Changlang, nd).

3.1.3. Occupational pattern of Chakmas

Biswas & Paul. (2014) narrate that shifting cultivation is the major source of livelihood of the Chakmas while majority of them depends on the paddy cultivation. Besides, they also cultivate various crops, vegetables and spices. Also rearing of pigs and poultry was a feature of almost all the Chakma households. However, there is a considerable change in the practice today as rearing of cow and buffalo is included along with piggery and poultry. Also weaving has always been an important traditional occupation among the Chakmas, especially the women. It is obvious that Chakmas are known experts in shifting cultivation. But, due to the limited land availability and the given plain land during settlement and resettlement, they practice permanent cultivations now a days. The study conducted by Pulu (2014) in Chakma villages in Arunachal Pradesh revealed that the main occupation and livelihood of the Chakmas are agriculture and they practice both wet cultivation and *Jhum* cultivation. Also they engage in non agricultural activities which include daily labour, business, service etc.

Table: 01
Occupation of Chakma families

S.no	Occupation	Bordumsa Urban	Borduma Rural	Miao Urban	Miao Rural	Total Members	Total %
1	Salaried Private Job	22	30	21	35	108	5.68
2	Government Service	9	2	2	0	13	0.68
3	Business/shop	25	37	20	5	87	4.57
4	Farmers	123	209	195	194	721	37.89
5	Agriculture Labor	62	82	54	74	272	14.29
6	Handicraft/weaving	37	27	23	21	108	5.68
7	Unemployed	110	75	60	62	307	16.13
8	Not Employed	66	85	84	52	287	15.08
	Total	454	547	459	438	1903	100

(Source: Primary survey)

The above table provides the quantitative data on various occupations of the 1903 members of 360 Chakma families in the selected villages. The identified occupations of Chakma family members are private jobs, government services, small business, farming, agriculture labours and weaving. 37.89 % members said that farming is their main occupation. Also 14.29 % members are engaged in agriculture labour which is more predominant in rural villages than the urban villages. Handicraft and weaving is also one of the key occupations (5.68%) being practiced by the Chakma people especially house wives and young women. It is found that 5.68% of the family members, especially the youths are in private job. Also 4.57% members have small business and petty shops in the village. The data reveals that a negligible number (0.68%) Chakmas engage in Government services. The table also reveals that 16.13% members, especially the youths are unemployed.

3.1.4. Household income

Chakma (2013) pointed out that Chakma settlers in Arunachal Pradesh are economically poor and they are living in poverty ridden situation even after the sixty years of their influx from CHT. At present, nearly 50,000 Chakma are living under difficult economic conditions in Arunachal Pradesh without any public infrastructure and supply. The majority of the Chakma are farmers who earn the livelihood for their families from rice cultivation under difficult conditions.

Table: 02
Monthly income of the households

Sample area	Monthly income(Rs)							Total
	<1500	1501-3000	3001-4500	4501-6000	6001-7500	7501-9000	>9001	
Bordumsa Urban	20	23	12	11	8	8	8	90
Bordumsa Rural	16	18	15	13	4	7	17	90
Miao Urban	14	29	21	11	1	6	8	90
Mio Rural	12	19	20	19	3	5	12	90
Total	62(17%)	89(25%)	68(19%)	54(15%)	16(5%)	26(7%)	45(12%)	360(100%)

(Source: Primary survey)

The table illustrates the status of monthly income of 360 sample households in the 12 Chakma villages. Out of 360 sample households, 89(25%) households have monthly income between Rs 1501-3000 and only 45(12%) households have income above Rs 9001. It is revealed that the monthly income of the Chakma families in the study villages lie between Rs 1500-6000. The data points out that 17% of sample households have income below 1500 which is very meagre. It is noticed that agricultural labour is one of the key income sources as 9% are engaged in the land being cultivated by other Chakma families and local Arunachali tribes such as Singpo and Tangsa. In Avoipur (Bordumsa urban) and Udaipur village (Bordumsa rural), there are Chakma families whose members have earning from Government job such as Border Security Force(BSF), Post Master and other Government contract jobs such as Health Workers (ASHA) and Anganwadi supervisors ICDS).

3.1.5. Livestock

It is observed that 56% of the sample households engage in cattle farming, which is identified as the prime livestock activities among the Chakma households. Miao rural villages have more households (60) with cattle farming as compared to urban villages. Piggery is also identified as another major livestock activity and 53% households are engaged in Piggery. Other livestock activities such as goatery (11%), duckery (8%) and fishery (6%) are also noted. 18% household engage in selling cow milk as key income sources. Besides that, there are Chakma households who earn Rs 25000-30000/- annually from selling cow milk in the villages such as Mpen 1 and Dharmpur 1(Miao urban). Also villages such as Dumpathar and Udaipur (Bordumsa rural) and Bijoypur 1(Bordumsa urban) have households who earn more than Rs 10000/- from selling cow milk.

3.1.6. Food Crops

It is found that rice, maize, pulses, vegetable including banana and fruits are the main food crops being cultivated for commercial purposes. 77% households cultivate rice as prime crop which contributes towards their income. It is noted that Mio rural households (78) and Bordumsa rural households (72) cultivated rice as main income source than urban households in both subdivisions. In Urban villages, Miao urban (68) have shown rice as their prime income sources as compared to Bordumsa urban (58). It is found that cultivation of vegetables including banana (41%) is the second highest crops among the surveyed households. Notably, Also maize is being cultivated by 42 (12%) households. However, fruits (6%) and wheat (2%) are cultivated commercially by a small number of households. It is estimated that 10% households earn Rs 5001-10000/- from food crops. Another 10% earn Rs 10001-15000/- from the same source. It is noted that 5% households earn Rs 20001-25000 from the commercial cultivation from the crops such as rice, maize and vegetables.

3.1.7. Commercial Cultivation of Cash Crops

Tea and areca nut are the two important cash crops of which areca nut are more prominent. It is noted that 47% households cultivate areca nut. Also small scale tea plantation is an emerging sector among the Chakmas and 2% households have already been practicing this. Five households in Udaipur village (Bordumsa rural) and two households in Rajanagar (Bordumsa urban) practice small scale tea plantation, among the 360 sample households. It is found that, except Avoipur village (Bordumsa urban), all the other study villages have a considerable number of households earning through areca nut cultivation.

3.1.8. Handicraft

It is noted that only 14.1% Chakma households earn income out of making handcraft/handloom. This implies that handcraft/handloom, one of the prime traditional occupation has declined among the Chakma communities in Arunachal Pradesh. The data reveals that only 5.8% Chakma households earn above Rs 50001, from handcraft/handloom. However, one Chakma household in Avoipur village (Bordumsa urban) earns Rs 108,000/- out of handloom/handicraft.

3.2. Landholding

3.2.1. Landholding pattern

CCRCHAP (2012) report claims that landlessness among the Chakma is alarming. There is acute shortage of agricultural land for the Chakma families. The report further revealed that landholding among them ranges from 0.55 Ha to 0.94 Ha per families. Also landholding further decreased due to natural growth of population during last 10 decades.

Table : 03
Area of land occupied by the sample households

Area (in Acre)	Bordumsa urban	Bordumsa rural	Miao urban	Miao rural	Total
Below 0.5	18	15	15	09	57(15%)
0.6-2.5	33	31	15	27	106(29%)
2.6-4.5	18	22	35	27	102(28%)
4.6-6.5	06	08	18	21	53(14%)
Above 6.6	0	02	02	0	04(1%)
No response	13	04	03	01	21(6%)
No land	02	08	02	05	17(8%)
Total	90	90	90	90	360(100%)

(Source: Primary survey)

The table illustrates that the Chakma households in the study villages occupy the area of land ranges between 0.5 to 8 acres. It is noted that 29% households occupied the land ranges between 0.6 to 2.5 acres. Villages such as Jyotipur (Bordumsa urban), Rajnagar (Bordumsa urban), Dumpathar (Bordumsa rural) and Dharmapur (Miao rural) have more than 10 households having land area ranging between 0.6 to 2.5 acres. Also 28% households have land between 2.6 to 4.6 acres. It shows that the average landholding pattern in the study villages is in between (the range of) 0.6-4.5 acres per family.

3.2.2. Land for cultivation and challenges

Chakarabarty (2006) described that the Chakma and Hajong are given land in the new settlement areas in Arunachal Pradesh and they developed it into fertile agricultural plots. Hard working by nature, they started rebuilding their lives in their country of adoption. They produced paddy, vegetables, chilly, ginger and other cash crops and sold them in local markets, bringing good economic returns. Thus, domestic economy has improved through which the Chakma community started enjoying prosperity in their lives. Another key factor is that a localised mutual dependence is developed between Chakmas and local Arunachali tribes such as Singpo and Tangsa. The local tribes engaged the Chakmas to work in their agriculture fields. They hired the refugees to clear jungles and develop farm plot for them. Chakmas also helped local tribes cultivate their land in exchange for cash or kind.

Also the land allotted to Chakma households were made use for agricultural purpose despite of the burning challenges, being faced by them, such as acute shortage of land, land erosion due to regular floods. Corroborating this point, Talukdar (1988) and Summary of Chakma and Hajong Population Survey Report (2012) revealed that soil erosion and flood take place every year because of the presence of Dihing river. Consequently, many refugees were uprooted from their settlement area within short span of time. Even if Chakmas are expert of *jhum* method from Chittagong Hill Tracts, they could not practice the same in the new areas because of shortage of land and other geo-climatic patterns. To validate, Singh (1994) pointed out that shifting cultivation is the Chakmas occupation, through many of them have adopted plough cultivation.

3.2.3. Share cropping system

Share cropping system is found to be common among the Chakma households. The landless and the households who do not have sufficient land for agriculture engage in share cropping with other Chakma families and local Arunachali tribes such as Singpo, Khamtis and Tangsa (Chakarabarty, 2006). Households in the studied villages do share cropping with neighbouring Chakma communities and local tribal groups. It is noted that 10.5% households do share cropping with neighbouring Chakma families who possessed sufficient land for agricultural activities. Villages such as Avoipur (Bordumsa urban) Dumpathar (Bordumsa rural) and Bijoypur II (Bordumsa rural) have more number of households engage in sharecropping with neighbouring Chakma families. It is noticed that 4% households do share cropping with Singpos and also found that Bordumsa rural villages such as Dumpathar and Udaipur having households who are closely associated with Singpos. It is revealed that 3% households do share cropping with Tangsa one of the prominent tribes of Changlang district. Also Khamti is another local community whom with the Chakma households (3%) in Rajnagar (Bordumsa urban), Jyotipur (Bordumsa urban) and Bijoypur II (Bordumsa rural) villages do share cropping. Also a few households (0.6%) shared that they do share cropping with Hajongs, one of the refugee communities, who had been given settlement along with the Chakmas.

3.2.4. Land loss

Since many of the Chakma villages in Bordumsa rural, Miao rural and urban areas are located in the river banks, the houses and agriculture land are prone to regular flash flood, soil erosion and they lose massive areas of land every year. CCRCHAP (2012) claims that soil erosion and siltation is the major causes of massive loss of agricultural land in Chakma and Hajong inhabited areas in Changlang district. The report mentioned that, in Changlang district, the Noa-Dihing river washed the soil away and rendered uncultivable over 13 square kilometre of agricultural land belong to the Chakma villages located in the north and south bank of the river. Report of Tejang (2012) revealed that flash flood causes deaths and severe damages of agriculture and assets. In the year 2012, seventy five families trapped in flash flood water in Arunachal Pradesh. The swollen Noa-Dehing River caused extensive damages to two Chakma villages of Bijoypur-I and Bijaypur-II under Bordumsa circle. In 2015 also severe damages occurred in many of the villages due to the flood.

3.4. Food security

3.4.1. Household food security

The study accumulates and gathers the different segments that contribute to household food security status of the Chakma families in the study areas. The various components of food security such as production and marketing of food crops, household food consumption status, availability of nutritious food, food patterns and influencing factors towards changing food patterns, income and expenditure for the production and procurement at family level are discussed. It is revealed that most of the households depend on agriculture as their main source of income and they produce various food crops such as rice, vegetables maize etc. Even if the studied families are denied the services of public distribution systems (PDS), they are able to survive by making use of the limited land facilities and agriculture production and marketing infrastructures. As Chakarabarty (2006) mentioned, Chakma communities have developed limited land given to them to more fertile agriculture plots where they cultivate mainly food products and they produced paddy, vegetables, chilly, ginger and sold them in local markets, bringing good economic returns. Also, they are trying to overcome the enormous challenges such as regular flood, insecurity feeling being generated due to the uncertainty of land and assets, and other social exclusion incidents. By practicing new plough mode of cultivation, they themselves adapted to the new situations and produce food crops for their daily consumption and also sell to the local markets.

3.4.2. Food crops production

Rice cultivation is identified as the key source of livelihood of the Chakma households in the study villages. It is understood that out of 360 sample households, 77% cultivate rice for commercial as well as own family consumption. Hence, it is very evident that rice production is one of the key contributory factors towards the food security. With regard to the commercial cultivation and marketing of rice, 32% sample households shared that they sell below 10 quintal of rice to earn income. Another 5% households sell 21-30 quintal of rice to sell to nearby markets. And only 2% households produce more than 50 quintal of rice for selling. Similarly, in the case of vegetable production, out of 360 sample households, 41% Chakma families produce vegetable for their own consumption as well as selling to the markets. There are 26% who produced only 1 quintal for their consumption, another 10% households producing 1-5 quintal and 3% households generating more than 10 quintal of vegetable annually for family consumption. It is also noted that apart from rice, vegetables and maize, they produce meat products such as beef, pork and chicken and wild edible vegetables and fruits for their own consumption.

3.4.3. New crops introduced in the society

The Chakmas in Arunachal Pradesh is identified and recognized as expert farming communities who adopted and easily adjusted to the new geographic situations and local context. It is evident that Chakmas have brought new agricultural practices and they introduced new crops in the areas where they have been settled. Crops such as maize, mustard, soyabean, masoor dal, tomato and new varieties of rice were introduced by the Chakma settlers. From the survey done among the 360 households, 18% respondents shared that Chakmas have introduced maize in the new villages where they have been settled. Also 10% shared that mustard was introduced as a new crop. Also pepper (10%) and wheat (1.1%) were also introduced by the Chakmas.

3.4.4. Marketing of agriculture produces

The scope of marketing the agriculture produces directly contributes towards the income sources and hence, the food security of the study group in the Changlang district. There are urban markets such as Diyun, Bordumsa and Miao which provide access to the larger community including the local Arunachali tribes and other settlers who buy the agricultural produces from the Chakma farmers. The data reveal that maximum respondents of 62% responded that they are able to sell the products at nearby villages. Also another 18% respondents shared that they are selling the products at urban markets where they got larger platforms and access among the local Arunachali tribes. It is also evident from 16% who shared that external buyer directly approaches the farmers and buy the products from the field. Only 3% respondents felt that there are no satisfactory market facilities.

Table: 04
Household food security analysis

Food security indicators	Bordumsa urban	Bordumsa rural	Miao urban	Miao rural	Total
1. In the past four weeks, did you worry that your household would not have enough food?					
No	65	56	85	80	286(79%)
Yes	25	34	05	10	74(21%)
2. In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?					
No	58	45	87	83	273(76%)
Yes	32	45	03	07	87(23%)
3. In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?					
No	70	58	87	81	296(82%)
Yes	20	32	03	09	64(18%)
4. In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?					
No	66	46	88	80	280(78%)
Yes	24	44	02	10	80(22%)
5. In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?					
No	80	70	88	81	319(88%)
Yes	10	20	02	09	42(12%)
6. In the past four weeks, did you or any other household member have to eat fewer meals in a day because there was not enough food?					
No	82	73	88	87	330(90%)
Yes	08	17	02	03	30(10%)
7. In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?					
No	85	77	88	84	334(93%)
Yes	05	13	02	06	26(07%)
8. In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?					
No	86	77	88	88	339(94%)
Yes	04	13	02	02	21(06%)
9. In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?					
No	86	78	88	89	341(95%)
Yes	04	12	02	01	19(05%)
Status	Bordumsa urban	Bordumsa rural	Miao urban	Miao rural	Total
Food secure	59	37	84	78	258(72%)
Mildly food insecure	22	36	05	08	71(19%)
Moderately food insecure	08	03	0	03	14(4%)
Severely food insecure	01	14	01	01	17(5%)
Total	90	90	90	90	360(100%)

(Source: Primary survey using household food Insecurity access scale (HFIAS) of USAID)

The table illustrates that even if the Chakma families face various issues; their household level food security status is satisfactory in terms of family level consumption and availing food crops locally. As per the household food security analysis done at study villages, 72% households are food secured as they have adequate food, which is culturally accepted and locally available. It is noted that Miao rural and urban households are more food secured as compared to Bordumsa households. Also urban households are slightly more food secured as compared to rural households (Bordumsa and Miao) as per the survey.

3.5. Food security and household income

The household income is one of the key factors contributing to the current food security status. The study reveals that monthly income of the Chakma families lies between Rs1500-6000. A major percentage of the sample households (46%) shared that they are not spending money for food and therefore food has no effects on their income. This implies that they have enough food available which are locally produced and also at affordable price. Also 69% sample households depend on agricultural activities as their prime source of livelihood. They produce food locally for their own consumption and the surplus is sold in the markets. Piggery is also identified as another major livestock activity and 53% households are engaged in Piggery. There are 18% household engaged in selling cow milk as key income sources. Apart from agricultural activities, the Chakma families earn income from small business activities including running petty shops, handicraft, government services and private jobs. Thus, the sustainable income sources such as agriculture and livestock have been contributing to their food security.

Table:05
Bivariate analysis
Food security and household's monthly income

Food Security \ Monthly income	High income (Above 7500)		Moderate income (4500-7500)		Medium income (1500-4500)		Poor income (below 1500)		Total	
	No.	%	No.	%	No.	%	No	%	No.	%
Food secure	59	17	57	15	120	34	22	06	258	72
Mildly food insecure	10	3	11	3	30	8	20	05	71	19
Moderately food insecure	02	0.6	0	0	01	0.3	11	3.1	14	4
Severely food insecure	0	0	2	0.6	06	1.9	09	2.5	17	5
Total	71	20.6	70	18.6	157	44.2	62	16.6	360	100

(Source: Primary survey)

The bivariate table illustrates the symbiotic relationship between food security and monthly income of Chakma households in the study villages. It is noted that 17% households, whose monthly income is high, are food secured. Similarly, other 15% and 34% households whose income is medium and moderate are also found to be food secured. The data reveals that poor income families are the ones who are severely food insecure. For example, 5% households belonged to severely food insecure, 2.5% households are under poor income category and 1.9% is in medium income families. The households who belong to high and moderate income groups are found to be food secure. Since the income of rural households are higher than the urban households, Chakmkas in Bordumsa and Miao rural villages are better off-in terms of food security than their urban counterparts. Thus, the analyses divulge that there is significant relationship between monthly income and food security. This implies that monthly income is a key contributory factor towards a family's level of food security.

3.6. Food security and landholding

Land use pattern is also identified as another key factor that contributes towards the food security of the Chakma households in the study villages. Pulu(2014) analyzed the response from 400 Chakma households in Miao circle which revealed that around 79 percent of those who does not have land also engaged in cultivation through sharecropping. The Chakmas who reached North east India as refugees were given land for their sustenance and they developed the land into productive agriculture plots by cultivating various crops. Gradually, the local tribal groups such as Singpo and Tangsa built confidence on the Chakmas and hence they started doing share cropping. Almost one third of the Chakma households who have land also do share cropping, but most of them do in smaller area as compare to the landless people(Pulu,2014).

The present study reveals that the Chakmas households in the study villages occupy the area of land ranges between 0.5 to 8 acres. It is noted that 29% households shared that they occupied between 0.6 to 2.5 acres of the land allotted to them. Since many of the Chakma villages in Bordumsa rural, Miao rural and urban areas are located near the river banks, their houses and agriculture land are prone to regular flash flood, soil erosion leading to massive lose of land every year.

Table: 06
Bivariate Analysis
Food security and land holding

Food Security Landholding	Adequate land (Above 2.6 acres)		Medium land (0.6-2.5 acres)		Limited land (below 0.5 acres)		Landless		Total	
	No.	%	No.	%	No.	%	No	%	No.	%
Food secure	136	39	71	19	29	08	22	06	258	72
Mildly food insecure	17	4.5	28	7.5	17	4.5	09	2.5	71	19
Moderately food insecure	02	0.5	04	01	04	01	04	1.5	14	4
Severely food insecure	07	02	03	01	04	01	03	01	17	5
Total	162	45	106	29	54	15	38	11	360	100

(Source: Primary survey)

The bivariate table illustrates the symbiotic relationship between food security and landholding of the households in the study villages. It is noted that 39% households, who have adequate land (Above 2.5 acres), are food secure. Similarly, another 19% households who have medium land (0.6-2.5 acres) are also found to be food secure. It is surprising to note that 6% households are landless and they are also found to be food secure, which implies that other factors such as shared cropping system and leased farming helped them to cultivate food crops for their own consumption. Similarly, 2% households who have adequate land (above 2.5 acres) are found to be severely food insecure. This is because of the regular occurrence of flood and land erosion, villages are unable to cultivate food crops and accordingly they fall into severe food insecurity. (egs: Dumpathar and Udaipur villages)

Thus, it is apparent from the scrutiny above that there is symbiotic relationship between food security and landholding. Those households who have adequate and medium land are found to be food secure and land ownership is a key contributory factor towards the family level food security. Also, the share cropping system being practiced by the Chakma households had contributed to the food security of a few landless households. Likewise, natural calamities such as flood and cyclone prevent some households who have adequate land to cultivate food crops and hence they become severely food insecure.

4. Conclusion

This paper examined the contributory attributes such as household income, land ownership, food habits, agricultural practices and food security towards the social survival of the Chakma communities in the study villages. Chakmas community are known for their expertise in agricultural activities especially their skill in traditional ways of farming. They are considered to be the *jhum* experts in the new lands where they were brought and settled. The livelihood of the Chakmas were mainly depended on farming on settled areas as well as *Jhuming*. By understanding the fact, that limited land for cultivation in newly settled lands, they are forced to practice new methods by adapting with the local context and climatic conditions. The findings reveal that the identified occupations of Chakma family members are private jobs, government services, small business, farming, agriculture labours and weaving. It is revealed the monthly income of the Chakma families lie between Rs 1500-6000. The data pointed out that 17% of sample households have income below 1500 which is very meagre. Commercial cultivation of cash crops is identified as one of the key income sources for them. Tea and areca nut are the two important cash crops in which areca nut are more prominent. Also handicraft/handloom, one of the prime traditional occupations has declined among the Chakma communities in Arunachal Pradesh. The paper articulated that, even if the Chakma families are denied the services including public distribution systems (PDS) and welfare schemes, they are able to survive by making use of the limited land facilities and agriculture production and marketing infrastructures. By practicing new plough mode of cultivation, they themselves adapted to the new situations and produce food crops for their daily consumption and also sell to the local markets. It has come to light that there is symbiotic relationship between food security and monthly income. Households that belonged to high and moderate income groups are found to be food secure and Monthly income is found to be a key contributory factor towards the family level food security. Also, there is symbiotic relationship between food security and land ownership is coactive. Besides, the share cropping system being practiced by the Chakmas has contributed to the food security of a few landless households.

Even though most South Asian countries have accommodated large number of refugees and stateless people, they are not in position to safeguard the rights as well as needs of those needy communities. The findings may help the Civil Society Organizations, State and Central Government to come up with feasible plan for social inclusion of the stateless people across the globe. The study may guide the policy makers and development workers to understand the process of social survival attributes of the stateless globally.

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