Chapter – VII

Capability Deprivation of the Bodo Households in Chirang District

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Chapter-VII

Capability Deprivation of the Bodo Households in Chirang District

7.1 Introduction

In the previous two chapters, we have discussed that Bodo households in the Chirang district are characterized by poor socio-economic status and low human development. Poor performance in socioeconomic status represents limited amenities and income opportunities of the households. Low HDI states low human development. In this context, this study is needed to investigate the households in terms of deprivations of the people living there. "The term deprivation stands for the condition of a system or a community or a region which is lacking the necessities of a society or community. Analogically, socio-economic deprivation can be described as the lack of social and economic benefits which are considered to be necessities of a society or community or in a broader sense of a region. The regions with high demand and low supply of basic requirements often exhibit poor social and economic status compared to the other adjacent regions which mark the former as socio-economically deprived region" (Pampalon, 2000, p-105). Human deprivation is more fluently explained as capability deprivation in the capability approach.

Prof. Amartya Sen has developed, refined and defended the capability approach directly concentrating on human capability and freedom in his various works initiating in his *Tanner Lecture* "Equality of What?" delivered at Stanford University in 1979 (Clark, 2006). The capability approach is a normative framework for assessing the well-being of people. In assessing well-being, it emphasizes the actual opportunities that people realize as their beings and doings; instead of subjective well-being (such as happiness) and material means to well-being (such as resources like income or wealth). It claims that the freedom to achieve well-being is to be understood in terms of people's capabilities and the freedom to achieve well-being is of primary moral

importance. Beings and doings are called functionings and people's potential functionings are capabilities (Robeyns, 2005). For example, being well nourished, being adequately clothed and sheltered, avoiding preventable morbidity, and so forth, people taking part in the life of the community, being able to appear in public without shame, and so on' (Sen, 1995). In other words, functionings are like achievements or outcomes and capabilities are like the freedom to achieve something or opportunities (Robeyns, 2005). The capability approach states that freedom to achieve well-being is a matter of what people can do and to be, and thus the kind of life they are effectively able to lead.

Prof. Amartya Sen conceptualized human deprivation as a lack of human capabilities, opportunities, choices and values. "Deprivation in capabilities is the result of lack of opportunity- signifying that society has not provided people with access to the means to develop or maintain essential human capabilities" (Roy, Roy and Haldar, 2018, p-604). In other words, deprivation is reflected in a lack of basic capabilities people failing to reach a certain level of essential human achievement or functioning (UNDP HRD 1996).

In this chapter, we study the multidimensional nature of capability deprivation of Bodo households in the Chirang district. In this regard, we calculate the Multidimensional Poverty Index (MPI) for Bodo people of the study area.

7.2 Capability Deprivation and Multidimensional Poverty Index

Poverty measures on the notion of fundamental human requirements such as health and nutrition were found for the first time in the works of Rowntree (1901). Where, Rowntree defined poverty as a state of insufficient earnings to meet the minimum necessities for the maintenance of merely physical efficiency of the families. Focusing on subsistence need, the absolute poverty approach defined poverty as a situation of a household or an individual fails to meet a subsistence level of living. In other words, poverty is a situation of a meager standard of living. According to Sen (1981), absolute poverty is a state of deprivation due to which a poor person fails to meet the minimum

calorie and nutritional requirement. He also argued that poverty may be seen as an absolute inability to pursue certain valuable functionings. On the other hand, Townsen (1979) argued that poverty must be understood as a case of deprivation relative to the societies in which people live. According to him, poverty occurs when people's resources fell below the levels necessary for enabling them to participate in widely-accepted living standards and customs within society. All of these are income centric poverty analysis.

According to the capability approach, capability deprivation is the basis of poverty analysis. People's or communities' inability to choose valuable 'doing' or 'being', which are basic to human life, is called basic 'Capability Failure'. Sen (1999, p-87) argued that "poverty must be seen as the deprivation of basic capabilities rather than merely as lowness of incomes". He opposed the income-centric poverty analysis because low income is one of the major causes of poverty or a person's capability deprivation. Another reason for his opposition is that the requirement of income varies from person to person for achieving the same level of functioning. He gives examples of people of old age, disabled and more seriously ill person "may need more income to achieve the same functioning" (Sen, 1999, pp-88). Thus, according to him, poverty should focus on what people can do and be not just on what they have, or how they feel (Sen, 1992). Income or resources are means or ways to achieve ends or real opportunities in human life. He argues that income or resources are instrumentally important while capabilities are intrinsically important. Capability-based poverty analysis concentrates on ends or people’s capabilities rather than means like income or resources.

Poverty is the worst form of human deprivation in many ways. It occurs not only due to the lack of necessities of material well-being but also seen as the shortfalls of many other opportunities of living. The lives may be prematurely shortened, painful or hazardous, deprived of understanding and communication. Similarly, life may loss of dignity, confidence and self-respect (Anand & Sen, 1997) due to the lack of basic opportunities of living. Thus, deprivation is multidimensional. “Poverty is characterized by multiple deprivations: low

consumption and inadequate living standards, but also often poor health, a shortened lifespan, limited access to education, knowledge and information, and powerlessness in various domains" (Ferreira, 2011, pp-493). Sen argued that income-based poverty analysis concentrated on deprivation in income variables only and failed to focus on the multidimensionality of poverty. Narayan (2000) viewed the multidimensionality of poverty in his pioneering "Voices of the Poor" study in many ways. According to him, firstly, the bottom line of poverty is the lack of food. Secondly, poverty has many psychological dimensions such as powerlessness, voicelessness, dependency, shame and humiliation. Thirdly, poor people lack access to basic infrastructure—roads, transportation, and clean water. Fourthly, poor people realize that education offers an escape from poverty. Fifthly, poor health and illness cause fear of destitution almost everywhere. And finally, poor people rarely speak of income instead of it they focus on managing assets—physical, human, social, and environmental—as a way to cope with their vulnerability. Moreover, the vulnerability has a gender dimension in many areas of the world. Thus, capability deprivation has many aspects and it is multidimensional. Poverty is an analysis of multidimensional capability deprivation.

The capability approach provides a flexible framework for social assessment. Multidimensional Poverty Index (MPI) is one of such frameworks for assessing the capability deprivation. The Multidimensional Poverty Index was launched in 2010 by the UNDP and the Oxford Poverty & Human Development Initiative (OPHI). It has been developed by Alkire & Santos for the Human Development Report of the year 2010. MPI is a measure for multiple deprivations at the household and individual level in the areas of education, health and living standard. Therefore, education, health and living standard are the three dimensions of MPI. We have discussed in detail the procedure of calculation of MPI in the methodology chapter.

7.3 Multidimensional Poverty Index for Bodo People in Chirang district

In this section, we discuss the findings on multidimensional poverty conditions of Bodo people in the study area. At first, we see the overall deprivations in the three dimensions of MPI- education, health and living standard. These are stated in Table-7.1 as the percentage of the population deprived in each indicator of MPI dimensions based on primary data. Secondly, we discuss the MPI scores of sample villages. And finally, we discuss dimensional contributions to MPI.

7.3.1 Population Deprived in MPI Indicators

From Table-7.1, it is observed that 18.3 percent of the sample population (Bodo people in Chirang district) in 87 (20.23%) households in the study area are deprived of schooling because no one has completed six years of schooling in their families. The second indicator of education is school enrolment. In the case of school enrolment, about 14.07 percent of people in 48 (11.14%) households are deprived of school enrolment.

Malnourished and children death are the two indicators for representing the health dimension. During the sample survey, it is observed that there are 88 (20.47%) sample households where one or more family member(s) is (are) malnourished or underweight. The population living in these 88 households is 23.51 percent of the total sample population. Therefore, the percentage of the population deprived of malnourished is 23.51 percent. Similarly, in the cases of the second indicator of health, one or more children death in the family within the age of 14 is (are) found in 41 (9.53%) households with 7.71 percent people. That is, about 7.71 percent of people are deprived of children's death in their family.

In the Multidimensional Poverty Index, the living condition is represented by six indicators. They are namly access to electricity, access to clean drinking water, access to adequate sanitation, not having a dirty floor,

access to clean fuel for cooking and having any one of the assets related to information, mobility and livelihood as mentioned in Table-7.1. No accessibility of one out of these six indicators at the household level means the family members of that household are said to be deprived of not having that particular facility. Regarding indicators of living conditions, we have found that 122 (28.37%) households have not access to electricity, 334 (77.67 %) households do not access to clean drinking water, 269 (62.56%) households do not have adequate sanitation, 292 (67.91%) households have a dirty floor, 278 (64.65%) households use dirty cooking fuel and 67 (15.58%) households do not have an asset. Similarly, the percentage of people deprivation from no electricity is 27.5 percent, no access to clean drinking water is 76.4 percent, not access to adequate sanitation is 61.9 percent, having dirty floor is 67 percent, use of dirty cooking fuel is 56.94 percent and not having asset is 9.68 percent.

Table-7.1 Households and Population Deprived in MPI Indicators (in %)

Dimensions	**MPI Indicators**		**Households (with %)**	**Population (in %)**
Education	I	No one has completed six years of schooling	87 (20.23)	18.3
	II	At least one school-age child not enrolled in school	48 (11.14)	14.07
Health	I	At least one member is malnourished	88 (20.47)	23.51
	II	One or more children have died in the family	41 (9.53)	7.71
Living Conditions	I	No electricity	122 (28.37)	27.5
	II	No access to clean drinking water	334 (77.67)	76.4
	III	No access to adequate sanitation	269 (62.56)	61.9
	IV	House has dirty floor (Kutcha Floor)	292 (67.91)	67
	V	Household uses “dirty” cooking fuel (dung and firewood)	278 (64.65)	56.94
	VI	Household has no access to information and has no access related to mobility or access related to livelihood	67 (15.58)	9.68

Source: Own calculation based on primary data.

N.B. 1. Assets: not having at least one asset related to access to information (radio, television or telephone) or not having at least one asset related to mobility (bike, motorbike, car, truck, or tractor) or at least one asset related to livelihood (refrigerator, agriculture land or livestock)

2. See Annexure C and Annexure D

It is clear from this information that the Bodo households in Chirang district are mostly deprived of living conditions. The highest deprivation is in access to clean drinking water followed by deprivation for having a dirty floor and not having adequate sanitation. Out of the total of 430 sample households, 334 households do not access clean drinking water. They use unsafe sources of drinking water. During the survey, it is found that 149 (34.65%) households use ordinary hand pump tube well, 180 (41.86%) households use uncovered well and 5 (1.16%) households use spring or river to collect drinking water. Next, the highest deprivation is found in having a dirty floor. It is found that 292 (67.91%) households have mud floor (kutcha floor) and only 138 (32.09%) households have the pucca floor. Regarding deprivation from sanitation, 269 (62.56%) households use kutcha latrine/ ordinary latrine or go to open space. About 182 (42.33%) households use kutcha latrine/ ordinary latrine and 87 (20.23%) households do not have latrine of any type due to which they use open space. It means that only 161 (37.44%) households have adequate sanitation. Another major deprivation is found due to the use of dirty cooking fuel. At the time of the sample survey, 278 (64.65%) households used dirty fuel like firewood or cow dung for cooking food items and the remaining 152 (35.35%) households used LPG fuel (Gas Cylinder) for cooking.

7.3.2 Multidimensional Poverty Index

In the previous section, we see the overall deprivation of the households in the indicators of the MPI dimensions. But, we are yet to see the overlapping deprivation of the household. In the calculation procedure of the Multidimensional Poverty Index overlapping deprivation score is calculated at the household level. A household (including its all family member) is said to be multidimensionally poor if the deprivation score is 33.3 or more. In this section, we calculate the Multidimensional Poverty Index for all sample villages to see the stages of households' deprivations. MPI is the product of Headcount Ratio (H) and Intensity of Poverty (A). Headcount ratio is the proportion of multidimensionally poor people to the total population. The intensity of poverty reflects the average deprivation score of the multidimensionally poor people.

Table-7.2 Multidimensional Poverty Index of the Sample Villages and Towns

Village/ Town	Headcount Ratio (H) (%)	Intensity of Poverty (A) (%)	MPI
Bijni Town	19.57	37.53	0.073
Kukurmari	26.26	40.14	0.105
Chapaguri	28.75	42	0.121
Kashikotra	32.31	38.03	0.123
Dahalpara	35.14	37.38	0.131
Kumargaon	32.65	41.55	0.136
Amguri	21.92	62.8	0.138
Bikrampur	27.91	49.33	0.138
Uttar Runikhata	40.98	36.4	0.149
Sukhanipara	40.74	38.08	0.155
Nilibari	46.15	34.06	0.157
Basugaon Town	35.94	47.33	0.17
Subaijhar	42.11	40.7	0.171
Maigaon	44.12	39.1	0.173
Betnapara	41.18	43.07	0.177
Khamarpara	48.98	38.35	0.188
Oxiguri	42.11	44.97	0.189
Gorgaon No.1	44.83	43.35	0.194
Dakhin Makra	48.33	44.12	0.213
Dangaigaon	43.48	50.19	0.218
Duttapur	53.68	40.82	0.219
Amteka	46.75	48.85	0.228
Deulguri	52.83	44.28	0.234
Dimajhora	64.1	38.25	0.245
Patkiguri	54.05	45.82	0.248
Kahibari	62.5	41.88	0.262
Baldi No.2	58.14	48.94	0.285
Chamugaon	69.44	41.57	0.289
Patabari	60.98	49.08	0.299
Ouguri	67.65	44.65	0.302
Aminpara	50.91	60.81	0.31
Tangabari	56.52	55.41	0.313
Silbari Abidapara	68.75	49.25	0.339
Khungring	57.45	61.96	0.356
Kahitama	64.06	55.69	0.357
Kachubil No.1	69.57	59.33	0.413
Bhatarmari	75	56.04	0.42
Koila Moila	86.67	49.21	0.427
Salbari Bhurpar	73.17	59.53	0.436
Uttar Burikhamar	80.65	55.38	0.447
Sample Average for Bodo People	**46.89**	**46.58**	**0.218**

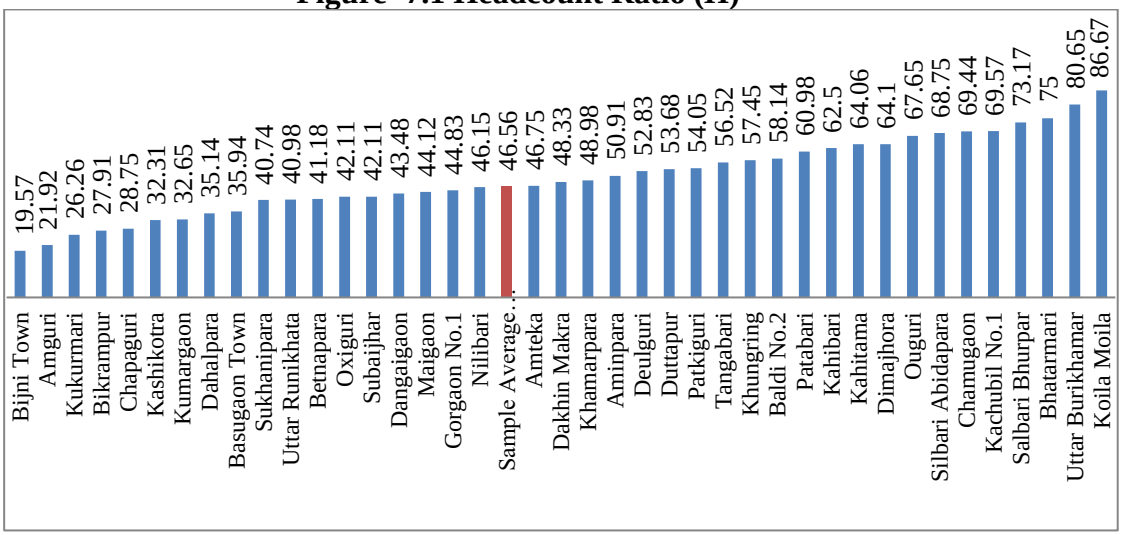
Source: Own calculation based on primary data

The headcount ratio (H), the intensity of poverty (A), and MPI scores of the sample villages and towns are stated in Table-7.2. For example, the MPI calculation for Amteka village is stated in Annexure-E.

According to Table-7.2 (also shown in Figure-7.1), the highest headcount ratio (86.67) is found in Koila-Moila village. That is 86.67 percent of Bodo people in Koila-Moila village are multidimensionally poor. The second highest headcount ratio is 80.65 for Uttar Burikhamar village and followed by 75.0 for Bhatarmari village. The lowest headcount ratio is 19.57 found for Bijni town. The sample average headcount ratio for Bodo people is 46.89 in Chirang district. Thus, about 46.89 percent of Bodo people are found multidimensionally poor in Chirang district.

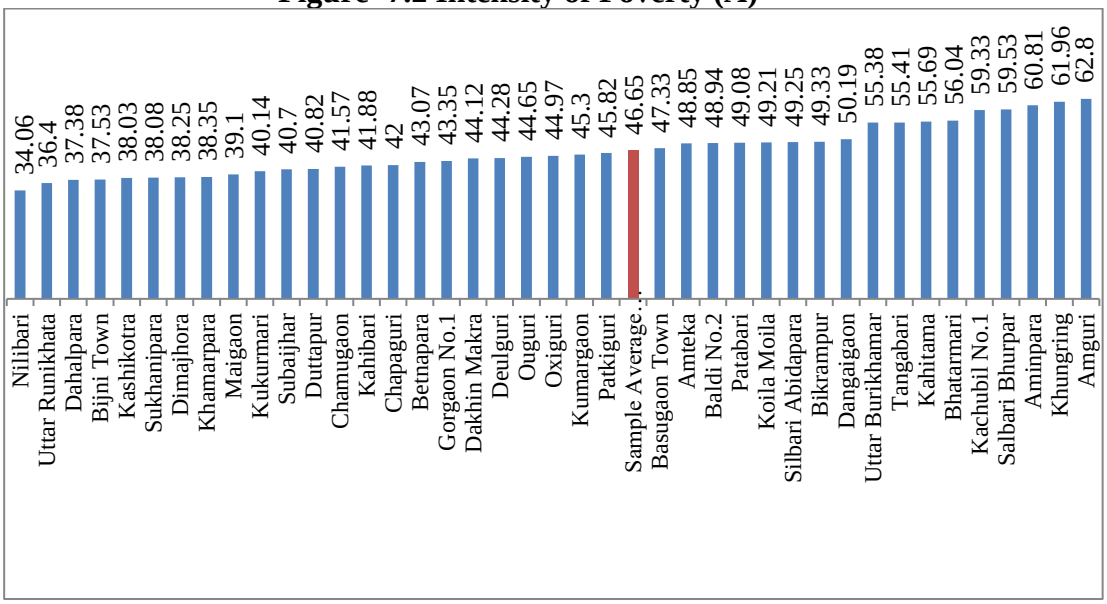
Assam HDR-2014 states that the headcount ratio is 30.10 for Assam and is 30.04 for Chirang district. Compared to the district and state level headcount ratios of AHDR-2014, the headcount ratio for Bodo people calculated in this study is higher. Thus, the proportion of multidimensionally poor people among Bodos is more compared not only to the state average of Assam but also to the all community in Chirang district.

Figure- 7.1 Headcount Ratio (H)



Source: Own calculation based on primary data

Figure- 7.2 Intensity of Poverty (A)

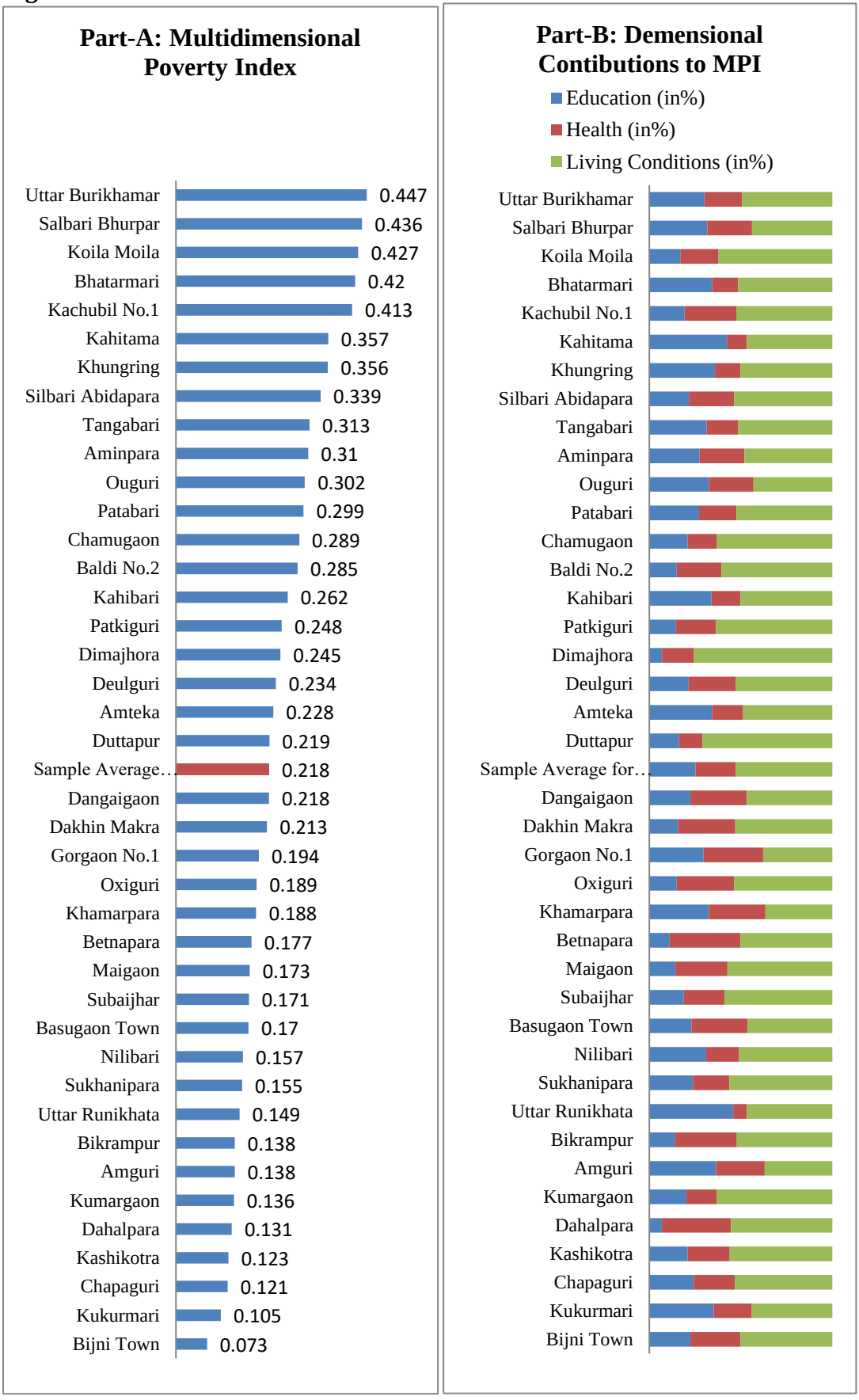


Source: Own calculation based on primary data

Another ingredient of MPI is the intensity of poverty (A) which is the average deprivation in weighted indicators. A high value in the intensity of poverty indicates a poor people's overlapping deprivation is high in the weighted indicators of three dimensions -education, health and living standard. According to Figure-7.2, the highest value of the intensity of poverty is 62.8 percent for Amguri village followed by 61.96 percent for Khungring village. These reflect that poor people of Amguri village are deprived in 62.8 percent of the weighted indicators and that are 61.96 percent for Khungring village. The lowest value of the intensity of poverty, in this study, is 34.06 and it is for Nilibari village. The intensity of poverty at the district level is 46.65 percent as a whole. Therefore, the intensity of poverty for Bodo people in Chirang district is 46.65 percent which is higher than the state level 16.54 percent of Assam (AHDR-2014).

As stated in Part (A) of the Figure-7.3 the MPI values of the sample villages are found in between value 0.073 to 0.447. The MPI values of most of the sample villages are very high. The MPI of Bijni town (0.073) is the lowest and the MPI of Uttar Burikhamar village (0.447) is the highest.

Figure- 7.3



Source: Own calculation from primary data

The MPI of Kukurmari (0.105), Chapaguri (0.121), Dahalpara (0.131), Kumargaon (0.136), Amguri (0.138), Bikrampur (0.138), Uttar Runikhata (0.149), Sukhanipara (0.155), Nilibari (0.157), Basugaon Town (0.17), Subaijhar (0.171), Maigaon (0.173), Betnapara (0.177), Khamarpara (0.188), Oxiguri (0.189), and Gorgaon No.1 (0.194) are not too much because, their MPI scores are less than 0.200.

But multidimensional poverty of Uttar Burikhamar (0.447), Salbari Bhurpar (0.436), Koila-Moila (0.427), Bhatarmari (0.42), Kachubil No.1 (0.413), Kahitama (0.357), Khungring (0.356), Silbari Abidapara (0.339), Tangabari (0.313), Aminpara (0.31) and Ouguri (0.302) are severe as because of their high MPI value. On the other hand, MPI values of the villages Dakhin Makra (0.213), Dangaigaon (0.218), Duttapur (0.219), Amteka (0.228), Deulguri (0.234), Dimajhora (0.245), Patkiguri (0.248), Kahibari (0.262), Baldi No.2 (0.285), Chamugaon (0.289) and Patabari (0.299) are also high.

It is found that 0.218 is the sample average MPI for the Bodo people of Chirang district. But, according to AHDR-2014, the MPI value for Assam is 12.49 percent (equal to 0.125) and that for Chirang district is 11.12 percent (equal to 0.111). Compared to these two figures, the multidimensional poverty of Bodo people in Chirang district is more than the state level MPI.

Special attention goes to the villages that have high MPI values. Uttar Burikhamar village has, unfortunately, the highest MPI value (0.447) with its 80.65 percent headcount ratio and 55.38 percent intensity of poverty. The second highest MPI value (0.436) of Salbari Bhurpar village represents misery of the 73.17 percent multidimensional poor people (headcount ratio) and 59.53 percent intensity of poverty. We definitely can imagine the suffering of 86.67 percent multidimensional poor people with their 49.21 percent intensity of poverty by seeing MPI value 0.427 at Koila Moila village located nearby the international border of Bhutan. We must mention the 75 percent headcount ratio and 56.04 percent intensity of poverty of Bhatarmari village to know the sufferings of Bodo people living there. Another poverty burdened village is Kachubil No.1 which has an MPI value of 0.413, headcount ratio of 62.5 percent and intensity of poverty of 59.33 percent.

Table-7.3 MPI and Contribution of Dimensional Deprivations (in %)

Village/ Town	Education	Health	Living Condition	MPI
Bijni Town	22.47	27.47	50.06	0.073
Kukurmari	35.2	20.8	44	0.105
Chapaguri	24.2	22.47	53.33	0.121
Kashikotra	20.91	23	56.09	0.123
Dahalpara	6.87	37.78	55.35	0.131
Kumargaon	20.3	16.4	63.3	0.136
Amguri	36.47	26.52	37.01	0.138
Bikrampur	14.1	33.7	52.2	0.138
Uttar Runikhata	45.87	7.34	46.79	0.149
Sukhanipara	23.91	19.93	56.16	0.155
Nilibari	31.05	17.98	50.97	0.157
Basugaon Town	23.02	30.68	46.3	0.17
Subaijhar	18.8	22.2	59	0.171
Maigaon	14.24	28.47	57.29	0.173
Betnapara	11.06	38.78	50.16	0.177
Khamarpara	32.65	30.84	36.51	0.188
Oxiguri	14.99	31.32	53.69	0.189
Gorgaon No.1	29.64	32.6	37.76	0.194
Dakhin Makra	15.67	31.33	53	0.213
Dangaigaon	22.52	30.84	46.64	0.218
Duttapur	16.25	12.89	70.86	0.219
Amteka	34.2	17.1	48.7	0.228
Deulguri	21.55	25.6	52.85	0.234
Dimajhora	6.98	17.46	75.56	0.245
Patkiguri	14.58	21.87	63.55	0.248
Kahibari	33.9	15.95	50.15	0.262
Baldi No.2	15.02	24.54	60.44	0.285
Chamugaon	20.89	16.07	63.04	0.289
Patabari	27.22	20.41	52.37	0.299
Ouguri	32.53	24.39	43.08	0.302
Aminpara	27.5	24.5	48	0.31
Tangabari	31.3	17.39	51.31	0.313
Silbari Abidapara	21.58	24.66	53.76	0.339
Khungring	35.93	13.97	50.1	0.356
Kahitama	42.4	11	46.6	0.357
Kachubil No.1	19.35	28.15	52.5	0.413
Bhatarmari	34.21	14.35	51.44	0.42
Koila Moila	16.97	20.88	62.15	0.427
Salbari Bhurpar	31.79	24.31	43.9	0.436
Uttar Burikhamar	30.14	20.5	49.36	0.447
Sample Average for Bodo People	**25.12**	**21.68**	**52.55**	**0.218**

Source: Own calculation based on primary data

7.3.3 Multidimensional Poverty Index and Contribution of Dimensional Deprivations

The contribution of each of the dimensions of education, health and living standards to the multidimensional poverty index reflects the structure of multidimensional deprivation. It reflects the percentages of deprivation in the dimensions to MPI of a village. For example, the deprivation shares of education, health and living condition dimensions are 36.47 percent, 26.52 percent and 37.01 percent respectively to the multidimensional deprivation of Amguri village (Table-7.3). Since the percentage of deprivation in living conditions (37.01%) is higher than education deprivation (36.47%) and health deprivation (26.52%), the Bodo people of the Amguri village are more deprived of living conditions compared to the other two dimensions.

Similarly, 27.50 percent, 24.50 percent and 48.00 percent of multidimensional deprivation of Aminpara village are contributed by the deprivations in education, health and living condition respectively. The Bodo people of Aminpara village are mostly deprived of living conditions compared to the other two dimensions. Accordingly, the contributions of dimensional deprivations to MPI for all sample villages are stated in Table-7.3.

According to Table-7.3 and Part-B of Figure-7.3, we see that the major percentage of multidimensional deprivation contributed by the dimension of living standards in all sample villages. The deprivation share of education dimension is lesser than the share of living conditions deprivation but more than the share of health dimension deprivation in most of the sample villages. On average, for the Bodo people in Chirang district, 52.55 percent multidimensional deprivation is contributed by the deprivation in living conditions, 25.12 percent by educational deprivation and 21.68 percent by health dimensional deprivation. This information confirms that Bodo people in the Chirang district are mostly deprived of the dimensions of living conditions. On the other hand, educational deprivation is more than the health deprivation for the Bodo people of Chirang district.

7.4 Conclusion

In this chapter, we have found that human deprivation is nothing but the capability deprivation of the people. The capability deprivation is multidimensional. Multidimensional poverty analysis is a measure of capability deprivation. Multidimensional Poverty Index (MPI) is a measure of poverty. Poverty is caused by the capability deprivation of human. Thus, MPI is a measure of capability deprivation in the dimensions of education, health and living conditions. Here, we have calculated the MPI for Bodo people in Chirang district to find out their multidimensional deprivation.

Bodo people in the Chirang district have poor socioeconomic status and low HDI. Hence, they are deprived of many capabilities or real opportunities. We get high MPI values showing extreme multidimensional poverty for most of the sample villages. As per contributions of dimensional deprivations to MPI, deprivation in the living conditions is the highest. And it is followed by the percentage share of deprivation in the education dimension. Compared to the deprivations in education and health, Bodo people in the study area are mostly deprived of living conditions.

In MPI calculation, the deprivation of a household (including its all family members) in living conditions is represented by no electricity, no access to clean drinking water, no access to adequate sanitation, has a dirty floor, uses of dirty cooking fuel and not having at least one asset related to access to information (radio, television or telephone) or not having at least one asset related to mobility (bike, motorbike, car, truck or tractor) or at least one asset related to livelihood (refrigerator, agriculture land or livestock). As stated above, the percentage of Bodo people in Chirang district no access to electricity is 27.5 percent, no access to clean drinking water is 76.4 percent, no access to adequate sanitation is 61.9 percent, living in a dirty floored house is 67 percent, using dirty cooking fuel is 56.94 percent and no access to information or no access to asset related to mobility or livelihood is 9.68 percent. Thus, Bodo people in the Chirang district are extremely deprived of the necessities of living.

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Annexure-C

Number of Sample Households Deprived of MPI Indicators

Village	Sample Households	Households Deprived of MPI Indicators									
		No One has Completed Six Years of Schooling	At At least One School-Aged Child Not Enrolled in School	At Least One Family Member is Malnourished	One or More Children Have Died in the Family	Not Access to Electricity	Not Access to Clean Water	Not Access to Adequate Sanitation	Living in Dirty Floor	Use Dirty Cooking Fuel	Not Access to Information
Amguri	15	2	2	6	0	3	6	2	11	9	2
Aminpara	10	2	1	5		3	10	7	7	7	2
Amteka	15	3	3	3	2	4	8	7	5	6	5
Betnapara	10	1	0	3	1	4	10	5	8	10	0
Bhatarmari	8	5	2	3	0	8	8	7	6	7	2
Bikrampur	10	0	2	2	0	3	10	4	6	10	2
Baldi No.2	9	1	1	3	1	9	9	9	9	9	2
Chamugaon	8	3	0	1	1	8	8	8	7	7	1
Chapaguri	19	3	1	4	2	1	14	7	9	10	2
Dahalapara	9	1	0	2	1	0	9	2	5	6	1
Dakhin Makra	13	3	1	3	2	0	13	7	7	13	1
Dangaigaon	12	2	0	2	2	0	12	6	5	5	1
Deulguri	10	2	1	2	1	1	10	10	10	10	0
Dimajhora	8	1	0	1	1	4	8	8	8	8	2
Duttapur	30	4	2	2	2	11	27	30	25	29	7
Gorgaon No.1	7	1	1	1	1	1	7	6	6	7	1
Kahibari	6	2	1	1	0	0	4	4	3	2	0
Kahitama	13	6	2	3	1	7	10	12	11	10	4

Kashikotra	14	2	1	1	1	2	12	12	7	3	2
Khamarpara	10	2	2	2	1	0	5	2	3	3	1
Khungring	8	3	3	2	1	4	8	7	5	6	5
Koila Moila	6	2	1	1	2	6	6	6	6	6	3
Kukurmari	21	0	1	1	1	0	5	2	5	4	0
Kumargaon	9	0	1	2	0	2	6	1	4	2	2
Kachubil No.1	5	1	1	3	0	5	5	5	5	5	2
Maigaon	7	1	0	1	1	0	7	7	7	7	0
Nilibari	13	4	0	2	1	1	8	4	7	1	1
Ouguri	8	4	0	2	1	0	7	7	7	4	0
Oxiguri	15	2	2	2	3	3	12	15	15	15	0
Patabari	9	3	2	2	1	3	9	9	9	9	3
Patkiguri	6	1	1	1	0	6	6	6	6	6	1
Salbari Bhurpar	8	3	3	4	1	3	8	8	8	8	2
Silbari Abidapara	9	3	1	2	1	3	8	8	8	8	2
Subaijhar	6	0	2	4	0	4	6	1	10	6	3
Sukhanipara	6	1	1	1	0	0	6	6	6	2	2
Tangabari	9	4	1	1	2	8	8	6	7	6	1
Uttar Burikhamar	6	4	2	2	1	5	5	5	5	4	1
Uttar Runikhata	11	4	1	2	1	0	6	3	6	3	0
Basugaon Town	13	0	2	2	1	1	4	4	4	3	1
Bijni Town	19	1	1	1	2	0	4	4	4	2	0
Total	**430**	87	48	88	41	122	334	269	292	278	67
% of Households	**-----**	20.23	11.14	20.47	9.53	28.37	77.67	62.56	67.91	64.65	15.58

Source: Own calculation from primary data

Annexure-D

Population Deprived of MPI Indicators in the Sample Villages and Towns

Village	Population			Population Deprived of MPI Indicators									
	Male	Female	Total	Not Completed Six Years of Schooling	Not Enrolled in School	Malnourished	Children Died	Not Access to Electricity	Not Access to Clean Water	Not Access to Adequate Sanitation	Living in Dirty Floor	Use Dirty Cooking Fuel	Not Access to Information
Amguri	38	35	73	11	11	28	0	16	28	10	48	36	10
Aminpara	29	26	55	10	18	32	0	19	55	38	38	32	15
Amteka	39	38	77	18	18	12	15	21	41	38	34	34	18
Betnapara	25	24	49	6	0	16	5	20	51	24	41	31	0
Bhatarmari	19	18	37	22	9	13	0	36	36	29	27	29	6
Bikrampur	21	22	43	0	8	12	0	14	43	19	26	43	7
Baldi No.2	24	21	45	6	5	14	4	43	43	43	43	43	7
Chamugaon	19	18	37	13	0	5	5	36	36	36	31	31	2
Chapaguri	39	41	80	7	7	9	4	3	21	21	21	17	3
Dahalpara	18	19	37	2	0	11	3	0	37	7	21	26	2
Dakhin Makra	31	29	60	12	3	17	7	0	60	34	34	60	3
Dangaigaon	23	24	47	9	4	12	6	0	46	25	20	20	2
Deulguri	28	25	53	11	5	16	3	5	53	53	53	53	0
Dimajhora	18	21	39	4	0	7	3	18	39	39	39	39	11
Duttapur	69	67	136	20	10	16	7	57	121	124	125	90	0
Gorgaon No.1	13	16	29	2	8	8	3	2	29	21	21	29	2
Kahibari	17	15	32	12	5	8	0	0	25	25	18	15	0
Kahitama	34	33	67	15	14	11	4	12	47	60	48	47	11
Kashikotra	34	31	65	7	3	7	4	7	56	56	30	14	7

Khamarpara	25	24	49	11	7	13	4	0	26	10	13	13	3
Khungring	23	19	42	18	18	9	5	21	47	41	27	35	5
Koila Moila	16	11	27	10	3	8	8	30	30	30	30	30	12
Kukurmari	52	43	95	0	22	9	4	0	31	13	31	22	0
Kumargaon	23	26	49	0	5	8	0	9	33	5	22	9	4
Kachubil No.1	14	11	25	4	7	16	0	23	23	23	23	23	9
Maigaon	20	14	34	5	0	7	3	0	34	34	34	24	0
Nilibari	33	32	65	19	0	13	5	3	42	18	37	5	7
Ouguri	21	18	39	20	0	12	3	0	30	30	30	13	3
Oxiguri	39	37	76	5	7	13	14	10	76	76	76	76	0
Patabari	22	19	41	9	9	12	3	9	41	41	41	21	9
Patkiguri	18	19	37	4	4	12	0	37	37	37	37	22	4
Salbari Bhurpar	22	20	42	12	22	23	3	12	41	41	41	41	8
Silbari Abidapara	17	21	38	10	4	13	3	14	32	32	32	32	4
Subaijhar	16	16	32	0	15	17	0	18	32	5	32	32	9
Sukhanipara	13	14	27	3	3	5	0	0	27	27	27	6	8
Tangabari	24	22	46	24	3	5	10	42	42	33	37	26	2
Uttar Burikhamar	16	18	34	17	8	12	4	31	31	31	31	23	5
Uttar Runikhata	32	29	61	20	5	10	4	0	31	15	31	18	0
Basugaon Town	33	31	64	0	15	13	7	3	23	23	23	15	3
Bijni Town	44	48	92	2	7	4	7	0	18	18	18	7	0
Total	**1061**	**1015**	**2076**	**380**	**292**	**488**	**160**	**571**	**1586**	**1285**	**1391**	**1182**	**201**
% of Population	**51.11**	**48.89**	**---**	**18.3**	**14.07**	**23.51**	**7.71**	**27.5**	**76.4**	**61.9**	**67**	**56.94**	**9.68**

Source: Own calculation from primary data

Annexure-E

Calculation of the Multidimensional Poverty Index

Village: Amteka District: Chirang (Assam)

Sl. No	Indicator	Indicator weight	Households															Total
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	Family Size		**5**	**3**	**5**	**2**	**4**	**4**	**8**	**4**	**10**	**4**	**5**	**5**	**7**	**3**	**4**	**=73**
Education																		
I	No one has completed six years of schooling	**(1/3) ÷ 2 = 16.7%**	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
II	At least one school-age child not enrolled in school	**(1/3) ÷ 2 = 16.7%**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Health																		
I	At least one member is malnourished	**(1/3) ÷ 2 = 16.7%**	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
II	One of more children have died in the family	**(1/3) ÷ 2 = 16.7%**	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	
Living Condition																		
I	No electricity	**(1/3) ÷ 6 = 5.6%**	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	
II	No access to clean drinking water	**(1/3) ÷ 6 = 5.6%**	1	1	1	1	0	1	1	1	1	0	0	0	1	1	0	
III	No access to adequate sanitation	**(1/3) ÷ 6 = 5.6%**	1	0	0	0	1	1	1	1	1	0	0	1	0	1	1	
IV	House has dirt floor	**(1/3) ÷ 6 = 5.6%**	1	0	1	0	0	1	1	1	1	1	0	1	1	1	1	
V	Household uses “dirty” cooking fuel (dung, firewood or charcoal)	**(1/3) ÷ 6 = 5.6%**	0	0	1	0	1	1	1	1	0	0	0	1	1	1	1	
VI	Household has no access to information and has no access related to mobility or access related to livelihood	**(1/3) ÷ 6 = 5.6%**	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	
Results																		
Household deprivation score- ‘c’ (sum of each deprivation multiplied by its weight)			**39.1**	**5.6**	**16.8**	**5.6**	**33.5**	**22.4**	**39.1**	**28**	**33.5**	**11.2**	**16.7**	**16.8**	**33.5**	**61.4**	**33.5**	
Is the household poor (if c ≥ 33.3 percent the Yes otherwise No) ?			Yes	No	No	No	Yes	No	Yes	No	Yes	No	No	No	Yes	Yes	Yes	

Source: Own calculation from primary data with UNDP's example of calculation of households' MPI.
N.B.: 1. Assets: not having at least one asset related to access to information (radio, television or telephone) or having at least one asset related to information but not having at least one asset related to mobility (bike, motorbike, car, truck, animal cart or motorboat) or at least on asset related to livelihood (refrigerator, arable land or livestock).
2. A household is deprived in an indicator then 1 and otherwise 0.

According to Appendix-C, weighted deprivation of Household-1 is 39.1 [(1x16.7+1x5.6+1x5.6+1x5.6+1x5.6) = 39.1]. Similarly, weighted deprivation of Household-2 is 5.6, Household-3 is 16.8, Household-4 is 5.6, Household-5 is 33.5, Household-6 is 22.4, Household-7 is 39.1, Household-8 is 28, Household-9 is 33.5, Household-10 is 11.2, Household-11 is 16.7, Household-12 is 16.8, Household-13 is 33.4, Household-14 is 61.4 and of Household-15 is 33.5.

$$\text{Headcount Ratio (H)} = \frac{(5+0+0+0+4+0+8+0+10+0+0+0+7+3+4)}{(5+3+5+2+4+4+8+4+10+4+5+5+7+3+4)} = 0.5616 =$$

$$= 56.16 \text{ percent}$$

Since the headcount ratio is 0.5616, 56.16 percent of people of Amteka village live in poor households,

$$\text{Intensity of Poverty (A)} = \frac{39.1\text{x}(5+8) + 33.5\text{x}(4+10+7+4) + 61.4\text{x}3}{(5+4+8+10+7+3+4)} = 37.32 \text{ percent}$$

It means on average, a poor person is deprived in 37.32 percent of the weighted indicators.

Thus, the multidimensional poverty index for Amteka village is

MPI = Headcount Ratio (H) x Intensity of Poverty (A) = 0.5616 x 0.3732 = 0.2096

Contribution of deprivation in

$$\text{Education} = \frac{16.67x(5+3)+16.67x(3+4)}{(5+3+5+2+4+4+8+4+10+4+5+5+7+3+4)}/21.0 = 16.34 \text{ percent};$$

$$\text{Health} = \frac{\frac{16.67x(4+10+7)+16.67x(8)}{(5+3+5+2+4+4+8+4+10+4+5+5+7+3+4)}}{21.0} = 31.6 \text{ percent};$$

and in $$\text{Living Codition} = \frac{5.56x(5x4+4x3+8x4+10x3+7x3+3x5+4x3)}{(5+3+5+2+4+4+8+4+10+4+5+5+7+3+4)}/21.0 = 51.60 \text{ percent}$$