

**The Role of Technical and Vocational Education and Training (TVET) on
Livelihood Development of the Chakma Diploma Engineers in
Khagrachari District.**

Researcher

Engr. Pradipta Khisa

Vice Principal and Principal (In charge)

Cox's Bazar Polytechnic Institute

Jhlongja, Cox's Bazar.

Supervisor

Dr. Syeda Tahmina Akhter

Professor and Director,

Institute of Education and Research

University of Dhaka.

Research and Knowledge Management Cell

Directorate of Technical Education

Agargaon, Dhaka.

Declaration

I would like to declare that the research report titled, ‘The Role of Technical and Vocational Education and Training (TVET) on Livelihood Development of Chakma Diploma Engineers in Khagrachari District’ submitted to the ‘Research and Knowledge Management Cell’, Directorate of Technical Education is an original work and has not been submitted to anywhere or for any publication.

(Engr. Pradipta Khisa)

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ABSTRACT

Chakma students from Khagrachari district have been studying in various Polytechnic Institutes all over the Bangladesh since long. But there is no study have done previously regarding the role of TVET (Technical and Vocational Education and Training) on livelihood development of chakma diploma engineers in Khagrachari. That's why the present research work has undertaken to focus lime light on TVET among the chakma community in Khagrachari.

It is observed that most of the chakma students belong to Khagrachari are interested to study in Chattagram, Kaptai, and Cox's Bazar; due to economic insolvency, **data were collected from the respondents.**

It is to be noted that since there was no census or survey regarding chakma diploma engineers, there is no data available regarding population size on behalf of BBS, BANBEIS and district administration.

Keeping the objective of the study in view purposively three catchment area, namely Khagrachari, Chattagram and Cox's Bazar were selected as study area. To know the role of TVET on livelihood development of chakma diploma engineers is the main objective of my study.

A total of 32 respondents' diploma engineer with the role of TVET on livelihood development and this study is both qualitative and quantitative in nature. The respondents were evaluated by conducting Key Informant Interview (KII), Focus Group Discussion and questionnaire survey among teacher and principals of the Polytechnic Institute.

It is evident from **questionnaire survey**, KII and FGD findings that the livelihood of chakma diploma engineers has been improving significantly, for example; there is a trend of increasing monthly income, improving residence, health and sanitation, safe drinking water, possession of motor vehicle and a standard livelihood among the chakma diploma engineers, which was absent in chakma society for long time. So it can be said a positive impact of technical education among the chakma community, which is supported by KII and FGD participants.

It is obvious that there is no shortcut way to become self reliant and well established after passing 14 years of schooling in comparison with 17 years schooling in masters (general education). It is gathered from KII and FGD that chakma students have poor economic background. That's why it is the easiest way of chakma diploma engineers to become well established through technical education. After getting job, they are capable to bear family expenditure and enjoy a lavish life in society.

It is clearly visible that only due to technical education, job placement has become easier in comparison with general education; which is also supported by KII and FGD discussants.

At last, it is evident that the livelihood of chakma diploma engineers has been improving significantly than earlier through TVET (Technical and Vocational Education and Training).

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List of Acronyms and Glossary

ADB	Asian Development Bank
BANBEIS	Bangladesh Bureau of Educational Information and Statistics
BARI	Bangladesh Agricultural Research Institute
BBS	Bangladesh Bureau of Statistics
BDT	Bangladeshi Taka
BIDS	Bangladesh Institute of Development Studies
BMET	Bureau of Manpower, Employment & Training
BOESL	Bangladesh Overseas Employment and Services Limited
BRAC	Bangladesh Rural Advancement Committee
BTEB	Bangladesh Technical Education Board
BUET	Bangladesh University of Engineering and Technology
CBT&A	Competency Based Training & Assessment
CBT	Competency Based Training
CDC	Community Development Committee
CHT	Chittagong Hill Tracts
CHTDF	Chittagong Hill Tracts Development Facility
CHTLDRRC	Chittagong Hill Tracts Land Dispute Resolution Commission
CHTRD	Chittagong Hill Tracts Rural Development
CHT	Chittagong Hill Tracts
CNG	Compressed Natural Gas
CPD	Continuing Professional Development
DAE	Department of Agricultural Extension
DFID	Department for International Development
DMK	Design and Monitoring Frame Work
DSP	Decentralized Seed Production
DTE	Directorate of Technical Education
e.g.	For Example
EPZ	Export Processing Zone
et. al.	And others
FAO	Food and Agriculture Organization
FFS	Farmers Field School
FEJB	Forum of Environmental Journalists of Bangladesh

FGD	Focus Group Discussion
FSC	Farmers Service Centre
GDP	Gross Domestic Product
GNP	Gross National Product
GOB	Government of Bangladesh
HDC	Hill District Council
HDI	Human Development Index
HRD	Human Resources Development
HSC (Voc)	HSC: Higher Secondary Certificate (Vocational)
ibid	In the Same Source (of a previous reference)
ICIMOD	International Centre for Integrated Mountain Development
ICT	Information and Communication Technology
i.e.	That is
ILO	International Labour Organization
ISC	Industry Skills Councils
IT	Information Technology
Jhumming	Slash and Burn Agriculture
KII	Key Informant Interview
LAR	Land and Resettlement
LGED	Local Government Engineering Department
LMIS	Labour Market Information System
MOCHTA	Ministry of Chittagong Hill Tracts Affairs
MOEWOE	Ministry of Expatriates Welfare and Overseas Employment
NGO	Non-Government Organization
NSDC	National Skills Development Council
NTVQF	National Technical & Vocational Qualifications Framework
PCY	Per Calender Year
RC	Regional Council
RF	Reserve Forest
RPL	Recognition of Prior Learning
RTO	Registered Training Organizations
SAM	Severe Acute Malnutrition
SDG	Sustainable Development Goals
SDP	Skill Development Project

SEIP	Skills for Employment and Investment
SSC (Voc)	Secondary School Certificate (Vocational)
STEP	Skills and Training Enhancement Project
Swidden	Slash and Burn Agriculture
TSC	Technical School and College
TTC	Technical Training centre
TTTC	Technical Teachers Training College
TVET	Technical and Vocational Education and Training
UNB	United News of Bangladesh
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund
USF	Unclassed State Forests
VCF	Village Common Forest
VGD	Vernarable Group Development
VGf	Vernarable Group Feeding
VTTI	Vocational Teachers Training Institute
WFP	World Food Programme

Chapter one

Introduction of the Study

1.1. Introduction

Chakma is the name of the largest Ethnic community in the greater Chittagong Hill Tracts (CHTs), eastern area of Bangladesh, known as Khagrachari. The Chakmas are mainly live in Khagrachari and Rangamati. According to primary census report of 2011, the Chakma population is 4,44,748 (Chakma population in Khagrachari district is 1,61,960), while the second largest ethnic group Marma is 2,02,974. (Source: website of district administration, Khagrachari and BBS).

There are 9(nine) Upazillas in Khagrachari, namely Khagrachari sadar, Dhiginala, Panchari, Matiranga, Guimara, Manikchari, Mahalchari, Laxmichari and Ramgarh. The total population of Khagrachari district is 5,18,463. Population density per square kilometer is 192. Literacy rate is 44.07%. Total educational institutions are 547, where college-18, high school-71, government primary school-420, kindergarten-09, Madrasah-13, Ebtadae madrasah-22, other religious institution-03, Technical school and college-01, Textile vocational institution-01, Technical training centre-01. Khagrachari was declared district in 7th November, 1983 (Source: website of district administration, Khagrachari).

The people of Khagrachari live on Jhum cultivation (slash and burn agriculture), plain land cultivation, agro food farming and gardening, government service, teaching profession, small business, contracting business etc. According to CHT expert and researcher of ICIMOD, Golam Rasul: "Agriculture remains a key source of livelihood for the majority of rural people in the Khagrachari. More than 70% of the rural population depends on agriculture, forestry, fisheries, and horticulture for their livelihood. The vast majority of the land in the region consists of steep and undulating hill slopes. According to the FAO (2003), only about 5% of land in the CHT is suitable for intensive agriculture. Agriculture has a very limited capacity to provide gainful employment to the growing workforce. About a quarter of households depend on wage labour for their livelihoods. But the demand for wage labour is low due to the limited non-farm wage opportunities and the unemployment rate is very high. Unemployment and economic hardship, along with limited economic opportunities, have triggered social conflicts and ethnic tensions in the region." [Rasul, Golam. (2015, May): A Strategic Framework for Sustainable Development in the Chittagong Hill Tracts of Bangladesh. International Centre for Integrated Mountain Development, Kathmandu and Ministry of Chittagong Hill Tracts Affairs, Government of the People's Republic of Bangladesh, P-9].

Due to Kaptai dam, lack of cultivable land; insufficient production in Jhum cultivation made the chakmas to shift their livelihood style. Then they inclined into Horticulture, i.e.- fruits garden, cotton cultivation, Kasava (widely known as shimei/shimul alu), zinger, tarmaric, bamboo, segun, gamari etc. Very small group of Chakma community are involved in fishing activity. The ultra-poor people of the Chakma community lives-on eating wild potato, vegetables from the Jhum, selling of fire wood or green bamboo (bachchuri) etc, since low production of Jhum cannot provide enough food to survive round the year. The economic backbone of hilly people as well as Chakma community had been destroyed after construction of Kaptai dam. The causes may be: decreasing cultivable land, insufficient production in Jhums, destruction of ripen paddy as a result of water level increasing at Kaptai dam, limited job market due to non-construction of industry. Backwardness in technical education and other means of livelihood, i.e.- handicrafts, carpentry, masonry, pottery, blacksmithy (Iron works), jewellery, barbary etc. participation of Chakma people is almost absent and backward agriculture system in respect of local geography made an end result of total unemployment. After construction of Kaptai dam, the Chakma people day by day inclined to general education and later to the technical education.

According to CHT expert Golam Rasul: “Low levels of entrepreneurship, and limited private investment in industry, services, and commercial enterprise, have resulted in limited employment and livelihood opportunities in the non-farming sector in the CHT. The farm and non-farm sectors are unable to absorb the growing labour force productively and a significant portion of the youth remained un-employed or underemployed. Moreover, it is difficult for people from the CHT to take up job opportunities outside the region because of the generally low level of education, poor vocational skills, inadequate information, and poor networks. So far, only a few thousand youth have found work in Dhaka and Chittagong in the garment and other industries. Although a huge number of people from the plains are working abroad and sending back remittances, very few people from the CHT and almost none from the ethnic communities, are able to take advantage of the international labour market. The challenge is how to prepare people to seize the opportunities offered by the national and global labour market and business.” [Ibid, P-9].

Sustainable development in the CHT is hugely challenged by the remoteness and poor accessibility, poor infrastructure and social and economic services, rapid socioeconomic change, and growing stress from climate change with inadequate measures to support

adaptation. Although progress has been made in certain areas, success stories remain limited and the expected benefits in terms of socioeconomic development and environmental protection have yet to emerge. [Ibid, P-7].

Today, education system should be job centric or job oriented. Technical education should be expanded for producing confident, job centric graduates or creating self-employment. There is no alternative to technical education to face the challenge of socio-economic problems. Education system should be more and more realistic, based on livelihood to solve the problems of unemployment. Our present education system or educational institutions are producing thousands of literate jobless persons. Unemployment should be driven out by introducing job centric or job oriented, livelihood based technical education. [Pradipta Khisa (2003): Shahjalal University: A Symbol of Pride, but....., Proyas. A 'SUOA' publication, SUST, Sylhet, P-45]. So, we should put our emphasis to produce chakma diploma Engineers to encounter unemployment problem as well as livelihood development of chakma diploma engineers in Khagrachari district. I think, it will reduce socioeconomical and political problems, like social conflicts, violence and ethnic tensions through employment and open up new avenues of economic opportunities as well as national and global market and foreign remittance earning through overseas employment in the long run.

There are 3(three) TVET institutions in Khagrachari, TSC-01, TTC-01, Textile VOC-01. In spite of these 3(three) institutions, the Ethnic minority peoples (Chakma) have been studying various TVET institutions all over the Bangladesh, such as Polytechnic, Monotechnic (Graphic Arts, Glass & Ceramic Institute etc.) Institute etc. Passed out diploma engineers from various TVET Institutions and their employment status as well as their livelihood development is my subject matter of the research study. So, first of all I need pass out student's present status of employment and at last as a consequence of their livelihood development.

Figure-1: Khagrachari District



Table-2: Khagrachari District at a glance

Sl. No.	Title	Description
1	Creation of District	7 th November 1983
2	Boundary	India Tripura state in the North and North-Eastside Rangamati Hill District in the East and South-East side and Chittagong District in the South and South-West side.
3	Post Code	4400 (Sadar)
4	Area	2749.16 sq. km.
5	Administrative Upazilla	(a) Khagarachari Sadar (b) Panchari (c) Mahalchari (d) Manikchari(e) Ramgarh(f) Laxmichari (g) Dighinala (h) Matiranga(i) Guimara
6	Pourasava	3 (Khagrachari) Matiranga and Ramgarh)
7	Union	38
8	Mouza	121
9	Village	1702
10	Literacy Rate	46%
11	Main Community	Chakma, Marma, Tripura and Bengali.
12	Population Distribution	Bengali – 2,96,930 Chakma – 1,61,960 Tripura – 86,196 Marma – 67,011 Santal, Tanchangya& Others – 1,820
13	Bazar(Local Market)	35
14	River	03 (Chengi, Mainy and Feni)
15	Roads	Metaled Road– 296.36 KM Semi Metaled Road– 261 KM
16	Cultural Institution	(a) Ethic Minority Institute – 01 (b) Shishu Academy – 01
17	Press Club	04 (Khagrachari Sadar, Dighinala, Ramgarh andPanchari
18.	Natural Beauty (Famous Tourist Places)	(a) Alutila Tourist Centre (b) Alutila Mysterious Cave (c) District Council Horticulture Park (d) NaonchariDebota Pond (e) Richhang Waterfall (TerangTaikalai) (f) Residence of Mong Raja (g) Ramgarh Tea Garden (h) Agricultural Research Center (i) Ramgargh Hanging Bridge (j) Parjatan Motel (k) Mayabini Lake
19	District Jail	01
20	Stadium	01

Sl. No.	Title	Description
21	Educational Institutions	(a) College-08 (Combine-07), (Womens-01) (b) High School-71 (Govt-05, Private-66,Boys-01, Girls-07, Combine-63) (c) Primary School-420 (Goof-320, Private-100) (d) Kindergarten-09 (e) Madrasah-13 (f) Ebtedayee Madrasah-22 (g) Other Religious Institution-03 (h) Technical School & College-01 (i) Textile Vocational Institute-01 (j) Technical Training Center-01
22	Religious Institution	(a) Mosque – 255 (b) Pagoda – 263 (c) Temple – 207 (d) Church – 263
23	Tea Garden	01 (Ramgarh)
24	Police Station	09
25	Paddy & Fruits	(a) Paddy-Rice, Wheat, Maize, Mustard, Cotton, Jute, China Nut, Sugarcane, Winter Vegetable etc. (b) Jack Fruits, Mango, Litchi, Pineapple, Banana, Papaya, Guava, Lemon, Melon etc.
26	Area of Forest & Forrestal	1,42,967 Hector, Pik, Koroi, Gamari, Jarul, resources Chapali, Mehagani, Arjun, etc are abundant in the district. In addition, various types of bamboos are available there.
27	Rubber Plantation Area	3200 Hector
28	Promising Sectors	(a) Tourism (b) Agriculture (c) Social/ Community Forestation (d) Bamboo Based Paper Mill (e) Handi Craft (f) Rubber Plant.

Source: Website of the District Administration, Khagrachari.

Figure-2: Map of Khagrachari District

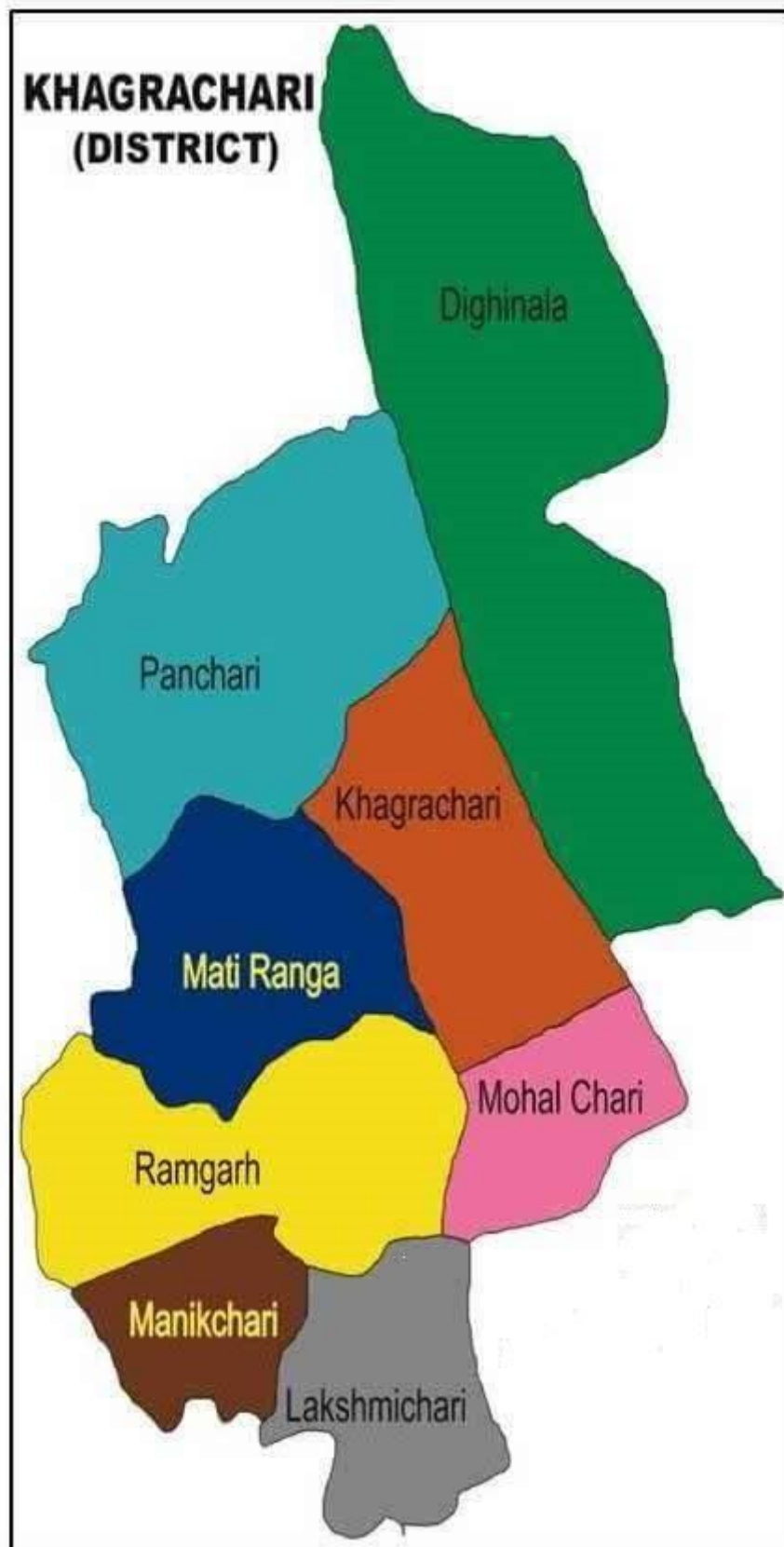


Table-3: Land type and their use in Khagrachari District

Sl. No.	Title	Description
1	Land Category	(a) Low land or Marshy land – 2% (b) Plain or Silted land – 25% (suitable for Robi crop) (c) Medium high land – 8% (suitable for yearly crop or tree) d) High land – 17% (suitable for wooden tree, Bamboo, Rubber tree) (e) Very highly and full of jungle – 48%
2	Land use	(a) Total agricultural land – 99,271 acre (b) Cultivable land – 1,49,537 acre (c) Non cultivable land – 4,72,702 acre (d) Barren land – 20,629 acre (e) Khas land – 3,27,915 acre (f) Land under irrigation – 95,168 acre (g) One- time cultivable land – 51,752 acre (h) Two times cultivable land – 35,230 acre (i) Three times cultivable land – 12,289 acre (j) Forest land – 8,289 acre
3	Crops	Rice, Maize, Mustard, Cotton, China nut, Sugarcane, Zinger, Turmeric, Arum, Potato, Pumpkin, Cucumber, Balsam Apple, Sesame, Sweet Bitter Gourd, Green Chili, Bean, Radish, Snake Gourd etc.
4	Fruits	Jackfruit, Pineapple, Banana, Papaya, Guava, Lemon, Plum, Watermelon, Mango, Malta, Orange, Pomelo etc.
5	Forest Resources	Forest resources are abundant in 8,358 acres of land in this district, e.g.-Tik, Karoi (Procera), Gamari, Jarul, Chapalish, Mehagani, Arjun and various kinds of bamboo etc.

Source: Bornil Khagrachari, published by district administration of Khagrachari; 2000.

1.2 Statement of the Problem:

It is widely assumed and believed that there is a great role of TVET on both employment and livelihood development of Chakma diploma engineers. But there is not a single study done earlier to the specific topic with authentic proof to establish it. That's why it may be a wonderful research topic if it is taken for methodological study. So, I have chosen the topic to investigate and assess it with extensive field study along with methodological approaches using various instruments of research methodology based upon authentic data base or documents. Hence the research work.

During the period of Pakistani rule and immediately after liberation war, there was trend of fascination towards technical education among the chakma youths. Those who served in technical profession had earned a handsome salary and a very well -off life in the society. So, youngsters found interest in technical education. But presently we found a fluctuation towards

technical education. It seems to be that technical education is not an interesting subject or there is confusion of future life after passing out. Because job is not available than earlier. Social status of diploma engineers is not upto the mark. Till now, they cannot claim as an engineer publicly, because a person can write engineer before his name after completions of graduation from a recognized university.

The Bangladesh Technical Education Board (BTEB) cannot provide a certificate of graduation, because it is merely a board. Though the tenure of diploma in engineering has been enhanced from 3 years to 4 years to make them competent to appear BCS examination. Unfortunately, graduation in generation college has been enhanced its tenure as 3 years (which was 2 years after passing HSC). So, it was an impediment to diploma engineers to appear before BCS and claiming as equivalent with graduation. It goes in vain all attempts of institution of diploma engineers to make equivalent to graduation of diploma engineers.

At present, there is a problem of career development of diploma engineers. Previously a diploma engineer can be a chief engineer at the end of his service tenure. But now they get retirement only at the joining post of sub assistant engineer which is an irony of fate of diploma engineers. So, present generation both chakma and Bengali youth are not fascinated with diploma in engineering. After a careful observation, it is evident that most of students of diploma engineering come of either middle income or poor family, who need an immediate job to reduce family burden or to run and maintain the whole family. So, it seems to me, social status and career development issue is a burning issue among the future diploma engineers or students. This burning issue should be solved immediately to make TVET education much more attractive.

The government has a vision to make 60% students technically literate in 2041. Presently it is claimed that literacy rate in technical education is around (16-17) %. But it should be noted that previously it was in single digit. Guardians of the chakma family are not aware on importance of technical education and there is no supportive home environment prevailing in Khagrachari in favour of technical education. Till now, guardians in remote areas and also in town are not much aware about the employability of TVET.

Another problem is in the remote areas that schools are far away from home and they could not attend properly to the classes. So, there is a lacking of proper education for creating a sound mathematical background for engineering. As a result, they remain behind the students of the

plains, with some exceptions. Although there are many problems regarding diploma in engineering, it is to be noted that till now, diploma in engineering is the best way to get a job more and more easily. A diploma engineer can serve at any job, irrespective of his degree.

In comparison to general education, technical education can open up new avenues of opportunities, such as entrepreneurship etc. Those, who still jobless diploma engineers can become an entrepreneur. But chakma students have lack of confidence or they have not enough capital to invest. Till now, they feel insecure to invest enough money through bank loan. Because they think political insecurity in Khagrachari will throw them to the street. Still most people have been suffered from extortion from the local political parties, which make them timid and confidence less.

Nobody can find enough entrepreneurs among chakma community or from the diploma engineers. But still there is some jobless diploma engineers. So, entrepreneurship development is also a major challenge among chakma diploma engineers. Government and local administration should come forward to encourage them into entrepreneurship. Employment bank (Kormo Songsthan Bank) can provide soft loan/ easy loan to chakma diploma engineers to make them entrepreneur. Kormo Songsthan Bank can provide loan only against their diploma certificate, which will be an easy process for the chakma diploma engineers.

One psychological problem is within chakma community that though they are honest and feeling happy with least items, but they are very impatient. They cannot have enough patience to recover business shock or business fluctuations. They always find easy way to survive. They are not willing to run a business with multiple problems and unrest situations. They find pleasure to live in a low income but tension free life. That's why there were no visible business magnets among the chakma community.

The alarming news is that in the present days we do not find enough chakma students in the TVET institutions. But they are very much interested in general education. Because social status of a college graduate or post graduate from university is most prestigious than that of diploma engineers. So, social status of the diploma engineers should be enhanced through incentives (extra increment or something like this) from the government side. Government may provide rent free houses for the emergency service engineers (PDB, REB, BTCL, R&H etc.). Which will be a land mark progress for making it attractive to youths.

1.3 Importance and Rationale of the Study:

I have been serving in TVET Institution (Polytechnic Institute) for over 15 years. In addition, I served over 10 years as practicing engineer in various prestigious organization and industries. So, I have a curiosity whether there is any correlation between TVET and employment of Chakma diploma engineers as well as their livelihood development. Actually Chakma students are not much aware of TVET and its impact on employment. In broader sense: livelihood development of the Chakma community. So, a genuine research work should be carried out to assess employment and livelihood development of the Chakma diploma engineers of Khagrachari. That's why, I have chosen the topic of such research work.

1.4 Objectives of the Study:

Although significant quantity of Chakma students from Khagrachari passed out from various TVET institutions in all over the country. But there is no previous study or research had done by anybody to measure the impact of TVET, role of TVET in employment as well as livelihood development.

The main objective of this study is to find the role of TVET in enhancing employment of Chakma diploma engineers as well as livelihood development. The following specific research questions are thus included in this study.

1. To find out the role of TVET institutions in enhancing Chakma diploma engineers' employment.
2. To assess whether employment ensures livelihood development of Chakma diploma engineers.

1.5 Research Questions of the Study:

1. What is the roles of TVET institutes in enhancing chakma diploma engineers' employment?
2. How employment ensures livelihood development of chakma diploma engineers?

Chapter: Two Literature Review

2.1 Introduction

Literature on livelihood development of the chakma diploma engineers is not available both online and offline (hardcopy/ book store). Since there is no such research work done earlier. So, literatures collected from books, periodicals, journal, magazine, documents in a viewpoint of livelihood development approach for such an extra ordinary hilly area, which has been suffering from life line water, roads and electricity connectivity etc. All the documents relating to livelihood and livelihood development and technical education have carefully been selected to match with the objectives of the research. Livelihood, livelihood development and technical education are individually vast subject. So, review of the literatures done as much as possible. Keeping the objectives of the study in viewpoint.

- **Ananta Bihari Khisa** (1979) presented a research article at a seminar organized by Bangladesh Parishad on 14-01-1979 at Khagrachari, namely “**Shiksha Dikshay Parbatya Chattagram**” (**Educational Activities of the Chittagong Hill Tracts**). He explained the chronology of educational development in an artistic and lucid manner. According to him, the establishment of Chittagong Hill Tracts (CHTS) district was in 1860. But educational activity was done further 3 years later, after establishment of elementary boarding school at Chandraghona. The first man, who passed the entrance examination among the chakma society who chakma Raja Bhuban Mohan Roy in 1893. From 1863 to 1957 that means establishment of primary school at Chandraghona to outer space era – it is a great time.

Human knowledge and science have been advanced in supersonic speed. This sub-continent also was not sat idle. But Chittagong Hill Tracts remained in sound sleep. In this century long period, the educational achievement of this district is so slow and infinitesimal that it can be treated as zero digit. At the end of fifties, the quantity of persons received higher education could be counted by fingers.

The first high school established in Rangamati by government initiative in 1890. Since then, it was the only one solitary traveler in the whole district. Then the second high school was established in Ramgarh sub division head quarter in 1951. The distance of establishment time from one to another is 61 years. Then the speed was risen to wheels. Significant change was done both from quality and quantity. Within short time, 3(three) school were appeared in scene as Karnaphuli Project High School, Shah High School and Khagrachari High School in 1953, 1957 and 1958 respectively.

In this process some more schools appeared in scene. Presently the number of high schools is 34, including the existing 5(five) high schools. In addition, there are 25(twenty- five) Junior High School, 3(three) Government College, 1(one) Polytechnic Institute, 1(one) Vocational Training Institute (will be open soon), 18(eighteen) Palitoll, 39(thirty- nine) Forkania Madrasah, 30(thirty) Night School, and 830 Government Primary School [Note: Informations are up to 1979].

Though there were some problems, but the educational history of the past two decades was very lively and active. The veins of the consciousness could not remain motionless (stand still), silent of the drowsy tribals in the wide spread and disorderly turmoil of sputnic age (though it is presently inconsistent) unknowingly in the flow of rude (harsh) reality.

Naturally this consciousness has been echoed with in the educational campus. As a result, the schools boosted with the learners, new institutions had been sprouted. It was a lively journey to the ray of light. Rangamati Government College was established in 1965 with a silent commitment of providing higher education up to graduation. Later after just a decade, twin fellow passengers were appeared into the scene namely Khagrachari and Bandarban college.

Whereas there was only one school within the long and continuous 60 years period in the whole district in parallel with the next new section in quarter century, we find at first average one high school per year on an average. And then on an average two high schools established. Though the quality and live of the institute are not still satisfactory, but they were not sprouted without reason, like mash room.

These educational institutions are more precious than gold, rice to preference, in the area like scattered villages, river and stream, undulating hills, wood and forest and over all destitute and careless people in an environment with special characteristics. Their existence is not only a need, but also most essential too.

It is not electric light, but like the light of earthen lamp, which is fighting with unlimited darkness. With insufficient oil and slender wick, they are lighting dimly due to necessity. The main reasons behind the silent advancement from one step to another may be considered as:

- (a) Budding of progressive mind set among educated young community.
- (b) Disorder of agriculture dependent mindset, after construction of Kaptai dam.
- (c) Complexicity of life and livelihood.
- (d) Establishment of primary schools and government initiative to its reconstruction etc.

In the history of this district (CHT) such days were passed that the substance was very dear (rare) namely student for the schools. Teachers went to the villages to collect students with student fascinating snacks and goods. Though it was not for sale, but also to distribute free of cost. But this job was not resistance free all the time. Sometimes, the villagers harassed such teachers considering (treating) as child lifter (locally known as Mijilik).

The head master of Rangamati Government High School Mr. Ram Kamal himself fell in such a situation, when he was in an expedition of student hunting (collecting). The necessity and importance of learning in mother tongue for every child is a universal truth. Perhaps, from the sense of this understanding, Mr. Miller, renowned head master of Rangamati Government High School has printed books on tribal languages at the end stage of British period.

His pedagogy- based attempt could make a revolutionary change in the field of tribal education. Unfortunately, his honest and sincere attempt had gone to scrap, due to heavy protest by the tribal leaders. One of them was veteran leader Mr. Kamini Mohan Dewan, who termed Mr. Miller as “saturn” for his attempt [N.B.: An autobiography of Mr. Kamini Mohan Dewan, P-234-235]. Now, the tribal have no way except waiting for the second miller by tearing and crying.

Infertility has been going on in the education sector in CHT. Among the tribal, the honour of passing first M.A. was Kumar Kokan Daksha Roy in 1938. Then the second man achieved the degree after 21 years. The scenery is almost same in the other branches of higher education. The time duration from the first to second and second to third was not narrow at all. The hidden cause of this infertility age is mainly three, these are:

- (a) The narrow view point of the tribals due to conservativeness.
- (b) Feudalistic social system and opposite mind set of King (Raja) and feudalistic lords and
- (c) Self-contentment with happy, decent life, though inferior quality.

Although educational achievements in the new stages were not upto the mark of satisfaction, but encouraging largely. Besides, these achievements were not happened in all spheres though there was an achievement in general education, but technical and professional education was not synchronized with it.

The role of technical education felt less due to location, characteristics and unattractive admission affairs, though a Polytechnic was established at Kaptai for long in collaboration with Swedish Government. So, an attempt for establishment of second technical institution (TTC) advanced so far in Rangamati.

A vocational training institute will be established in Khagrachari very soon to fill up the gap of vocational education. It is gathered that there is a plan to establish an agricultural institute in Khagrachari. There is some quotas for the tribal students, in some institutes outside the district; because there is no institutes to study agriculture, medicine and engineering. A new thrust and new enthusiasm created after establishment of Chittagong Hill Tracts Development Board. After critical survey of the educational arena of the district, the following important necessities are:

- (a) Development of tribal languages and made compulsory education in own mother language for the primary level students.
- (b) All the responsibilities of the non-government institutes should be heard by Chittagong Hill Tracts Development Board.
- (d) One primary teachers' training institute should be established.
- (e) An academy for tribal language and culture should be established.
- (f) Facility should be increased for higher education both home and abroad.
- (g) More in habitants of the district should be appointed in all levels of government educational institute. Existing rules should be relaxed on special consideration if necessary.

• **Sugata Chakma (2019)** conducted a research work on “**Khagrachari Parbattya Zillar Chakmader Artho Samajik Obostha**” (**Socio-ecomonic Condition of the Chakma People in Khagrachari District**). This book examines that, a significant change has occurred in livelihood in the study area. More or less 10% percent of the total peasants are still surviving on Jhum cultivation and others have changed their livelihood pattern.

Because Jhumming is not an attractive profession due to less yield of crops as earlier. The scope of employment opportunity and working hour has changed with the changes of land use. At the same time, some chakmas get access to income generating activities in Chittagong EPZ and elsewhere that leads to the change in income pattern of those people. Therefore, the study reveals that in rural area the land use changes from Jhum cultivation to agro food farming and switching over various jobs have a positive effect on livelihood of the small farmer and Chakma community in Khagrachari.

In the context of present poverty situation of Khagrachari agro food farming and engagement of various jobs can play a great role in poverty alleviation and better livelihood of rural poor chakmas. Mr. Sugata Chakma mentioned some observations from his research work, those are as follows: Conditions of chakmas in agriculture: Large portion of the chakmas are mainly peasants. Still the main resource of the most of the chakmas are the paddy grown in the field.

The main food item is rice produced either in paddy field or in Jhum. They created paddy fields on the basin of chengi, Maini, Feni rivers in Khagrachari district in the last hundred years (through the twentieth century), with plough and bulls. On the contrary, now they are using power tillers instead of plough and bulls, (b) In addition to rice, sugarcane and many lucrative crops and vegetables were cultivated on the plain land of the river basins, (c) Since the value of tobacco is higher than paddy, that's why unhealthy tobacco cultivation has been increasing alarmingly in some valleys. Valuable woods are used in furnace for drying the tobacco along with fire woods.

1. Condition of chakmas in Jhum cultivation: (i) Still jhum cultivation is done in limited sphere in some remote areas in Khagrachari district. But paddy or other crops are not produced as earlier. It is done as partial income of livelihood. Hill paddy, sesame, maize, gourd etc are being cultivated in Jhum, (ii) Some chakmas cultivate ginger and turmeric as lucrative crop, (iii) Presently chakmas done gardening (horticulture) in hilly areas.

Now a days, their orchard gardening of mango, jackfruit, lychee, pine apple, plum, orange etc. has been increasing gradually. Income, generation is happening from these initiatives. (iv) Tik gardening has been increasing in extended hilly areas of them, though tik gardening spoils fertility of land. On the other hand, rubber gardening still has been increasing in spite of sudden fall in price of rubber than earlier. Needless to say, the farmers of rubber cultivation are in a crisis due to sudden fall in price.

2. The condition of chakmas in education sector: The advancement of chakmas in education has been continued. A college in chengi mouza and another college at Babuchara in Dighinala mouza have been established in the meantime, where the chakma people have been extended co-operation with enthusiasm. It is mentionable that there are 72 teachers have been teaching in 9(nine) colleges in Khagrachari district. Among them, some chakma women have also been teaching. Many male and female teachers have been serving at primary, junior high and high schools. The medium of education is both in Bengali and English. But in last some decades various NGO (save the children, BRAC etc.) have been teaching at preprimary school in Bengali, English and also in chakma language.

3. Condition of the chakmas in banking sector: It is observed that there were only 68 chakma officer and staff have been in 9(nine) banks (Sonali, Krishi, Janata, Agrani, Trust, Pubali, Kormosongsthan and BRAC etc.). Among them chakma male is 46 and female is 22. Now the ratio of chakma male and female is almost 2:1.

4. Condition of the chakmas in good health and treatment service: In total 30 chakma doctors (MBBS/ Dental Surgeon/ Dentist) were found during the research work in Khagrachari. 14(fourteen) doctors were found in duty during the research period, among civil surgeon office, of the health and family planning office (sadar), health and family planning centre, upazilla health complex, union health centre, health and family welfare centre. Among them 7(seven) male and 7(seven) female doctors.

So, the ratio of male and female doctors is 1:1. There are female doctors having degree in gynecology. As a result, an opportunity has been created for treatment of women and children. More 16 doctors were found during the research period, among them 3(three) are female doctors. So, the ratio of male and female doctors is 30:10 or 15:5. There are some homeo doctors among the chakma community in Khagrachari. It is observed during data collection of research period that there are hygienic sanitary latrines in the most of the chakma houses in town.

Chakma Boidya and midwife (ojha): Still chakma boidya (illiterate folk doctors) have been giving treatment among the villagers in some diseases. Their treatment system is known as 'Tahlik Shashtro'. There are mid wives in villages of chakma society. They are familiar in the name of 'ojha or ojha buri: Chakma boidyas have given treatment with herbal medicine and also with 'Montro' and some times, with offering puja.

5. Communication, transport, electricity and connectivity: (a) In some areas of chakma community, there is an improvement in roads and communications. Some of them bought motor cycle for own use. Somebody bought CNG four- wheeler, van and auto rickshaw (tomtom) for earning through passenger transport.

Somebody got employment by running these. Somebody have pickups to carry goods and people to the market, (b) Mobile phone users among the chakma community have been increasing successively, (c) Quantity of using electricity in chakma houses both in district head quarter and upazila head quarter (sadar) has been increasing successively.

6. Participation of chakmas in public and private organizations, selling of fruits, vegetable, and tree bamboo etc. various goods and conducting hotel restaurant management: Large portion of the chakmas served in public, private (NGO), organizations, bank, school, college in various posts.

Recently educated chakma youths engaged in driving CNG auto rickshaw, i.e-. taken as a profession. Other businessmen include wood business man, stationery shop keeper, various delicious fruits and vegetable vendor, traditional dress, traditional cake seller etc.

7. Existing economic discrimination between chakmas in town and villages: Comparatively discrimination of economic condition between chakma professionals in town and villages has been increasing than earlier especially among the service holders:

Condition of houses of the chakmas: Now, chakma traditional houses namely ‘Mozaghor’ or ‘Machang ghor’ are only visible in inaccessible and remote hilly forests. The reason behind it that the materials (bamboo, tree, thatch and other materials) are only available in the forest. It becomes very expensive if it is available outside the forest.

The informations’ gathered during the field work that the chakmas living in town have given emphasis on building or pucca houses. They have secured water from their tube well in district and upazila sadar. Most of them have hygienic latrine. Now, chakmas are very conscious about water and sanitation system.

Half walled/ tinshed houses/ soil made houses have made in mentionable quantity in some villages of them in the meantime. Brick soling road, electric line has been established in somewhere in the mean time.

• **Dr. Sudhin Kumar Chakma (2012)** conducted a research work on “**changing pattern of the chakma society in the Chittagong Hill Tracts**”. This book deals with issues of entire socio-cultural and livelihood aspects of a particular ethno-linguistic group of the region. Dr. Chakma has analyzed the aspects of demography, historical background, life style, religion and many others of chakma people.

He has also presented some thoughts to us on the evolution of social life of chakma people in the changed situation like modernization, urbanization and industrialization. This book also deals with the farming practices, religious practices, education status, political participation

and the implication of Kaptai Hydroelectric dam on the socio- economic life of the chakmas. Dr. Chakma has introduced the entire aspects of chakma society with a new outlook in this book, which will surely open a new arena for the students, researchers, scholars, academics and many others who are interested on chakma society.

The research of Prof. Dr. Sudhir Kumar Chakma was an attempt to analyze and examine how the pattern of social change has started in the chakma society of the CHT. The focus of writing and investigations done in respect of social changes pertaining to some of the institutional and economic aspects amongst this ethnic people in urban areas and rural villages.

There is also an attempt to study the impacts of change, which disrupts the existing norms, values and customs to such an extent that it is obviously evident. He found that many people showed less enthusiasm for the development of the infrastructure presumably because they feel that such development will open up the area for exploitation by the outsiders and will be a threat to their way of life. The change that started since they came in contact with different cultures and environments from the Mughal period was accelerated after 1947.

The impact of changes has been distinctively felt from the time of the construction of the Kaptai dam in 1962, during the Pakistani period and the de-reservation of the CHT. This two- time period produce marked changes in their ethos, thinking, philosophy and style of living. The chakma society is undergoing a rapid change due to the impact of political, economic and cultural factors.

With development of communication facilities and education local people from different villages started coming into the urban areas. Employment in the government services made the employees come in contact with different people from different cultural areas. The impact of this contact and interaction between the groups along with different impinging factors are mainly responsible for bringing about the socio-cultural change of this community.

The changes have reached the inner core of the chakma tradition and induced a transition from tradition to modernity. Thus, a considerable change is perceived in the life style regarding dress, food, recreational activities, festivals, arts and crafts. Dress pattern of the chakmas has under gone a total change.

The men folk have taken to the western dress. But the women still feel it necessary to use 'Pinan' and 'Khadi' during festivals, though they use saree and blouse most of the time. The art of traditional dress making has also corroded considerably. Dress material which is mill made or manufactured elsewhere finds preference amongst the chakmas.

The daily necessities of the working people have made them depend more and more upon the retail sellers and suppliers a market economy has developed in this area. Basket making has also suffered greatly in urban areas, due to non-practice of this art. Apart from some older men, who are still conversant with this art, the others are ignorant of this art. So, we find that what has been considered a gain through westernization and modernization by the chakmas themselves is also proving to be a loss to their culture.

Since modern industrial occupation requires formal educational qualifications and technical training the chakmas could not enter the mainstream acceptance due to lack of education. But the forced migrant chakmas due to Kaptai dam realized the importance of education and started imparting education to their children. It is observed that education on a mass scale has been introduced in recent years.

Education amongst a few chakmas has spread to such an extent that besides master degrees, there are some chakmas with a degree in medicines, engineering, agriculture and Ph.D. etc. Education has brought about change in the agro-economic life of the chakmas and termed them into a serving salaried class. Just as education has brought about a change in the field of occupation, it has made direct relationship with the changes in the economic sphere of this community.

They come in contact with the outside world due to education, urbanization and forced migration. We observed considerable amount of integration and sense of isolation among the ethnic people in the CHT. This happened mainly for two reasons. The first one is due to the construction of the dam and the other is the heavy influx of plains men. Many villagers went into the uplands of the dam and settled there. They lost the most fertile and irrigated lands due to forced migration.

The government aims of rehabilitation of these forced migrants in alternate lands has caused many socio-economic and psychological problems. They were given inferior land also less acreage. The other chakmas who migrated to urban areas have accepted lower status jobs. The

educated chakmas highlighted the plight of the forced migrants' poverty and compared themselves with the plains men and felt a great deal of deprivation and frustration. This brought about political unrest in the region.

There is a feeling among the ethnic people that the loss incurred due to the dam can never be compensated adequately. The government has to gear up the re-habitation programme by creating enough employment opportunities for the local people. Thus in order to appreciate fully well the numerous difficulties of ethnic people and to their life, some more policies may be considered:

- (1) Steps need to be taken to provide credit and link it with marketing, so that the ethnic people get a fair price for their agricultural and forest produce.
- (2) To ensure that the benefits of developmental programmes, should go to the needy and poor local people. Close and effective supervision of the functionaries posted in the CHT is very essential. This implies that higher level officers must be carefully chosen while posting in the area.
- (3) The factors for individual contact discretion and sustained endurance is absent in governmental agencies. Therefore, one needs to go to the CHT in the true spirit of a good scout and soldier to achieve the desired level of upliftment.
- (4) It is quite necessary to ensure that the programmes formulated do not come into serious conflict with the social attitude of the ethnic population.

• **Md Danesh Miah, Sheeladitya Chakma, Masao Koike & Nur Muhammed;** were conducted a research work on “**Contribution of forests to the livelihood of the Chakma community in the Chittagong Hill Tracts of Bangladesh**” (Pages 449-457; Published online: 15 Oct 2011). The research work reveals that Natural forests offer numerous benefits to indigenous communities and society at large.

Incomes from forest sources play an important role in rural households. In addition to this, environmental sources in the forests contribute significantly to rural households' livelihoods and economic well-being. This paper examines the contributions of forests to the livelihoods of the Chakma tribe in Bangladesh. Using the data from 60 randomly sampled households from three villages, it measured forest-resource use with a monetary yardstick.

As revealed through analyses, natural forest-sourced income occupies the second-largest share in total average household income next to shifting cultivation income in the study area. Forest products represent an important component in the local livelihoods, with a direct forest income of 11,256 Tk year⁻¹ household⁻¹ (Tk = taka, the national currency of Bangladesh; US\$1 = Tk70), or 11% of the total income, in addition to the households receiving monetary benefits of 18,951 Tk year⁻¹ household⁻¹, or 21% of the total income, through the consumption of forest products.

The remaining income came from shifting cultivation practice. It was also observed that larger families with more people gathering forest products realized more forest income. This study will be relevant to forest and environmental policy-makers as well as indigenous community development practitioners.

- **Dr. Golam Rasul**, The International Centre for Integrated Mountain Development (ICIMOD), conducted a research work on “**Chittagong Hill Tracts: Potential for Development in the Spot light**” (published in The Daily Star, Jan 05, 2016).

The research work reveals some important facts that Chittagong Hill Tracts has huge potentials for flourishing as a tourism sector, and producing a number of high-value agricultural products like fruits, off-season vegetables and seeds, stated a report of Kathmandu-based International Centre for Integrated Mountain Development (ICIMOD). According to the report, “A Strategic Framework for Sustainable Development in the Chittagong Hill Tracts of Bangladesh”, the CHT is an ethnically, culturally and topographically diverse region with a population of about 1.6 million including 12 small ethnic communities. Dr Golam Rasul, livelihood theme leader at ICIMOD, a regional intergovernmental knowledge sharing centre serving eight countries of the Hindu Kush Himalayas, and author of the report, told the UNB that the government is yet to focus on developing the CHT as a hot spot for tourism and horticulture due to ongoing land disputes.

Agribusiness is a sector which the region can usefully priorities. Training on agro-processing techniques for farmers, and development of a market infrastructure can earn good prices for their agro products, he added. According to the report, the region can be developed as a trade transit point between the mainland economy and the countries to the east, particularly Myanmar, Thailand, and China.

All these approaches will eventually help improve local economy. It also suggested implementing the outstanding elements of the Peace Accord, expediting the land dispute resolving process, strengthening, decentralization and devolution of the authority of the CHT institutions, and coordination of development activities. It also recommended integrated watershed management; transforming jhum practice, agro-forestry, horticulture and animal husbandry, strengthening post-harvest management and local institutions by facilitating community mobilization; and facilitating access to resources and ensuring security to ethnic communities.

• **Joti Lal Barua^{1*}, Nazrul Islam Khan², Sagarmay Barua ², Sayed Mohammad Mohsin³and M. R. Islam⁴** (1BIRTAN; 2INFS, Dhaka University; 3Department of Plant Pathology, Sher-e-Bangla Agricultural University, Dhaka-1207; 4 Soil Resources Development Institute (SRDI), Bangladesh) (06 June 2015) were carried out a research work on **“Cropping Pattern and Socio-Economic Study of Ethnic People in the Hilly Areas of Bangladesh”**.

The study was conducted at some hilly areas of Bangladesh during the period of January to May 2009 and during April to May, 2010. This was done to evaluate socio-economic condition of the ethnic people and to find out the existing cropping pattern in the hilly areas of Bangladesh.

The tribal people of Tripura were not found to be below Primary level in the study area. The percentage of agriculture and service were found equal in Chakma tribal people in the study area. The Marma people were not found as a service holder because of their low education level. Cultivable land use pattern among the ethnic people revealed that out of 810 ethnic households 222 households were involved in cultivation (27.4%). It also showed that 55.4% households harvested single crop, 26.3% households harvested double crops, 10.8% households harvested triple crops in a year and only 7.5% households practiced jhum cultivation.

The present study provides a brief representation on agricultural cropping pattern among the ethnic people of Chittagong Hill Tracts. It also provides an insight into their life style, food security, health and nutrition.

Education has not yet reached every household member in the hilly area. Main occupation of different tribal people such as Chakma, Marma, Shaontal, and Tanchanga was found to be agriculture. Life style, food security, health and nutritional status of the ethnic people are greatly influenced by their agricultural cropping pattern.

So, further efforts should be continued for the promotion and sustainable crop production in the hilly areas of Bangladesh. The hill farmers have limited knowledge about post-harvest processing of fruits and vegetables. For his reason, a number of products get lost before marketing.

So, postharvest technology program for horticultural crops should be introduced in the hilly areas. The government should take necessary initiatives to set up agro- processing industries in Rangamati Sadar which is the middle place of CHT. Jhum farming cannot be suddenly discontinued. In this situation, jhum cultivation should be modernized through replacing Jhum crops with modern crop varieties suitable for hill farming.

• **S. S. Chakma¹ and K. Ando²** (1Graduate School of Asian and African Area Studies, 2 Centers for Southeast Asian Studies, Kyoto University, Japan) were conducted a research work on “**Jhum cultivation in Khagrachari hill district of Bangladesh- a subsistence farming practices in ethnic minorities**” (2008).

The research work explores some facts that Jhum cultivation (slash-and-burn agriculture) with upland rice as the major crop is the pre-dominant land-use system in the hilly regions of the Chittagong Hill Tracts (CHT) of Bangladesh. With low population densities and moderate expectations, this system may have ecologically sound and adapted to the resource available.

Jhum cultivation is changing rapidly, partly because of population pressure and partly because livelihood strategies are diversified to include permanent cultivation of cash crops. Fast population growth resulted in shorter fallow cycles and consequently increased soil erosion in hills with loss of soil fertility. Realizing these key roles of skill/experience and fallow periods in Jhum cultivation, the ongoing research activities explored to know the status of the Jhum farmers in these aspects.

The initial findings of this research effort are summarized and discussed in this paper. It was observed that Jhum farmers had been practicing shifting cultivation with an average fallow periods of 3.2, 2.6 and 2.5 years, respectively for the landless, small and medium farmers. Almost all of the selected farmers felt that the fallow period has been consistently shortening and productivity of the fields has been declining.

The present average of the 2-3 years fallow period is too short for the vegetation regeneration and to regain soil fertility. The ethnic minorities in Chittagong Hill Tracts (CHT) region are centered on the hills and their resources. Slash-and-burn agriculture with upland rice as the major crop was the predominated land use system in this region.

However, the present farming systems in the study village show that dependence on Jhum cultivation is not so large. One of reasons might be the agro-ecological setting of the village and another is the farmers' socio-economic capability on their farming. From the viewpoint of agronomy, it is noticed that, over the last 50 years, average fallow periods have been reduced drastically.

There is an urgent need to identify deterioration in soil fertility and productivity of crops under the reduced fallow periods. Jhum cultivation is practiced more (in regards to land area) by the landless farmers than the small and medium farmers, whereas the large farmers are not practicing it. It can be considered that the landless, small and medium households have attempted to overcome the land scarcity by adopting Jhum cultivation.

This may be due to possessing of more paddy land by large farmers and paddy cultivation be more economic-profitable and productive than Jhum. The landless farmers were more experienced (average 7 years) than small and medium farmers where as large farmers had no experience as because they were not involved in Jhum.

It is remarked that recently introduced mono-cropping of aroids, turmeric and zinger in hill slopes without proper soil and water conservation measures might make the hill agriculture system more unsustainable.

Land degradation along with the lack of appropriate Jhum cultivation technology may be leading to a sharp decline in productivity of lands in the CHT region. Ultimately the farming system, especially Jhum cultivation, is becoming fragile. On the basis of the present study, it could be concluded that more than 70% of the population or landless and small farmers of this region is losing sustainability of their subsistence farming due to over-depending Jhum cultivation. The decline of the existing farming practices is of major concern.

• **Gopal B. Thapa a Golam Rasul b** (School of Environment, Resources and Development Asian Institute of Technology P.O. Box 4, Klong Luang, Pathum Thani 12120, Thailand b International Center for Integrated Mountain Development (ICIMOD), Jawalakhel, Lalitpur, P.O. Box 3226 Kathmandu, Nepal) were conducted a research work on “**Patterns and determinants of agricultural systems in the Chittagong Hill Tracts of Bangladesh**” (Available online 11 September 2004).

It reveals that against the backdrop of environmental degradation and poverty caused by traditional agricultural systems in the mountain regions, this study classified agricultural systems in the Chittagong Hill Tracts of Bangladesh and analyzed their determinants, with the objective of seeking policies for environmentally compatible and economically viable agricultural systems. Information was collected from 36 tribal villages of Bandarban district through household survey, group discussion, observation, key informant interview, and secondary sources.

In view of the complex heterogeneity of prevailing agricultural systems in the surveyed villages, systems were classified into three major groups – extensive, semi-extensive and intensive – using cluster analysis. The factors determining these three types of agricultural systems were analyzed using factor analysis. Discriminant analysis was performed to explore the relative influence of these predicted factors.

Institutional support, including land tenure, extension services and credit facilities, productive resource base and the distance to the market and service centres were found to be the major factors influencing agricultural systems in the study area. Provision of appropriate institutional support, including a secure system of land tenure, is indispensable for enabling poor mountain farmers to adopt environmentally and economically sound intensive agricultural systems such as plantation, agroforestry and livestock husbandry. Emphasis is also laid on linking mountain regions to other regions through the development of infrastructure such as roads.

Rahman, Md. Matiur (2005): “Trends in technical education in Bangladesh”. In his article he explains the trends of technical education in Bangladesh as: human resource is the greatest resource of a nation. Development in all spheres depend on the human resource. Technical education is playing an important role for human resource development. For this end in view, many national and international agencies are working in Bangladesh.

Bangladesh Technical Education Board has a role for setting quality standard, quality control and development of technical education in this country. Bangladesh Technical Education Board (BTEB) is constantly looking for appropriate schemes for training the youth for suitable job and for self-employed with the changing situation in the job market, due to rapid change in technology. The changes brought about by the adaption and absorption of technology have consequent changes in manufacture and support services.

Changes occurred during recent times: there is significant change in technologies in recent times some of them are: (a) Information Technology (b) Micro Electronics (c) Biotechnology (d) Materials Technology.

As a result, there is (a) change in workplace; needs new skill, (b) change in jobs and transition of careers, (c) change in manufacturing and production processes, (d) New materials and inputs used for production trends in manpower requirement: There is need for workers with technical knowledge both home and abroad.

Recent survey shows that major portion of jobs are needed in service sector: (a) Hotel and Tourism Service, (b) Healthcare and Technology, (c) Security, (d) House Keeping, (e) Transport Workers etc.

In the industrial sector: (a) Petrochemical, (b) Geo Technology and Mining, (c) Canned food and food preservation, (d) Micro electronics goods and their servicing, (e) Medicines, especially herbal medicines.

Because of the above situation the future skills will consist of the following knowledge, skill and attitude: (a) Breadth of skill rather than depth of skill, (b) Multi skill in preference to mono skill, (c) Diagnostic skill more than operational skill, (d) Computer skill, (e) Ability to be highly flexible and adaptable to changes in work place, Behavioral and inter personal skill related to co-ordination, co-operation and team work.

For the accomplishment of quality: Unlike general education, the responsibility for the operation of the training institutions remained with several ministries and agencies. So, the formulation of the policies and strategies on training are more difficult.

However, the following operation should be done for accomplishment of quality education and training: (a) Job market survey and self-employment opportunity survey for finding appropriate training fields, (b) Continuous updating of the curriculum, (c) Evaluating the prevailing process of teaching, training and grading. Also trying to improve the process, (d) Development of staff equipment and other facilities of the technical institutions, (e) Constantly monitoring the performances of the institutes, (f) Encouragement by the government to the technical education sector, (g) Finding the future skills and key issues of training.

Recent activities of Bangladesh Technical Education Board (BTEB)

1. Preparation of the syllabi of nine emerging technologies under a project of MoE, namely – (a) Construction Technology, (b) Instrumentation and Process Control, (c) Mechatronics, (d) Mining and Mine Survey, (e) Environmental Technology (f) Electro medical Technology, (g) Architecture and Interior design, (h) Garments Design and Pattern Making, (i) Tele communication technology.

Further more two other important technologies have been introduced: (a) Ship Building Technology in Bangladesh Institute of Marine Technology (BIMT), Narayanganj, (b) Air Craft Maintenance Technology in AIT, Uttara, Dhaka.

2. Job market oriented one -year courses in service sector have been introduced recently which are (a) Medical Ultrasound, (b) Certificate in para medical, (c) Certificate in medical marketing management.

3. Some important certificate courses have been introduced which are: (a) Food and Beverage Production, (b) Food and Beverage Services, (c) Front Office Management, (d) House Keeping, (e) Integrated Acupuncture, (f) Beautification, (g) Aged Care, (h) Security Services, (i) Fiber Optics and Splicing.

The combined forces of globalization and emerging technologies are making radical changes in workplace. New skills are required for the changing work place. As training systems are the source of supply of skills, the training systems should be restructured to meet the demands for future skills.

All agencies including the government, NGO and corporate sectors should come forward to facilitate the needful training programs. Thus, unemployed and under employed manpower can become helpful to our economy.

• **Emran Md. (2015)** has presented a research paper namely “**TVET for employment and sustainable development**” in a seminar on December 26, 2015. He wrote: Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

He explained the purpose and role of TVET as: (a) to encounter skill gap, (b) development of human capital, (c) unlocking of potential demographic dividend, (d) reduce disparity and inequality (man-women, rich-poor; urban-rural), and (e) boost national economic growth (employment, remittance, PCY).

Green TVET: Green TVET refers to (a) Develop technical skills for green employment (eco-tourism, renewable energy and recycling), (b) Enhancing problem solving skills in everyday situation (life skills education), (c) Greening TVET is needed for transforming the economics from energy and emissions intensive to cleaner and greener production and service patterns, (d) TVET promote skills for sustainable development from the very world of life (personal) to world of work (professional).

Challenges of TVET: (a) Building the responsiveness of TVET systems, (b) Developing qualifications systems to connect skills development and lifelong learning, (c) Achieving better quality teaching and learning, (d) Revisiting TVET financing and enhancing external efficiency, (e) Tackling social inequalities and exclusions, (f) Changing governance and widening stake holders’ engagement in TVET and (g) Promoting innovation and sustainable development through TVET.

Importance of TVET in Economy: TVET is the master key to unlock poverty alleviation and social cohesion. Human resources development and training also underpin the fundamental values of society, equity, justice, gender equity, non discrimination, social responsibility and participation SDG-44: By 2030, the number of skilled youth and adults to be increased for employment, decent job and entrepreneurship.

TVET and human capital: (a) Human capital key to unlock population dividend, (b) investment in human beings' learners are human resource/ clients (c) strong positive correlation between human resource and TVET.

Demographic challenges and opportunities: (a) Population growth rate 1.34% and every year adding 2 million workforces (b) Unemployment and under employment rate about 4.5% and 23% respectively, (c) Remittances contribute about 10% of GDP, (d) Low productive labour force due to lacking adequate skills, (e) Population is viewed as asset, when it gets skills for enhancing productivity. Bottle neck and challenges of TVET education: (a) Urban bias; (b) Low-income family background and merit; (c) Gender in equality; (d) Inadequate market responsive trade/ technology; (e) Employment opportunity; (f) Linkage between industry and TVET institutes; (g) Quality standard (global); (h) Awareness TVET future and (i) Insufficient investment.

Policy recommendations

1. To determine actual market demand of skill labour force in home and abroad;
2. Set strategies for unlocking potential demographic dividend and thereby taking efforts to overcome growth traps;
3. (a) Introduce market driven courses for polytechnic and training institutes; (b) Teaching factory concept (c) Curriculum and syllabus of diploma education need to be revised linking with global standard; (d) Synchronization of curricula, examination system and certification are also required;
4. Introduce sector wide approach program (SWAP) for TVET development with adequate budget allocation;
5. Establishment of separate division under MoE for addressing multi-dimensional issues of TVET;
6. Strengthen NSDC secretariat, ISCS and BTEB for effective implementation of NTVQF and
7. Establishing robust M&E mechanism in order to tracing impediment and progress of TVET development. To this end, an active research and development cell is required to be established.

Sustainable development and TVET inter-dependent and TVET has high impact on country's productivity and growth. Empirically skill development and training are proved as key to success for economic development. Both men and women, it equipped with market responsive skills, can make significant contribution to their own well-being and country's economy. Government, private, international organization and development partners need to strengthen

inter relationship for under taking appropriate strategy for accelerating the development of TVET in order to reach Bangladesh, middle income country by 2021, and developed country by 2041.

• **Atiur Rahman, Dr. (2017)** presented a research paper at the international conference on “skills for the future world of work and TVET for global competitiveness” namely “**TVET and socio-economic development in Bangladesh: steps, challenges, and ways forward**”.

Dr. Atiur showed a table, where he depicted the prevalence of unskilled labour in top six (construction, transportation, storage and communication, other service activities, textile and wearing apparel, trade, hotel and restaurants, agriculture, forestry and fishing) employment creating sectors of the country still rely heavily on unskilled labour.

This needs to change to attain the medium and long term macro-economic objectives. Relevance of TVET: (a) TVET needed to ensure maximum benefit from youthful population structure; (b) More jobs will be created in the urban sectors a TVET needed to prepare the labour force to cope with rising urbanization; (c) More women now are willing to participate in the work force. TVET is the key to create the needed opportunities for them; (d) Formalization of the informal sector is a must. But lack of skills is the challenge.

TVET needed to address this. Challenges (where do we lack?): (a) Governance challenges: Policies and plans not consistent with market, cost implications not considered, lack of effective co-ordination etc.; (b) Gap between demand and supply: There are not enough TVET institutions. Existing ones often do not offer programs most suited for the current market; (c) Lack of participation of the employers: Employers are not consulted adequately when developing curriculum; (d) Lack of proper market research: TVET institutions do not have a well-established feedback mechanism, which can help change or offerings; (e) Responding to fast changing demand: Training programs run by the TVET institutions are ‘lengthy’ and ‘inflexible’. But demand changes very fast; (f) Need for coherence in TVET curriculum: There is disconnect between the quality of graduates produced by TVET and the market demand on the ground.

Ways forward:

(a) Coherence of the policies related to TVET should be ensured. While all the policies and plans intend to ensure greater access to TVET system, improving the quality has not received equal emphasis; (b) Studies and hand map out both current situation as well as project future demand (short and medium term) for TVET. Policy decision informed through such studies is sure to be more effective; (c) Private sector will be naturally interested to participate in TVET related policy making. The public actors need to open up further to capitalize on this interest; (d) TVET system must be able adapt to the changing global scenario (changing skill demand in the global market). We should not limit ourselves to low paying jobs abroad; (e) Instead of gigantic institutes, we have do prefer smaller and more flexible institutes spread all over the country; (f) Refurbishing existing institutes that lack resources and operational autonomy should be prioritized; (g) Mind set must change: We still think desk- based job are more desirable than technical jobs.

TVET can provide us with the opportunity of killing ‘two birds with one stone’ (a) It will make our youths ready for the changing job market; (b) It will ensure a stream of potential workforce for our growing industrial sector.

• **Queen Yen Yen (2017): Shaharmukhi Adivasider Arthonaitik Abaster Prekshapate Karigori Shikshar Prasangitota (Relevance of Technical Education on perspective of economic condition of town bound adivasis)**, Kurum, 2nd Issue. In her article chakma queen Yen Yen mentioned the mind set of the Adivasis and the reality.

She mentioned that the belief is firmly established among the Adivasi Society is that poverty and poverty alleviation is possible through prestigious other professions by earning money without labour intensive professions after being educated. But adverse reality is that most of the students’ dreams come to an end at the end the secondary education.

There is lack of a quality education in primary level, so that students cannot cross secondary level due to many relevant causes; e.g.- cannot attend to the school regularly. The rate of dropout among the Adivasis in secondary level is high. Most of the students cannot get admitted to the university, even they are able to cross secondary and higher secondary level, because of university admission system is highly competitive and limited quota available for the Adivasis.

So, the last refuge is to get admitted to degree course in a government college. The tendency behind this attempt is to get a job in a private company or an NGO with a graduation degree. The present reality in the hills is – visible corruption in government recruitment process and scarcity of job in private or NGO sector.

Huge Adivasi students having degree, honours and masters cannot become economically self-reliant due to lack of jobs. Somebody is interested into business. But due to lack of capital, they cannot establish business enterprise and they cannot earn money. The quantity of jobless and frustrated youths has been increasing day by day in the towns of the hills. Because those of whom are migrated from remote jumiya family to the towns to change their life after being educated. But in the real sense, employment problem is not so severe both in hills and plains.

The real lacking is the disability of changing view point and mind set among the town sound Adivasis. They have no guideline to achieve knowledge and skills in the alternative ways, after observing the reality. There is no plumber, mason and jewelry technician in Rangamati sadar or Upazilla headquarters among the indigenous community. There are also expert carpenters for making wooden houses.

There are electricians and mechanics, but the quantity is not sufficient. There is a demand of mason, mechanic and electrician within the Adivasi Community. Whereas many educated Adivasis have become helpless and jobless, on the contrary some Adivasis have been living in well off position, because of their technical skill even with less education.

Many Adivasi women have become self-reliant, after getting training from the Technical Training Centre (TTC). Perhaps there will be no abundance of money and wealth if anybody engaged in various professions after becoming skilled in technical education. But at least one can avoid the trap of unemployment through this education. Especially those learners of whom are very weak in general education and there is a possibility of becoming self-reliant through taking technical education if proper guidance would be provided in due time. In addition to technical education, there is a huge prospect and potentially in service sector, like nursing, which is very much neglected.

In the Advais society, physicians' profession is much more prestigious job. But nursing is profession is not treated as its single percent. The quantity of nurse and midwife is quite insufficient both in hills and plains. Recently honourable prime minister has declared of

creating more ten thousand posts of nurses and recruiting nurse. Now the demand of nurses and paramedics has been increasing with increasing trend of private hospitals and clinics. We can visualize examples of hotel management and hospitality sector like nursing.

Various regions of the country as well as in the hills, there is a demand of those professionals has been increasing significantly. But nobody pay attention or no steps were taken till now to encourage the learners in these professions, where there is opportunity for employment. Presently there were many Adivasi male and female employees has been working in Chittagong, Dhaka EPZ. But except some persons, all are working as garment workers in lower posts. If they had institutional qualifications in various technical jobs, they would earn higher salary with higher posts.

- **The Relief Web Blog**, Report from Assessment Capacities Project, Start Network. Published on 15 Mar 2018, namely “**Bangladesh, Crisis profile: Food Insecurity in Chittagong Hill Tracts, Mar - Aug./Sept**”. The study explored that Food insecurity is chronic in the Chittagong Hill Tracts (CHT), and a further deterioration is expected between March and August/September during planting and before harvesting period, according to Key Informant Interviews. Such a deterioration is a seasonal trend in the CHT. The planting season in the CHT is between March and April. Harvesting takes place between October and November.

The lean season occurs from May to August, however due to high risk of natural hazards during the monsoon season, the lean season often extends from May to September. Each year it is more difficult for people to cope with the lean season, as food stocks from the previous harvest are limited, there are few employment opportunities and therefore purchasing power is low. There are key factors that are likely to exacerbate the impact of the lean season in the CHT: the region is facing a decline of resources due to land scarcity.

The Monsoon season (May - September) further impacts food insecurity as heavy rainfall leads to flooding and landslides, which severely damages crops. The worst affected areas are usually Thanchi Upazila in Bandarban district, and Sajek Union in Rangamati district. In the Chittagong Hill Tracts (CHT), Bandarban district has been classified as severely food insecure with populations facing IPC Phase 4, and Rangamati and Khagrachhari districts have been classified as facing IPC Phase 3 (Chronic IPC analysis, 2015).

Geographic remoteness, has been identified as a major driver of social disparity in the CHT, despite increased efforts to reach these hard-to-reach areas. Food-availability: Bandarban has been classified in IPC Phase 4 or Severe Chronic Food Insecurity (CFI) (Chronic IPC analysis, 2015). Rangamati and Khagrachhari have been classified in moderate Chronic Food Insecurity (IPC Level 3) (Chronic IPC analysis, 2015).

There is limited food stock due to consecutive failed harvest and the food that is available is generally of poor quality. It is often, the poor quality of food consumed, along with the prevalence of chronic undernutrition in the region is of greater concern than the quantity of food people are consuming.

Nutrition: In May 2017, 129 out of 2,186 children were identified with severe acute malnutrition (SAM) and referred for treatment in the CHT (Needs Assessment Working Group, 2017). The prevalence of stunting and chronic undernutrition in the CHT is at 48%, (MICS, 2013), which is significantly higher than the national average (41%). In Khagrachhari district, undernutrition is as high as 53% (Needs Assessment Working Group, 2017).

Livelihoods: The CHT consists mainly of a mix of different farming systems: Jhum and plough cultivation co-exist with fruit growing and horticulture. Fishing, livestock and poultry raising, as well as forest-based activities are also prominent livelihood activities in the region (Needs Assessment Working Group, 2017). Plain land agriculture is practiced to a limited extent by the Bangali settlers (WFP, 2011).

The scarcity of land and agricultural production continues to limit the capacity of indigenous people to access sufficient amounts of food or cash to help them until the next harvest (WFP, 2011). Therefore, bamboo and wood collection, and casual-labour become alternative economic activities.

The main crops generally grown in Jhum include rice, sesame, chili, ginger, turmeric, cucurbitaceous (sweet gourd, marpha, chinal, bitter gourd etc.), maize, banana, aroids, cotton, okra etc. Along with Jhum cultivation, the upland area is also cultivated for other single crop like turmeric, zinger and aroids or covered with fruit garden, forest trees in rain fed condition (Talukder and Paul, 2013).

Over the last two years, Jhum farmers have been mostly producing turmeric and ginger, as this crop requires limited amount of land, is not prone to rat infestation and provides income (Talukder and Paul, 2013).

- **Author, Golam Rasul (2015, May)**, International Centre for Integrated Mountain Development, Kathmandu and Ministry of Chittagong Hill Tracts Affairs, Government of the People's Republic of Bangladesh. He wrote a report (booklet) namely “**A Strategic Framework for Sustainable Development in the CHT**”, where he explains that given the special geographic and cultural specificity, the CHT has specific needs, requirements, and capabilities, and thus requires differentiated measures and approaches, and delivery mechanisms that are appropriate to the local cultural and social context.

This needs to be fully recognized when preparing national development plans, and the 7th Five Year Plan should include an explicit strategy for the development of the CHT. Faster and more inclusive development will be critical for confidence building and to promote a peaceful situation in the CHT. Development plans should recognize and address the ongoing ethnic and social tensions, particularly the divide between the hills and the plains.

Appropriate strategies are required to integrate the people of the CHT into the mainstream of socioeconomic development, while enabling them to retain their specific ethnic and cultural identity. Although the whole of Bangladesh faces the challenge of widespread poverty, the development challenges faced by the CHT are different to those in other parts of the country. The special socio-cultural and geographic situation leads to both unique problems and unique opportunities.

The CHT is undergoing an economic transformation, and mobile access, internet connection, and new roads are changing the aspirations of the rural population and broadening the opportunities. Increasing the economic benefits in the region can help to ameliorate the ethnic tensions that remain; local businesses can become powerful advocates for peace and help bring stability to the troubled region through economic development.

The Bangladesh government is committed to ensuring peace, progress, and prosperity in the CHT through faster and more inclusive growth and social equity, as well as by integrating ethnic communities into mainstream development without undermining their specific ethnic and cultural identities. Both the farm and non-farm sectors require integrated strategies for development within a supportive environment that provides peace, stability, and good governance, together with appropriate policies and institutional mechanisms.

We propose an integrated multi-pronged strategy for sustainable development in the CHT that brings peace and stability, creates an enabling environment for investment and development, allocates adequate resources for physical and human capital development, promotes and diversifies economic opportunities in both the farm and non-farm sectors, and provides policy and institutional support for market linkages, technological innovation, and private sector engagement (Figure 6). The key elements of the framework are presented below.

Ensuring peace, stability, and good governance Peace and stability are a precondition for the development of any region. It will never be possible to achieve the vision of development in the CHT unless the profound challenges of peace and stability in the region can be solved. The following measures will be essential for ensuring long-lasting peace.

Implementation of outstanding elements of the Peace Accord: The peace agreement signed in 1997 created hope for sustained peace and a conducive environment for economic development. Implementation of the outstanding elements of the CHT Peace Accord is critical for mitigating the continuing tensions between the Paharis and Bengalis and establishing long-lasting peace and harmony (Chowdhury 2012). The government should ensure full implementation of the CHT Peace Accord as soon as possible.

Settlement of land disputes: Land is the primary source of livelihood for the majority of people in the CHT. Disputes about land are the root cause of conflict (Adnan and Dastidar 2011); they have not only triggered social conflict but have also hampered investment in land thus leading to low productivity in agriculture. The resolution of land issues, particularly recognition of tribal people's customary land rights and restitution of their occupied lands, is critical for establishing peace and stability. The government should expedite the process for resolving land disputes in the region.

Reducing conflict over land resources: Extreme poverty in the CHT leads to fierce competition over land between Paharis and Bengalis. This is primarily because of the lack of alternative sources of livelihoods. Over the past two decades, the government has focused its efforts more on land-based activities and less on developing non-farm based alternative sources for livelihoods and building human capital and business and entrepreneurship skills to increase employability and enhance and diversify livelihood opportunities.

Experience from other countries suggests that people in hill and mountain areas are increasingly engaging in the non-farm sector. For example, a large part of income in rural mountain areas in Nepal, western India, and Pakistan comes from remittances. In Nepal more than half of all households and in Himachal Pradesh and Uttarakhand in India close to a quarter of households receive remittances.

Full decentralization and devolution for ensuring good governance: The CHT Peace Accord envisioned a decentralized governance system in the CHT through the establishment of the Ministry of Chittagong Hill Tracts (MOCHTA), Regional Councils (RC), and Hill District Councils (HDCs).

It is important to strengthen the decentralization and devolution of authority and build the capacity of these CHT institutions for planning, managing, and delivering services for socioeconomic development and establishing peace and harmony. Strengthening coordination of development activities: The Ministry of Chittagong Hill Tracts Affairs (MOCHTA) is responsible for planning, implementation, and monitoring of development programmes and projects in the CHT.

However, the sectoral approach of line ministries and the fragmented work of different non-governmental organizations often leads to overlap and fails to produce the desired development outcome. To ensure that development activities can be made more effective and sustainable, and to avoid duplication, MOCHTA should be entrusted with the full responsibility for coordinating development work in the CHT.

MOCHTA's capacity for planning and coordinating this work should also be developed. Peace, stability, and good governance, Policy and institutional support, Human resource development (Education, skills, capacity, network) Innovations (Technology, market, financial services) Strengthening support mechanism and creating incentives Creating enabling environment Private sector engagement (Business development services) Health and Environment (Nutrition, sanitation, climate change adaptation) Value addition (Processing, packaging, transportation) Infrastructure Transportation, water, energy, communication) Farm sector development • Agriculture and horticulture • Forestry and agro-forestry • Fisheries • Livestock • Watershed management Non-farm sector development • Tourism and cultural services • Trade and service • Labour mobility, migration, remittance • Micro-enterprises Strengthening policy and institutional support For nearly two decades, the CHT was isolated from mainstream development, and socioeconomic and industrial development lagged behind.

Special policy and institutional support will be required to accelerate the pace of development in the CHT. The following strategies could be adopted. Preparing a perspective plan for the CHT: A long-term perspective plan is required for the CHT to prepare a road map and pathways for development and to identify policies that can accelerate the pace of socioeconomic development. This plan should promote sustainable development and ensure that the CHT can grow at the same pace as the rest of the country.

Allocate adequate resources for building infrastructure and for human resource development: The people of the CHT are disadvantaged in terms of both physical and human capital, and special policy support is needed to build the physical and social infrastructure (e.g.- roads, transportation, schools, health centres, market facilities, and communication and ICT services) and enhance human capital (education, vocational, and social skills).

Pahari people need to be better equipped to take advantage of the opportunities arising in national and global labour markets, and to adapt to climatic and other socioeconomic changes. Incentive mechanisms need to be developed to attract investment in the CHT to create employment: Policy and institutional support should be tailored to create new economic opportunities that can transform the subsistence agricultural economy into a thriving rural economy.

The need for economic survival often drives or exacerbates conflict, thus special efforts should be made to create new livelihood opportunities and to develop alternative sources of income. If people are able to meet their basic needs, they are less likely to engage in violent activities to access economic resources. Youth employment and economic engagement: Poverty, widespread unemployment, and a lack of opportunities for progress can lead to frustration among the youth and push them towards socially undesirable activities and violence.

It is important to provide the necessary skills and opportunities for young people to find employment in the CHT or elsewhere and generate income. Strategies to strengthen the farm sector although the non-farm sector is gaining in importance, agriculture remains the major source of livelihood for the people of the CHT. It is important to ensure that agricultural opportunities are recognized and their development supported in a sustainable way whilst maintaining the integrity of the land resources.

The following strategies will be useful: Strengthening agriculture through integrated watershed management: Integrated management of land, water, forest, and ecosystems is needed to support increased productivity of land, forest, livestock, and fisheries, while ensuring sustainability and long-term maintenance of ecosystem services, as well as food and nutritional security.

Transform jhum to agroforestry, horticulture, animal husbandry, and other more productive systems: Given the subsistence nature of the farming systems in the CHT with limited landholdings, difficult topographic conditions, and poor soil, there is a need to promote innovative options to increase farming efficiency. Strategic actions are required to focus on potential products, including packaged support for access to markets through better farm road connectivity, irrigation facilities, and water harvesting technologies, and modernizing of agriculture.

It is crucial to provide high-yielding inputs together with capacity-building initiatives for improved management. In areas where forest cover is required for ecological sustainability (to prevent erosion and soil degradation), jhum should either be transformed to agroforestry, or the conditions facilitated to practice jhum with a long forest fallow.

Strengthen post-harvest management, value chain development, processing, packaging, and market access: In the CHT, scattered production units and low volume of production make it difficult to optimize the gain from production. Often, even the small amount produced fails to reach the market due to lack of post-harvest facilities. It is essential to promote commodity-specific value chains with an emphasis on processing, packaging, branding, and certification. Clear market linkages need to be established by engaging the private sector and other market players.

Strengthen local institutions: Collective efforts are required in order to attain scale of production, achieve efficiency in delivery of inputs, and channel product outputs. Facilitating community mobilization in terms of forming farmer groups, associations, and co-operatives is a key to sustainable rural development.

Facilitate access to credit and information: One of the biggest challenges to promoting the farm sector in the CHT is the lack of access to credit and to market information. As a result of the remoteness and high-risk potential of the area, farmers are often at the mercy of a small number of local moneylenders and middlemen and can become trapped in a cycle of debt, which limits overall economic growth.

Promotion of rural credit schemes and formation of community-based savings and credit organizations can help address issues around access to finance for microenterprise development at the community level. Furthermore, producers need to be empowered with timely market information so that they can avoid the problems of middlemen taking advantage of their lack of knowledge.

Facilitate access to resources for CHT farmers: CHT farmers remain discontented with the increasing pressure on the limited land resources resulting from competition with communities from elsewhere. Appropriate policies to address land rights that promote access to land for local CHT farmers would be fundamental for achieving inclusive sustainable development in the CHT. Strategies to strengthen the non-farm sector.

The opportunities for development of intensive agriculture are limited in the CHT by the lack of suitable land. It is important to look beyond agriculture to foster development, giving equal emphasis to the farm and non-farm sectors. This implies a shift in focus from agriculture to the development of the secondary and service sectors and the development of area-specific approaches based on agro-ecological potential and access to markets and services.

Promoting non-farm activities and supporting labour mobility, both farm to non-farm and internal and external migration, could be key elements in a rural development and poverty reduction strategy for the region. Development of the non-farm sector will be key to the economic development of the CHT and improving livelihood opportunities. The following paragraphs describe some of the most promising strategies.

Creation of non-farm employment opportunities: Nearly 70% of the rural population in the CHT depends on agriculture as a primary or secondary source of livelihood. There is a need to generate rural jobs in the non-farm sector so that livelihoods can be diversified and the dependence on agriculture reduced. Priority needs include provision of skills development and vocational training to promote non-farm economic activities.

Encourage labour mobility and internal and external migration: Ethnic communities in some countries are observed to be highly mobile even though they have a strong attachment to their traditional homelands (Abella 2013). The ethnic communities in the CHT currently have limited access to knowledge and awareness of job opportunities elsewhere, strong cultural barriers that discourage mobility, and a lack of the financial capacity that is crucial for mobility for work.

The following initiatives could help the ethnic communities achieve greater mobility and obtain the economic benefits from higher wages and remittances: 1. Greater exposure of the ethnic communities to mainstream society so that they can acquire skills and competencies; 2. Provide knowledge and information to prepare for national and external job markets; 3. Provide financial and other advisory services to enhance the capacity to seize opportunities in national and international job markets.

Development of community-based Eco-Tourism: Tourism can generate local employment through forward and backward linkages in different sub-sectors including accommodation, food, transportation, and cultural and landscape services. A comprehensive tourism master plan including development of new destinations and trails, as well as product and service development is required to help tap the potential of tourism in the CHT, including in the Kaptai lake area. Specific measures are required to engage local people in planning and developing tourism in order to create ownership and ensure that the benefits of tourism are accrued locally. A special effort should be made to encourage the private sector to invest in the development of infrastructure and facilities to support tourism. A master plan for tourism development in CHT should be prepared.

Strengthening private sector engagement: Policy support is required to attract private investment in agro-processing industries and microenterprise development, including tourism infrastructure. Creating an enabling environment and social harmony to harness economic opportunities and social development: Effective measures are required to transform social tension to social harmony through building trust and confidence, and engaging local people in the overall development of the region.

● **Food and Agriculture Organization of the United Nations**, FAO Bangladesh, 2014. **“ACHIEVING FOOD AND NUTRITION SECURITY IN THE CHITTAGONG HILL TRACTS”**: The Chittagong Hill Tracts are a unique part of Bangladesh. Large tracts of the region are covered by hills, creating a mountain ecosystem rich in biological and cultural diversity. In this area people have developed distinct agricultural practices and livelihood patterns.

The CHT are home to a large number of ethnic communities, who depend mostly on Jhum, a type of traditional shifting cultivation on very steep slopes. The CHT are divided

administratively into the three hill districts of Bandarban, Khagrachari and Rangamati. It has a total population of about 1.7 million people and covers an area of 13,295 km².

The harsh environment and decades of social unrest have made the hill tracts one of the most vulnerable regions in the country in terms of food security, income, employment, health, water and sanitation, education, access to infrastructure and services. The Chittagong Hill Tracts Peace Accord, signed in 1997, brought an end to more than two decades of conflict, making it possible for the local population to start improving their lives.

The present challenges include land and population pressure, water scarcity in the dry season, extreme remoteness, weak market linkages and natural resource degradation. Greater efforts are needed to ensure that all the people in the Chittagong Hill Tracts enjoy food and nutrition security with respect for their unique traditions and identities. FAO works with men and women farmers in CHT to improve productivity in a sustainable manner.

The focus is on increasing yields and production of crops in a way that does not harm the environment and exhaust the land. To make sure that the land will be fertile in the future as well, basic conservation measures are promoted, such as minimal soil disturbance, permanent soil cover, introduction of strip cropping and mixed cultivation according to appropriate slope and soil condition, possible crop rotations and use of balanced and organic fertilizers. Poverty, resource scarcity and poor service delivery are some of the main challenges of men and women in the hill tracts, particularly in remote areas.

Small farmers do not have access to affordable inputs such as good quality seeds, balanced fertilizers and effective storage items. If they had access to improved resources, technologies and services, men and women farmers would be able to grow more and better. To achieve this, FAO provides key inputs to help farmers raise their agricultural productivity, invest in additional livelihood activities and contribute to greater food security and income generation. These are combined with training and other activities for effective long-term solutions.

Key Inputs to help farmers raise productivity: training and capacity development is at the core of FAO's approach. The organization works together with men and women in the communities to develop and share technologies that are appropriate to the specific environment and the needs of the people, taking into consideration the individual roles of men and women, their responsibilities as well as their traditions.

Practical application. Farmer Field Schools are based on the “learning by doing” principle. It is described as a “school without walls”. Farmers learn in groups, directly in the field and following the agricultural calendar. Through this interactive approach, farmers improve the capacity to make decisions and the approach stimulates local innovation for sustainable agriculture.

The FFS is considered a successful participatory model for skills development as well as empowerment. Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. To achieve food security, different livelihood strategies and activities are employed by people around the world.

A household with only one means of support has nothing to fall back on if that livelihood is insufficient or lost entirely. In the CHT, most rural households are highly vulnerable as they depend overwhelmingly on Jhum for survival. Efforts to diversify into other agricultural and non-agricultural activities is key to reducing risk and vulnerability, giving men and women greater opportunity for additional sources of income and food.

Consumption of healthy foods leads to a healthy, active and economically productive life. Eating a variety of foods can provide sufficient energy, help the body grow and repair injury, and strengthen the immune system against diseases. This is especially important for pregnant and lactating women, and infant and young children. Increased food production and agricultural productivity is good but not enough.

Alongside this, FAO in CHT promotes behavioral change through nutrition education and awareness raising campaigns within a supportive environment that also addresses household sanitation, hygiene, and safe food preparation and preservation. During the dry winter season farmers in CHT hardly have access to water. This leads to limited agricultural activities and a lack of year-round availability of food.

The lack of water is a growing concern. Due to deforestation and siltation of water bodies, water resources continue to decline even further. Conservation of surface water and small-scale water harvesting techniques are key to providing solutions for serious water scarcity. In consultation and partnership with local communities, FAO has constructed small scale dams to collect water and make it available during the dry season. Built with community labour, these dams contribute to enhanced agricultural production, available water for household use, and increased resilience in the face of drought.

Selling surplus produce is an important source of income for men and women farmers. In remote areas of the CHT, access to markets and market information is challenging because of limited infrastructure and investment as well as high transaction costs. It is difficult for farmers to market their products as they mostly carry their goods manually over long distances. The costs of transport are thus very high, often offsetting sales proceeds.

In addition, costs are often multiplied by product loss due to lack of appropriate transportation and storage facilities. The producers thus receive very small returns for their labour. Marketing and value chain development in the CHT can be significant tools to increase the profits of small farmers, including getting farmers to join forces, training on reducing losses, and facilitating market information and linkages with retailers.

● **United Nations World Food Programme in Bangladesh, AGRICULTURAL LIVELIHOODS IN THE HIGHER ELEVATION AREAS OF THE CHITTAGONG HILL TRACTS: BASELINE STUDY, 2017.** This study report explored that The Chittagong Hill Tracts, located in southeast Bangladesh, bordering both India and Myanmar, are geographically and topographically very distinct, the expansive range of hills and valleys forming an entirely different terrain to the typical flat, deltaic plains of Bangladesh. The area is home to a diverse minority population, differing from the rest of the country in languages and ethnicity, religion and culture, livelihoods and economy.

A long history of conflict and political unrest, combined with the logistical isolation of the area, has resulted in weak integration with the mainstream developmental trends of most parts of Bangladesh. Significant challenges remain in ensuring food security, and increasing household incomes and access to markets. Growth of economic opportunities remains limited, with little scope for most people to move beyond the traditional and subsistence forms of agriculture that are typical in the area.

In the Swidden or Jhum agricultural communities of the hill tract region, including a detailed description of household economies disaggregated by wealth class. The results of this baseline analysis are intended to inform programme design and to facilitate the process of developing solutions that are both responsive to the needs of the poor and in alignment with the Sustainable Development Goals, in particular the second goal of “zero hunger”.

There is no shortage of literature available on issues of poverty in the Chittagong Hill Tracts. The contribution that this research aims to make, is to supplement and complement other work that has been done, by providing insights into variations in food security and access to economic opportunities, as determined by a household's asset profile and wealth class.

The issues of poverty in the Chittagong Hill Tracts are complex and deep-rooted. It is unfortunate, therefore, to observe in some of the existing literature the tendency to attribute the lack of development to the difficult terrain and geographical isolation of the hill tract area. These areas are indeed hilly, with a lot of rivers and in the farthest corner of the country. However, these hills are exactly that, hills, dwarfed in comparison to the mountains of other countries in the region.

More functional roads have been built in the mountains of Sikkim, Nepal and even in Afghanistan than is the case for the remoter areas of the hill tracts. The rivers of the area are minor in comparison to the mighty rivers that flow through the central part of the country, which have been bridged successfully to serve the majority population. The farthest corner of the country need hardly be a challenge in a country the size of Bangladesh.

Communities living in remote, higher elevation villages face significantly greater logistical and livelihoods challenges than those villages and towns located at lower elevations. They remain economically poorer, less educated, and under-serviced than almost all other parts of Bangladesh. Access to these higher elevation villages remains restricted to 4WD vehicle, and in some cases only foot travel.

It is this sub-zone in particular, herein referred to as the "Higher Elevation Hill Tract Zone" or "zone" for short that is the focus of this research. Defined by elevation and remoteness, it is a non-contiguous series of patches located across the general Chittagong Hill Tracts area. District and subdistrict towns are all located at lower elevations, linked with the primary road network within the greater hill tracts area.

HISTORICAL PERSPECTIVE ON LIVELIHOODS IN THE HILL TRACTS

A study done in 1965, titled Reconnaissance Soil and Land Use Survey, Chittagong Hill Tracts by the Soil Resources Development Institute, Ministry of Agriculture⁶ provides a very useful and interesting historical perspective to the livelihoods of the hill tracts area. Of particular note are the following from Section F: Agricultural Economics (p 133):

- “Incomes are so low that neither savings nor investment can take place on any significant scale within the agricultural industry, thus restraining growth within the sector.
- The level of dependence on own-farm production is extremely high.
- In all the main types of agriculture, the labour force is underemployed for the greater part of the year. Virtually no off-farm employment opportunities are available.
- The use of the land is extensive, rather than intensive, and farmers are not making the most effective use of the land available to them.
- Yields per acre, output per worker, and volume of business are low. This has, in turn, discouraged the development of processing industries.”

The conclusions of this recent research in 2017 are very much in alignment with those described above. The 1965 study goes on to say that the problems most commonly mentioned by farmers include: “inadequate assistance in the form of fertiliser, seedlings and extension advice, difficulties of access to market centres, and inadequacies in credit and marketing arrangements.” Again, it is difficult to conclude anything other than this fifty years on.

• **Md. Jamaluddin**, Principal Investigator, On-Farm Research Division; **Md. Kamrul Hassan**, Co-Investigator; Planning and Evaluation Division; **Md. Monayem Miah**, Co-Investigator, Agricultural Economics Division; Bangladesh Agricultural Research Institute (August 2010) conducted a research work namely “**Identifying Livelihood Patterns of Ethnic Minorities and their Coping Strategies Different Vulnerabilities Situation in Chittagong Hill Tracts Region, Bangladesh**”.

They mentioned that Chittagong Hill Tracts is the home of 13 ethnic minorities possessing distinct cultures and life styles. The ethnic communities are Chakma, Marma, Tripura, Tangchangya, Bawm, Murong (Mro), Khumi, Chhak, Pankhoa, Kuki, Khyang, Lushai and Sautal. They are ethnically different from the settled populace in Bangladesh. The highest population belong to the Chakma (43.35%), followed by the Marma (25.77%) and the Tripura (13.58%).

Policy recommendations

Shifting cultivation in the remote areas needs to be modernized by introducing modern agricultural practices. In peri-urban areas where road communication and marketing facilities

are mostly available, settle farming (mixed fruit) orchard may be suitable as an alternative to *Jhum* but their requirement of cereal (rice) and other short-term vegetables could be able to cultivate in the fruit orchard in first three years since the canopy size of fruit trees are small.

Settle farming (fruit orchard) would be able to generate more income in the long run. The establishment of fruit orchard will require proper management i.e.- fertilization, weeding and watering after plantation. Due to lack of cash money the poor farmers cannot ensure proper management to the fruit orchard.

Therefore, concerned department can create irrigation facility by making small-scale creek dam and provide other necessary agricultural inputs (fertilizer, insecticide, sprayer etc.) with low cost. Rodent threat in *Jhum* crops is a current problem in the study areas affecting food security and livelihood. To overcome this problem, a special program should be undertaken by the concerned department.

In order to minimize the crop damage due to drought, drought tolerant crop variety should be developed. Some *Jhum* crops have already been found to be drought resistant but it needs more management-oriented package of technology which can be provided by the Department of Agricultural Extension (DAE) and on-farm research division of BARI. Limited land per household is one of the important bottlenecks of food shortages.

To overcome this problem, a reasonable size of land per households could be provided through spot settlement of land to the landless and marginal households. These may lead to encourage them to create settle farming. Livestock and poultry are one of the most important sectors which can generate not only income but also supply food and nutrition. Concerned departments should come forward with new incentives (i.e.- easy loan, free or low cost input supply and providing extension service etc.) to the most vulnerable ethnic and non-ethnic households.

Government should take necessary steps to reduce household size and minimize dependency ratio by creating new jobs and income generating activities. Family planning programme should also be strengthening in this regard. The level of education of the family members was not satisfactory in the study areas. To overcome this problem, at least one primary school should be established in each village or within one kilometers of area. Sound health influence taking household production and consumption decision. Therefore, much emphasis should be given on health care.

Various social safety net programs such as VGF, VGD, old age allowances, widow allowances, disabled allowances implemented by the government are reported to be very much helpful to the vulnerable ethnic and non-ethnic households. Therefore, these programmes should be extended in remote areas where lower level of household cereal sufficiency exists.

In addition, food production in the CHT should be enriched through applied modern agricultural technologies by the concerned department. Access to food at all times to all households' especially poor households should be ensured. Moreover, nutritionally food intake could be ensured by motivational awareness program. Increased real income, education and health status can be ensured for sustainable food and livelihood security in the Chittagong Hill Tract region.

● **ALAM, GAZI MAHABUBUL, (2008, March):** Research and Evaluation Division, BRAC, Dhaka, Bangladesh. He wrote an article in the Asia-Pacific Journal of Cooperative Education, 2008, namely **“The role of technical and vocational education in the national development of Bangladesh”**.

He mentioned that Education is a basic human right and considered by many as a key tool for national development. However, this tenet has been challenged by several economists, especially Pritchett (1996). His empirical analysis suggests that many countries, whilst having a large educated population, remain unable to make significant progress. It is also claimed that third world development is sluggish.

These findings generate the question: while education increases globally, what exactly is it that hinders a country's progression? There are no short answers, but a major area of concern is the type and quality of education available. Scholars argue that countries need a well-diversified education system in order to gain sustainable development through education. This paper explores the situation for Bangladesh for its development by providing technical and vocational education.

The World Bank (2002) described Bangladesh as lagging behind the economic growth of technical and technological modernization, but went on to note that “Bangladesh's greatest strength is its people. Ethnically homogeneous and firmly wedded after much turmoil to the intuitions, they are well known for hard work and resilience under stress” (World Bank, 2002, p. 6). The World Bank also noted that Bangladesh has no more alternatives in order to gain development, except properly utilizing its population.

The World Bank (2002), United Nations Development Programme (UNDP) (1999), United Nations Educational, Scientific and Cultural Organization (UNESCO) (2000) all suggest that Bangladesh urgently needs to utilize its over-crowded population and large labor market. To improve the quality of employees, Bangladesh's people need to be trained in modern professional-based and job oriented technical, technological and vocational programs.

World Bank (2002) data reveals that, in the last 25 years, Bangladesh's economy has only developed at a 4% annual gross rate for its domestic product (GDP), leaving it still poor and dependent on foreign aid for its development; particularly due to political instability. Local politicians and privileged people blame the continuing deprived state of Bangladesh on its relatively recent independence.

Again the World Bank (2002) report suggests that Bangladesh's economy and human development could have grown faster than its actual progression in the last 25 years (i.e., since independence in 1971), if it had earlier taken substantial steps in educational development. For example, the economy of South Korea, Thailand and Malaysia reached upper middle-income status within about 25 years after achieving political stability.

This outstanding improvement in living standards and quality of life for the citizens was achieved by securing an appropriate educational atmosphere in order to provide high quality education in different technical and professional fields. Education is generally viewed as crucial for rapid economic growth, and essential if we wish to increase the productivity of the poor by reducing fertility and providing people with the skills they need to participate fully in the economy and in society (Fagerlind & Saha, 1989).

Therefore, it is important for Bangladesh to offer different educational programs in terms of population, social requirements, and globalization, and so on. The Bangladesh Bureau of Educational Information and Statistics (BANBEIS) noted that, since independence many attempts have been made for the renewal educational policy, but that the desired development has yet to take place, because most of the educational policies and developmental steps were taken for 'general education' (BANBEIS, 2007).

Bennell (1996) observes that all countries, especially developing countries, need balanced development through all of the educational sectors in order to make significant progress in terms of national development. Presently Bangladesh is mainly offering education in 'general

subjects, but to achieve development, it must offer a variety of courses for disciplines such as technical, vocational, professional, agricultural, and so on, because the country needs a balanced distribution of manpower for all professions (Alam, 2003, 2007), so that the vast population of Bangladesh can contribute to economical growth by participating in different professions.

Additionally, if people get involved in different professions naturally, they will may their own professions, and that may help in the development of social equity, respect and freedom. In the present circumstances, it seems that drop-out rate at the secondary level is quite high.

Furthermore, it is clear that inadvertently and haphazardly offering TVE programs not only increases the use of scarce educational resources, but also raises questions about the achievements of education, and may well make barrier to achieving national and individual educational aims. In addition to some other factors may be noted:

1. To progress well in the face of increasing global competition, it is essential to provide modern up-to-date technological knowledge to students;
2. On the other hand, it is notable that not all students have the academic ability or interest to gain technological knowledge; and
3. In addition to the above issues, other professions such as agriculture, the garment industry and so on, can pay a vital role in country's developmental progress. After all, a balanced, skilled workforce can play a separate more holistic role in national development.

Considering the above, few TVE subjects such as agricultural science (in all its diversity), computer science, information technology, garments and textile technology, fashion and design, need to be offered especially at the secondary school level, and students should take several TVE subjects.

This may help the drop-out students to become more skilled in a variety of tasks, and in addition provide a solid foundation to continue into higher education. It also should be noted that Bangladesh needs to provide in-service training programs at different levels, and for different subjects. This may help employees to cope with changes in TVE, and help primary-school-leavers to cope better with their jobs. In conclusion, the following overall recommendation is made.

A well-timed TVE program may help Bangladesh to improve its economic growth, which may then aid social equity and freedom; the country urgently needs to take substantial steps (such as, increasing budgets, preparing modern course curriculum etc.) if it wants to develop TVE education.

● **Asian Development Bank, Bangladesh Resident Mission (2011, October), Chittagong Hill Tracts Rural Development Project Key Project Results.**

Output (1) About 260 kilometers of feeder and rural roads improved; and 4,856 meters of bridges and culverts constructed (2) Over 333,600 households benefited by improved agriculture/irrigation and 147,700 households got drinking water facilities (3) Partner non-government organizations (NGOs) led 60,000 participants through 3,100 training courses and registered 6,000 members for savings (4) About 20,000 beneficiaries received micro financing (5) Six community development partner NGOs trained 21,464 beneficiaries (39% female and 87% from indigenous groups) to develop skills and capacity to start and successfully operate small, community-based income-generating activities.

Outcome (a) CHT rural population living below food poverty line reduced from 70% in 1999 to 62% in 2008 (b) Average household income increased from Tk25,000 (\$338) in 1999 to Tk66,000 (\$892) in 2008 (c) Helped empower the ethnic minority population, which constitutes about 50% of the total population in the region, in deciding their own development priorities and taking ownership of the investments undertaken he Chittagong Hill Tracts (CHT) is a unique geographical and cultural section of Bangladesh, with a mix of ethnic minority groups and Bengalis.

The area was devoid of significant externally financed development interventions during the 1980s and 1990s because of a 20-year insurgency, which led to a general deterioration in the quality of life. Basic socioeconomic indicators for the CHT reveal a region suffering from both low income and absolute poverty, especially among the rural population. In 2000, the Asian Development Bank (ADB) approved the Chittagong Hill Tracts Rural Development Project to help reduce the incidence of poverty in the CHT and to provide a confidence-building environment to underpin the peace accord signed in 1997.

The project focused on increasing employment and income generating opportunities through improved rural infrastructure, providing access to training and improved on- and off-farm

productive technology, increasing the availability of microfinance services to expand productive activities, and strengthening the capacity of local government institutions, nongovernment organizations, and beneficiaries to plan and implement local development activities, thus providing a sound institutional capability for further development initiatives.

The project focused on increasing employment and income-generating opportunities through improved rural infrastructure, providing access to training and improved on- and off-farm productive technology. Project at a Glance (October 2011): Cost and financing: ADB, \$30 million; Technical Assistance Special Fund, \$500,000; Palli Karma-Sahayak Foundation, \$3.6 million; beneficiaries, \$2.6 million; Government of Bangladesh, \$9.1 million Executing agency: Ministry of Chittagong Hill Tracts Affairs Implementation period: October 2000–December 2009.

● **Authors:**1. A.T.M. ZINNATUL BASSAR, Department of Disaster Management, Begum Rokeya University, Rangpur, Bangladesh, 2. SHAKIL AHMED, Khulna University, Bangladesh, 3. MD. AHOSHAN HABIB, Department of Disaster Management, Begum Rokeya University, Rangpur, Bangladesh; They conducted a research work on **“Opportunities of Shifting Jhum and Constraints of Practicing Social Forestry in Khagrachari District of Bangladesh”**.

They mentioned as: The main purpose of the study was to identify the status of Jhum cultivation along with the constraints of practicing social forestry in Khagrachari district of Bangladesh. Data were collected by multistage random sampling from 180 Jhum cultivators of Diginala, Khagrachari sadar, Mahalchhari, Matiranga and Panchhari upazilla of Khagrachari District for a period of 12 months from January 2015 to December 2016. About 90% respondents have 5 acres land of which 4.5-4.59 acres are used for Jhum cultivation and 0.41-0.5 acre is used as homestead.

All of the respondents show multi-response among the 200 respondents, the majority of the respondents (about 93%) have continued Jhum farming partly due to historical reasons and partly (90%) due to poverty-related reasons. Only 14% Jhum cultivators support Jhum cultivation because of scarcity of land and labor whereas 53% have no idea about other types of cultivation techniques.

The main constraints of practicing social forestry were local politics, scarcity of land, population pressure, traditional beliefs, conflict between tribal people and forest department, conflicts between Chittagong Hill Tracts Regional council and Forest Department. Permanent Jhum cultivation leads to soil infertility and makes the livelihood pattern difficult for the cultivators.

About 67% respondents are willing to set up social forestry on their hill but the technology is unknown to them. Majority of the respondents suggested the solution of the constraints were as convenience local leader, used fallow land, create awareness about the benefit of social forestry, coordination among tribal people, Forest Department, political leader and Chittagong Hill Tracts.

The present study was successful to the identification of various problems for introducing social forestry in Khagrachari district of Bangladesh. The finding of the study may act as a base line for the researchers to conduct research for the improvement of socio-economic status of Jhum cultivators of Khagrachari District in Bangladesh.

As the population pressure is rising rapidly, the introduction of social forestry in the hill tracts will ultimately be an imperative for increasing production from forest sector to meet the demand of mass population. This may act as an alternative source of income as well as to increase to improve socio-economy. The majority of the Jhum cultivators are suffering from the capital deficiency.

Thus, capital and loan facilities must be adopted with low interest. Moreover, proper educational and training facilities must be undertaken so as to increase skilled personnel in this sector. Skilled and trained forest officers should be recruited to build up awareness and also to influence the tribal people about the contribution of the forest sector. If the contribution of forest sector is enhanced, it will play a significant role to the economy of Bangladesh.

● **Tapan Kumar Nath, M. Inoue & S. Chakma** (June, 2011). “**Shifting Cultivation (Jhum) in the Chittagong Hill Tracts, Bangladesh: Examining its Sustainability, Rural Livelihood and Policy Implications**”. They wrote as: Despite the trend of dwindling productivity, tribal people of the Chittagong Hill Tracts (CHT) still practice shifting cultivation as a dominant hill farming system to support their livelihood.

Drawing on an empirical study in Khagrachari district of the CHT, this research examined how far the production from present shifting cultivation supports the tribal people's livelihood and what alternative livelihood strategies they have adopted for subsistence by using data on input/output and income/expenditures, and analyzing current government policies. The findings showed that productivity declined markedly, yields were almost equal to input values and farmers experienced food shortages for at least two to six months in a year.

To make a living, farmers have adopted new occupations such as wage labour, animal husbandry, cultivation of annual monocrops and extraction and selling of forest products. Policy analysis indicates that previous policies were unable to reduce shifting cultivation intensity or improve tribal people's livelihoods or the region's forest resources.

Reorientation of government policies, easy access to institutional support and the active participation of local people in development intervention are of the utmost importance in order to find alternative land uses for sustainable hill farming, to improve the farmer's living standards and to conserve forests and protect watersheds.

Some conclusions can be drawn from the results of this study and previous reviews. As citizens of independent Bangladesh, Jhumias can enjoy at least basic rights such as land rights. They believe the land is common property and as such they do not maintain any kind of land certificate.

Although the in-migrant Bengalese were not the original residents of the CHT, they have land title. In contrast, the tribal people who have been living in the region for many generations have no formal land title. They are struggling for land tenure. Policy makers blamed them for the plunder of forest resources, but nevertheless the major stock of the country's forests, in terms of coverage and growing stock, is found in the CHT and provides the FD with revenue.

Collective approaches to resource management can be seen to be effective in many Asian countries, and market-oriented individual approaches are prevailing in Bangladesh. These two approaches jointly could be functional for the development of the CHT. With this new approach, farmers could be able to maintain their traditional Jhum as well as practice market oriented locally suitable agroforestry practices.

Farmers need technical know-how, capital investment, marketing facilities and institutional supports (mainly title to their land) to move from Jhum to sedentary farming practices such as agroforestry. Government institutions, NGOs and other social organizations exist in the CHT, but they are mostly located near accessible areas.

Their activities should be extended to 140 International Journal of Agricultural Sustainability remote areas so that tribal people can get extension services. However, there should be integration among different government institutions such as the FD and the Land Revenue Department, while NGOs and other development agencies and farmers' organizations should offer a permanent solution to discontinue Jhum and institute other land uses in the CHT.

At the same time, community-based ecotourism may be developed in protected areas of the CHT to provide alternative livelihood sources. Finally, it can be concluded that any development interventions that are targeted towards sustainable resource management and livelihood improvement will be sustainable only when the authorities have a strong will accompanied by appropriate policy and institutional support that integrates farmers, consumers and other stakeholders for the betterment of society and the environment.

• **ADB Completion Report on Bangladesh: Chittagong Hill Tracts Rural Development Project.** (2010, December). Asian Development Bank. The report explores the facts that In October 2000, the Asian Development Bank (ADB) approved a loan for the Chittagong Hill Tracts Rural Development Project.

The project covered all three districts of the Chittagong Hill Tracts (CHT) region of Bangladesh—Khagrachhari, Rangamati, and Bandarban. Its primary objective was to reduce the incidence of absolute poverty among the rural population by developing basic physical infrastructure and expanding income and employment opportunities that would substantially raise the standard of living of landless and marginal farmers (para. 38, report and recommendation of the President [RRP] [footnote 1]). The updated project framework with the achievements of the project is in Appendix 1.

The project had four major components (para. 39, RRP [footnote 1]): (i) rehabilitation and upgrading of feeder roads³ and rural roads⁴ (including bridges and culverts, and road safety structures); (ii) community development, to fill gaps in community-based small economic and social infrastructure and improve the socioeconomic condition of the people; (iii)

microenterprise development, to build the capacity of local nongovernment organizations (NGOs) to provide efficient and cost-effective microfinance services that would generate income and saving opportunities for the poor; and (iv) project management support, to strengthen the capacity of the executing and implementing agencies with logistic facilities, including human resources and consulting services.

The project was the first development initiative in the CHT since the signing of the Peace Accord in 1997. Access to remote rural areas in the region was poor because of the hilly terrain, the lack of rural communication facilities, the very slow pace of development during the prolonged insurgency, and the high incidence of poverty among the landless and marginal rural population. The project laid the foundations for confidence building and for rural and socioeconomic development in the CHT.

Consistent with the rural development strategy and objectives in the government's Fifth Five-Year Plan (1995–2000), the project concentrated on helping the least developed and most underserved areas like the CHT, on reducing poverty by improving rural infrastructure and income-generating opportunities, on empowering women by giving them better access to productive resources, and on involving community and local government institutions in the planning and implementation of local development projects (paras. 19–20, RRP [footnote 1]).

The project design was highly relevant to ADB's country operational strategy for Bangladesh and the overall strategic objective of poverty reduction. These strategies sustained the project approaches—confidence building, community leadership and participation in rural infrastructure development and microenterprise lending, productivity raising among the rural poor, and access to economic and social resources for women and landless and marginal farmers.

The key emphasis was on developing the countryside and helping to rectify the highly skewed income distribution by providing rural roads, small irrigation systems, and crop production and agro-business credit and microfinance facilities. The project approaches were also in step with the measures identified in ADB's country operational strategy and its partnership agreement with Bangladesh for poverty reduction.⁶ The project stayed relevant during the project period.

The project design used the findings of the ADB evaluation study of completed projects in Bangladesh, the lessons learned, and community feedback, which brought out the importance of institutional strengthening (of executing agencies, regional and district entities, and beneficiary groups and communities), the early participation of beneficiaries in design and implementation and in operation and maintenance (O&M), in-depth sector analysis, for the location of the project management team within the project area, and flexibility in project design and implementation to suit local needs.

- **Faruque, A. Haolader** (2015, December) conducted a research work on **“Entrepreneurship Education in TVET for Small and Medium Enterprise Development: A Case Study in Bangladesh”**.

The curricular focus in business competence and entrepreneurship education: The writer studied the TVET curricula, developed and endorsed by Bangladesh Technical Education Board (BTEB), in order to determine the curricular focus in business competence and entrepreneurship education for TVET students in Bangladesh.

As mentioned in Section 1.5, TVET is offered at Diploma and Certificate level in numerous technical, business and service specializations. At Diploma level, out of the total of fifty courses the business skills related courses, specifically for the 4-Year Diploma programmes are: business organization and communication (2 credits), book keeping and accounting (2credits), industrial management (2 credits), environmental management (2 credits), and entrepreneurship education (2 credits).

Therefore, the business competence relevant courses amount to about 6% (10 credits) of the total of 162 credits. These courses are delivered only through theory classes. There is no practical or tutorial class for this group of courses. As per the BTEB (2014) curriculum, the aim of the entrepreneurship course is to encourage students to consider self-employment as a viable career option and to help them acquire an entrepreneurial mindset and the basic entrepreneurial skills required to start a micro/small business.

The main learning objectives of the course are to understand the basic concept of entrepreneurship, economic development and growth and ideas about venture capital. It also includes operational aspects of project selection, evaluation and financial planning as well as understanding the environment for entrepreneurship and the sources and ways of getting assistance.

For these learning objectives the following contents are included in the course: Concepts of entrepreneurship and the entrepreneur; Entrepreneurship and economic development; Environment for entrepreneurship; Entrepreneurship in the theories of economic growth; Sources and evaluation of venture ideas in Bangladesh; Financial planning; Project selection; Self -employment and entrepreneurial motivation; Business plan; Sources of assistance & industrial sanctioning procedure, Insurance and risk protection; and Case studies (BTEB, 2014).

Who delivers the course and how: findings are as follows: ninety percent of the teachers who participated in the survey have teaching experience of more than 5 years. However, almost all teachers, but two, have no entrepreneurial experience; i.e.- they never started and ran a business. Almost three quarters (70%) of the teachers never even worked in an enterprise.

Only about a quarter have such working experience which varied in duration from one year to more than five years. To a question if they had undergone any training on entrepreneurship, none responded positively. About forty percent of these teachers have Diploma qualification in Engineering Technology, and the rest have university level (ISCED 5 or above) bachelor's degree (40%) and master's degree (20%) in business, management and/or social sciences.

In the second part of the survey, it was found that the teachers followed lecture method in teaching which focused mainly on theory. Other teaching methods such as demonstration, group discussion, etc., were mentioned in very few instances. No teacher mentioned about using business simulation or a mini-project approach which are considered effective in teaching an entrepreneurship course (Arifin & Gerke, 2014).

Teachers mentioned the use of teaching aids such as multimedia and whiteboard. Enterprises or industries were not involved in teaching and promoting entrepreneurship in the TVET programmes. The teachers said that they needed training for effective delivery of the course.

● **PROJECT TEAM: 1. Mr. Syed Md. Haider Ali**, Director General, IMED Team Leader, **2. Md. Khalilur Rahman**, Director, IMED Team Member **3. Ms. Quamrun Nessa**, Deputy Director, IMED Team Member **4. Ms Nargis Jahan**, Assistant Director, IMED Team Member Consultant, IMED **and Professor Masuda M. Rashid Chowdhury**, Professor, University of Dhaka. They prepared an “**Evaluation Study of the Chittagong Hill Tracts Rural Development Project**” (2nd revised, final report) on June, 2011.

The report explained that the project has been one of the most important achievements for the people of the 3 Hill Districts of the Chittagong Hill Tracts, Rangamati, Bandarban and Khagrachari. The opportunities have initiated a tremendous impact on the rural people of the region, creating a massive development of the socio-economic situation, especially through infra-structure development of the area, training and micro-finance programmes.

Based on 111 Unions, of the 3 Hill Districts of CHT, the project has initiated miraculous changes amongst the poor rural population, majority of whom lived from hand to mouth. They were mostly landless and worked as labourers. Life was not only risky, but also uncertain. There were no employment opportunities, few income generating activities and above all a very backward area prevailed for the people without proper communication systems.

It was heartening to see during the impact evaluation visits, the smiles of attainment as people walked through the newly constructed roads and above all the bridges between the hills which created enormous socio-economic opportunities for these recently developed areas. The micro-credit loans, the infra-structure development and the community development programmes had changed the lives of the people, who had waited for ages to witness development of these regions.

Farmers today found customers near their fields eagerly waiting to buy their agricultural products, while many utilized the transports available to carry their products to the market. The days were over, when they used to walk for miles, trudging along the roads, carrying their products on their heads on their way to markets. Owners of mango groves, orange and leche orchards, pineapple plantations, cashew-nut gardens did not worry anymore about taking their fruits to the market in time as customers flocked in to buy their products right from their door-steps.

Parents didn't worry anymore about their children being drowned in the Kaptai Lake on their way to school as the bridges constructed had made life more secured. Tourists thronged from hills to hills in their automobiles, happily driving through newly constructed hilly roads, enjoying with excitement the magnificent scenery of the Chittagong Hill Tracts. Women empowerment increased as they found jobs and employment both in the socio-economic opportunities of business, service and agriculture, enjoying with pride their earnings and their economic contributions to their families.

To-day, these poor men and women, including both the Tribals and the Bengali population, had a vision ahead, a security and an opportunity. They had learnt to progress and dream of a prosperous future. This was the change --- the socio-economic and cultural change, brought in through the greatest opportunities provided through the economic and infra-structure development of the Chittagong Hill Tracts Rural Development Project.

Recommendations: *Objectives of the project suggest recommendations for more pragmatic and effective implementation of the project in future.*

1. The training programmes must be properly planned with increased duration and latest information. Technology-based training should be provided.
2. PMU Management must be strengthened, made accountable and made to maintain all records of activities. Sufficient manpower should be recruited to effectively implement all the programmes of the Project.
3. NGO activities must be checked & monitored by PMU officials. NGOs must maintain all records of activities including list of beneficiaries, Micro-finance disbursed and trainings conducted
4. Tourism must be developed with proper planning through future projects, enabling an efficient development of the CHT through effective tourism growth.
5. Hill-based income opportunities must be planned for the beneficiaries.
6. Regional balance must be attained and maintained.
7. Income imbalance among districts must be rectified and corrected with opportunities and remedies.
8. Environment protection issues must be strengthened to protect the hills, forests, ravines, special plants, water bodies and natural surroundings engulfing the picturesque scenic beauty of the Chittagong Hill Tracts.
9. The tribal culture, the indigenous designs and products, the traditional attire and textiles, the age-old beliefs must all be protected through the project, in order to preserve the cultural harmony and the magnificent heritage.

10. Proper maintenance of infrastructure must be conducted by LGED and included in the future phases of project to protect the roads, bridges, culverts, drains and other infrastructure facilities provided.

11. Compensation money for acquisition of land for infrastructure development must be included in Project.

12. Employment opportunities in various new occupations for livelihood must be activated.

13. The project officials must evaluate the progress of the beneficiaries, the development of the area and the impact on the country, in order to ascertain the progress of the project and build a beautiful and prosperous Bangladesh, keeping the sanctity of the people, the traditions of the region and the heritage of the culture.

14. Recommendations have been formulated keeping in mind the allocations, changes, improvements to be included in future projects for providing potential and better opportunities for the people in order to benefit further from forthcoming projects.

● **Kirti Nishan Chakma** (Team Leader), **Shyamal Kanti Barman**; Community Empowerment and Economic Development Expert: Chittagong Hill Tracts Development Facility (CHTDF) and United Nations Development Programme (UNDP). They (2013, February) prepared a report namely “**Promotion of Development and Confidence Building in the Chittagong Hill Tracts**”. This study explores that some potential technologies for CHTDF project:

1. Vegetable cultivation: Vegetable cultivation in croplands and homesteads is a common practice in Bangladesh. Farmers use to grow both winter and summer vegetable. However, this scenario is not common for the farmers of CHT districts. There is serious lack of cultivable lands in the CHT districts.

Also, the farmers of Kharachari and Bandarban districts suffer from lack of water for irrigation. Most of the people are very poor there. Also, they have very limited croplands to grow vegetable. Regarding the input availability, vegetable seeds are available in the market. However, farmers usually complain about their (seed) quality and price.

This area is deficit in vegetable production. As a result, there is a big demand for vegetable. It can also grow in short period. The most popular crop cultivation system is practiced in the “Ghona” (valleys of hills or foot hill areas).

As the ghona lands are not widely available, the cropping intensity is very high there. Usually, farmers cultivate horticulture crops in the higher parts of the ghona and rice in the shallower parts. Also, in the ghona, farmers practice both trellis and non- trellis cultivation systems. High value crops in hydroponics/ aquaponics system could also be cultivated here to deal with limited land resource.

Hydroponic/aquaponics could be a suitable technology option for vegetable cultivation in Rangamati district. Although the farmers here have not practiced this technology, however, some of them have seen it in a television programme. In this system vegetable are cultivated in metal or plastic tanks with fresh water and necessary nutrients are added at regular basis. Fish also produced in this system.

The primary investment is comparatively higher for this technology. This could be done also by community approach. Besides, pit cultivation could be another potential technology option here for vegetable cultivation. In this system, small pits are made and are filled up with manure or compost in a jute sac and seedlings are planted thereby.

Again, in the plain lands of Khagrachari, dyke cropping could be a useful and practical technology option for vegetable cultivation. Farmers grow vegetable on dykes of rice fields in many parts of Bangladesh. Many organizations (e.g.- CARE-Bangladesh, FAO, DANIDA, etc.) have promoted this technology. Production cost is also low here.

2. Mushroom and or orchid culture: They have mentioned that the climatic condition here is very much suitable for mushroom cultivation and many of them made significant profit from mushroom cultivation. However, the technology is not well known to the farmers and initial investment is high and market linkage yet to be established.

The idea of orchid culture came from the FGD participants while discussing about high value crop. They have mentioned that the CHT districts are the home of spectacular orchid. The demand for orchid flowers is also very high in the urban market. They are also expensive.

3. Promotion of GIFT Tilapia: Tilapia is one of the most potential fish species for aquaculture. Now a day tilapia is available at local level. Although mono-sex tilapia cultivation is getting popularize, it has some limitations; e.g.- hatcheries are not close to these areas, continuous dependency on hatchery operators, etc. Tilapia could be promoted here through introducing developing satellite brood-rearers and decentralized seed production technologies.

4. Decentralized (fish) Seed Production (DSP): DSP is extremely simple. Usually, farmers collect the matured tilapia from farmer's ponds and stock in the irrigated rice fields, which are prepared by rising dikes, digging small ditches or trenches. Brood tilapia gradually become accustomed to this environment and it lays eggs in the trenches or ditch.

Nursing of fertile eggs/ hatchlings is done inside the mouth cavity of tilapia for few days to void predation. After few days, hatchings move to the rice fields and use it for feeding. Hatchlings reach fry/ fingerling size within 1.5 to 2 months. It is wise to harvest the fry/ fingerling partially when they reach 4 – 5 cm size. It helps to maintain optimum stocking density to get better production and survival rate.

5. Cage aquaculture: Cage aquaculture is a technique of cultivating fishes in a confined device (usually made up with nets). The net cages are put in either ponds or open water-bodies. Fishes are stocked in high density and are supplied with supplementary feed. Cage culture contributes effectively to sustainable rural livelihoods, generating income at critical times of the year when food shortage reaches its peak, and when casual employment is limited. Cage aquaculture could be a very attractive and profitable option instead of crick fishery for the poor and community people next to the Kaptai Lake.

They can do it individually or community based in canals or in ponds. Cage culture is a lowcost technology, labor inputs are quite low, even poor women can manage cage successfully and technology is flexible, so it can be adapted to individual needs.

6. Poultry/Swan/ Duck rearing: In most of the PDCs, farmers used to rear poultry birds. Some birds died due to avian influenza. However, farmers, particularly women are very much interested to rear poultry birds, particularly broody hens. Proper vaccination has to be ensured for this purpose.

7. Fodder cultivation (German grass on dykes/embankment): Crisis of fodder is rigorous here. Community based or even individual level fodder cultivation on the roadside, dykes of rice

fields and on the slopes of the embankment could be very much useful technology option. This will help to rear cows.

8. Sheep rearing: Sheep is commonly known as hardy animal. It can tolerate stress conditions and are less susceptible to diseases. Usually, they need very minimum care. Sheep rearing could be a very profitable technology option here. Improved technologies could be adopted for sheep rearing; e.g.- stall feeding, semi-scavenging system, etc.

9. Stall feeding (goat/cow/sheep): Cow and goat rearing is very common in this region. Here, greenery is disappearing day by day due to many reasons. As a result, number of cows and goats are reducing significantly. Also, farmers are facing severe problem to increase organic matters in their fields. In this situation stall feeding of goat, sheep and cows could help to increase their (LS) population as well as bring profit to farmers. In stall-feeding system animals are kept in bamboo made small cages in a well-ventilated room and fed them in stalls.

10. Beef Fattening: Beef fattening is a popular technology to make remarkable profit within short period. Usually, weak oxen are fed with quality supplementary feed, nurse for couple of months and are sold during festivals to obtain higher price.

11. Farmers' Service Centers (FSCs): In order to help farmers in adopting the potential technologies there must have an arrangement so that they can get the complimentary inputs at their doorsteps. Also, the arrangement for marketing of produces, especially the cash crops may help in using the modern technologies in these crops by its producers. In this fact, some Local Extensionists (Les) could be developed who can operate Farmers' Service Centers (FSCs). It could be established at the Union/ Block level with the following facilities:

12. Soil and water testing facilities: □ Supply of all necessary agricultural inputs such as fertilizers, pesticides, herbicides, HYV/ hybrid seeds, and agricultural implements.

13. Workshop for repairing the agricultural machinery and equipment with minimum charges and fees.

14. Buying of cash crops and seasonal crops from the farmers at reasonable prices.

15. Vaccination programme for animals and birds.

16. Supply fingerlings to the pond owners.

● **Dr. Mahfuzul Haque (2001):** Wrote an article namely “**Chittagong Hill Tracts of Bangladesh: Physical Environment**”.

The essence of Jhum cultivation is the clearing and burning of surface vegetation before planting mixed crops of rice, millet, sesame, maize, vegetable and cotton. The mixed nature of cropping ensures a steady supply of food throughout the year.

At the end of each cycle, the land is left to rejuvenate for 6/7 years and the Jhumiyas move to another destination. For centuries, Jhum cultivation has worked effectively. There was no serious deterioration of the soil quality and the plots lay fallow for at least seven years.

The pressure on shifting cultivation in the hill tracts began as the region was declared reserve forests and a Jhum tax was imposed. Stern on land increased as people from the plains started pouring in. The fallow period was reduced, resulting in ecological deterioration.

A century ago, the CHT was self-sufficient in food, but not anymore. The most important event that shook the lives of the tribal people was the construction of the Kaptai hydroelectric project in 1963. The dam submerged 250 square miles of prime agricultural land, which constituted 40 percent of the total cultivable land in the hill tracts. Some 100,000 tribal people, mostly chakmas and non-nomadic rice farmers, were displaced by the project.

They were promised compensation and resettlement which did not materialize. As a result, 40,000 families, mostly chakmas, migrated to India. In view of the shortage of cultivable and, the length of the cycle of shifting cultivation (i.e.- fallow period) drastically decreased from 10 to 3-4 years. A majority of chakmas feel that the hydro-electric project had made their lives worse.

A survey conducted among the chakmas related that 69% were of the view that the dam created food and financial problems for them, 84% said they had to change residence due to inundation, 69% complained of inadequate government help for resettlement, 58% observed that they had no scope for employment in the project and 93% felt that the economic condition of tribal people was better before the Kaptai dam was constructed. The dam adversely affected the self-sufficient nature of the tribal economy.

Moreover, it failed to create job opportunities for the hill people, as envisaged. Although a number of industries established in the neighborhood of the project, they did not generate much employment for the hill people. The government encouraged the tribal people to take up new occupations such as fishing and horticulture but the response was poor for two important reasons: the circumstantial disadvantage and lack of necessary skills.

● **Shamima Chowdhury (2001, September):**

Wrote an article namely “**Chittagong Hill Tracts and Environment**”, edited by Quamrul Islam Chowdhury, which was published by Forum of Environmental Journalists of Bangladesh (FEJB).

She mentioned the problems that the hill people considered to be hindrances to their development are: (1) Despoliation of forests, (2) Killing of wild animals without hindrance, (3) Unplanned Jhum cultivation and its adverse effects, (4) Inadequate communication system, (5) Drastic shortage of drinking water, (6) Water born disease as including malaria and diarrhea, (7) Inadequate health services and medicare, (8) Cutting of hills and collection of stones, (9) Floods and other natural calamities, (10) Destruction of the soil, (11) Cultivation of tobacco on rice lands, (12) Lack of education, (13) Attacks by elephants, (14) Polythene problems, (15) Lack of awareness, (16) Increase in the use of narcotics.

● **Pallab Chakma in his paper “Urge to tackle unemployment of Indigenous Youth in Bangladesh” explains the roots of unemployment in of IP youth in Bangladesh as:**

In general, indigenous youth in Bangladesh experience various problems, challenges, discrimination and/or exclusion to access to employment opportunities. To identify the problems, challenges and root causes of unemployment of IP youth, Kapaeng Foundation and International Labour Organization (ILO) jointly conducted FGDs with youth from nine indigenous communities (Bawm, Chakma, Khumi, Khyang, Marma, Mro, Pangkhua, Tangchangya and Tripura) in CHT under the project titled "Improving Indigenous and Tribal Peoples' Access to Justice and Development through Community based Monitoring" with support of European Union (EU), targeting ten specific domains. Moreover, Kapaeng Foundation and ILO conducted a series of FGDs with indigenous youth from plain land IPs (Barman, Khasi, Kora, Oraon, Mahato) in this regard. They have pointed out some problems they experience that affect their lives and create barriers to accessing employment opportunities. These are –

- a. Lack of capital for investment;
- b. Low access to financial services;
- c. Lack of skills or expertise to access to jobs in the competitive market;
- d. Low level of education and awareness for the jobs;
- e. Natural disaster causing displacement and migration;
- f. Substance abuse/ drug/alcohol addiction leading to be exploited by others;
- g. Lack of employment opportunity at local area;
- h. Wage discrimination (low paid);
- i. Low access to market due to poor infrastructure and communication system.
- j. Low access to employment opportunities in public sector;
- k. Lack of patronization for entrepreneurship development by government;
- l. Restriction on subsistence agriculture (Jhum Cultivation) (in CHT only).

● **Abul Kashem (2005, August)** mentioned about livelihood of IP people in Bangladesh in his research paper “**Indigenous people in Bangladesh: Their Struggle and Survival Strategy**” as: the indigenous people, not only belong distinct culture, but also, they have different way of livelihood. Although indigenous people are agriculturists, the ways of cultivation and preference of crops is different on the basis of geographical location.

Besides agriculture, they are engaged in different handicrafts. Due to geographical location, inclination to tradition, lack of education etc restrict most of them to engage in activities other than agriculture. However, some of them are working in various government and non-government organizations their number is negligible. From 1971 to date, the governments of Bangladesh have tried little to ensure their participation in different mainstream earning activities.

Due to policy level limitations, indigenous people are getting less priority. The indigenous communities are economically deprived, have less access to resource; rapidly losing their lands and other properties; victimizing from social, cultural and political corners by the mainstream people. Exploitation, torture, humiliation etc. are always threatening their regular lives.

Even state policies often ignore their interests. Being distinct from the majority people of the country the indigenous communities are frequently forced into conditions that generate tension and insecurity at the cultural, psychological and economic levels.

● **Dr. P.B. Chakma (1998, July):** Wrote an article in the Journal of Management, University of Dhaka namely “**The Economy of the Indigenous peoples of the CHT**”. Dr. Chakma explained that the economic condition of the indigenous peoples of the CHT in the present context is far from being satisfactory. Until the late sixties the indigenous people were self-sufficient in food and other daily necessities.

The situation is quite different now. A number of man-made factors can be attributed for this. The construction of the Kaptai dam in the early sixties, government sponsored forced migration of lacs of Bengali settlers from the plains particularly during the late seventies and early eighties, the corrupt practices of unscrupulous Bengali traders and money lenders, unwise implementation of development projects without giving due consideration to the cause of the indigenous people, etc. are some of the reasons causing economic history of the indigenous people of the CHT.

Thus, is the history of deprivation, deception and devaluation of one form or the other. Time now high for policy planners, sympathizers and those concerned with indigenous people, causes to take measures in the right directions. The issues like initiation of socio-economic impact study before implementation of any development project in the CHT, ensuring due participation of the indigenous peoples in the developmental activities, adoption of various protectionist measures, ensuring ownership right (benefit right) to various resources of the CHT for the indigenous people and above all, demonstration of utmost sincerity by various stake holders for the causes of the indigenous people need to be given due consideration.

● **Raja Devasish Roy and Sadeka Halim (2001, September):** Jointly wrote an article namely “**valuing ‘village commons’ in forestry: A case from the Chittagong Hill Tracts.**” They wrote about the changes in resource use and livelihood patterns as: The lands were implemented through a broad range of government managed programmes and projects resulting in high in migration and promotion of market-oriented horticulture and tree plantations that led to the conversion of many village common forests (VCFs) into orchards and plantations.

However, the project on horticulture by the forest department’s Jhum control division and the CHT Development Board proved to be almost total failures (Sattar, 1995:11, Roy, 1998:95). In conjunction with the growing integration of the CHT economy with the market economy of

the plains, this policy shifts were to result in fundamental occupational changes among the regions farming population even outside of formal government programmes and projects.

From a broad perspective, it is difficult not to reach the conclusion that the decline and degradation of forests in general and VCFs in particular, is directly related to the scarcity of land and other natural resources vis-a-vis the constantly growing population which subsists upon them. Apart from the appropriation of the reserved forests, some major occupational changes among the indigenous population also led to huge reduction of the forest cover the CHT.

These include the introduction of plough cultivation – largely wet rice farming – in the first quarter of the 19th century, the growth of sedentary orchards for market-oriented horticulture in the 1960s and the constantly growing practice of tree farming by settled indigenous farmers in the 1970s (Roy, 2000, C: 101-103).

It may be noted that we include tree farming among the causes of deforestation since we do not wish to consider tree plantations with narrow genetic bases (predominantly teak and Gamar or Gmetina Arborea) as “forest” in the natural sense of the word.

In the case of plough cultivation and horticulture, it was not only the cultivated patches that were deforested, but also the surrounding areas, since wildlife from the forests were regarded as a threat both to the cultivated plot and to the safety of the farmers.

● A 2 (Two) day long “**International skills conference 2019**” held at Radisson Blu, Dhaka from (9-10) March, 2019, organized by Skills and Training Enhancement Project (STEP) key findings were explored in the various sessions are as follows:

1. Labour productivity in Bangladesh lags behind those of other low to middle income countries and of the global average and this poor performance in labour productivity is largely due to poor quality of education and low exposure to technical training of the workforce.

2. There is an urgent need for developing actionable human capital development strategies coherent with national development policies and adaptable to changing demand from the national, regional and international job market.

3. 'Employment led-growth' model has been adopted as the national development model, but it is yet to be fully reflected in the annual budgets and development programs.
4. National Skills Development Authority, National Human Resources Development Fund, Quality and Accreditation Council should be made fully functional and the (draft) Education Act, etc. should be enacted with in the shortest possible time.
5. The government, private sector and development partners are keen on working together on issues of human capital development, but there is need for one unanimously agreed roadmap to reach that coveted objective.
6. Skills needs of the immediate future, which is 5 to 10 years from now, should be correctly assessed and our education and TVET systems should be aligned accordingly to ensure gains from the upcoming 'demographic dividend'; failing to do so will result in demographic liability'.
7. Apart from improvements in the quality of education at all levels, specific skills and technical training will be needed to serve the unique needs of specific industrial sectors and we need to build our institutions accordingly.
8. In addition to the TVET institutions, we need to develop suitable management institutions in orders to have continuous capacity building opportunities for the management and technical professionals of the country.
9. Changing business ideologies and fast paced shifts in technology globally are putting demands for new sets of competencies and learning requirements upon the workforce, which requires serious consideration by the policy makers, business communities and academia.
10. At this age of automation we need to fear the proliferation of technology, but rather should embrace it at all spheres of life and work; automation may take away routine and repetitive jobs but not the ones that require human judgement and direction but we need to align our education system before we reach that comfort level.
11. The 4th industrial revolution offers ample opportunities for creating wealth and livelihood in a cleaner and more efficient production process, but there is a need for retraining and reskilling our workforce and coming up with innovation business ideas.

12. Technology oriented applications and solutions can offer immense opportunities for the informal sector workers, but a conducive work environment, e.g.- regulatory reforms for e-commerce and electronic money transfer, IT infrastructure and optimum monitoring should be in place.

13. Innovating financing schemes should be introduced to mitigate the difficulties in reaching out to the informal sector.

14. Successful initiatives, such as, recognition of prior learning, should be scaled up to expand the outreach to the informal sector workers.

15. There is an urgent need for setting up Labour Market Information System (LMIS) in a systematic manner; the first step can be to gather labour market intelligence on the present and future skills need in the major destination countries for our migrant workforce, and align our TVET system accordingly.

16. Accreditation and recognition of our skills certificate is a hurdle; we need to address this challenge by scaling up the National Quality Framework for Technical and Vocational Education, strengthening the monitoring and inspection capacity of the concerned regulatory authorities, and allowing 3rd party evaluation from time to time.

17. Local initiatives on demand- based skills development will address the gap in the national capacity building and will earn manifold remittance inflow from destination countries.

18. All the stake holders signed a ‘Joint Communiqué’ pledging to work together for the future skills programs.

● **Md. Shahadat Hossain Khan, Mahbub Hasan and K.M. Md. Golam Rabbani** conducted a research work namely “**Current Trends and Issues in TVET of Bangladesh**”. They explained as: many studies reported that “development of vocational skills” and “promotion of lifelong learning” are recognized as core national strategy in many advanced countries such as Australia, Canada, Japan and United States (Agbola & Lambert, 2010; Coles & Leney, 2009; Drage, 2009; McGrath, 2012).

Additionally, other countries such as Finland, Korea, Taiwan and Singapore strengthened their comparative progress and gained the competitive position in global market through adapting selected strategies in this TVET sectors (Hawley & Paek, 2005; Kuruvilla, Erickson, & Hwang, 2002). On the other side, most of the developing countries still could not finalize the specific strategies and action plan like the developed countries.

However, government and other non-government agencies of developing countries realized lately that TVET is an important area through which huge population could be turned into skilled manpower and hence they can contribute in the economic development. Anderson (2009) supports these arguments and claims that TVET is built on two key purposes:

1. Training which leads to productivity, which in turn leads to economic growth (training for growth);
2. Skills development which leads to employability, which in turn leads to jobs (skills for work). Previous studies also showed that the integration of education, skills and work in Asia and Africa has been considered as a priority- based action for human resource development through TVET which is given much more attention for their social and economic development (Aring, 2015; Boutin, Chinien, Moratis, & van Baalen, 2009).

After realizing the potential strength of TVET sectors, continual efforts are made to improve the present conditions of TVET sectors. Many of these countries have already developed policies and strategies related to TVET and undertook great initiatives to improve quality of TVET sectors to meet the present challenges. Recent progress in the elaboration of national qualifications framework (NFQ) in Bangladesh, one of the developing countries of Asia, is an example of integrating joint efforts in government and private sector to ensure high quality TVET in order to meeting individual, enterprise and economic needs.

With these brief introduction and background, this article aims to illustrate a number of new initiatives and challenges that TVET sectors of Bangladesh are encountering recently. Technology integration in education is being widely practiced throughout the whole world. TVET is not an exception in this revolution.

As a developing country, Bangladesh is also running towards the global trends to incorporate technology in each and every field with a slogan of 'Digital Bangladesh'. As the population is relatively high within its small, limited lands, government is trying to convert this vast number of population into useful workforce through TVET initiative.

With this view, government had taken a project in 2011 with the collaboration of ILO to reform the Technical and Vocational Education of Bangladesh. The project is now in its implementation process. Several reforms have been made under this project so that Bangladesh TVET can run with the global pace. A national qualification framework has also been developed so as to get accreditation globally. ICT integration is an unavoidable area for TVET as technology is developing too fast. To keep pace with the global trends, government should take its maximum initiative to integrate ICT in TVET.

Chapter: Three

METHODOLOGY OF THE STUDY

3.1 Introduction:

This study was both quantitative and qualitative in nature. In order to understand the role of TVET on livelihood development on chakma diploma engineers in Khagrachari district, the study mainly followed social survey.

Besides, in depth interview with knowledgeable persons (KII) of the chakma community was held to enrich the research work. Focus Group Discussions (FGD) were conducted for collecting data and to cross examine the information gathered from the diploma engineers.

Though main questionnaires were prepared for chakma diploma engineers, but questionnaire have been made for the teachers and principals to cross examine the data received from the chakma diploma engineers.

3.2 Selection of the study area:

Keeping the objectives of the study in view, purposively three catchment area namely, Khagrachari, Chattagram and Cox's Bazar were selected as study area. The reasons behind the selection of three districts are (a) Most of the Chakma Diploma Engineers choose Chattagram as service area next to Khagrachari; because Chattagram is the nearest district where they can serve comfortably and environment is similar to Khagrachari, (b) Since Khagrachari cannot provide all jobs in Khagrachari, they choose next best option to Cox's Bazar district, because it is surrounded by hills and Chakma Diploma Engineers feel comfortable to serve in Cox's Bazar, (c) There is a firm belief and reality is that there are less diploma service holders in the rest 61 districts. So, the selection of the 3(three) districts was the best and representative of Chakma diploma job holders. The 3(three) site selection is proved most effective as maximum Chakma diploma job holders were found in 3(three) sites. 3(Three) Data collectors were appointed for quick and direct communication with the respondents.

3.3 Population and selection of sample:

In this study, all the pass out chakma diploma engineers of Khagrachari district were considered as population. But it was not possible to trace out the location of all pass out chakma diploma engineers due to lack of sufficient data and information.

Therefore, it was not possible to determine the actual population size. Hence, random sampling procedure was not possible to follow. In this regard, purposive sampling procedure was followed.

All the chakma diploma engineers both in service or jobless either serving in public or private organizations were considered as population. In total 32 chakma diploma engineers were purposively selected as respondents. For key informant interview, 10 key informants were chosen from the knowledgeable persons or experts on chakma affairs.

Around 20 teachers were selected from the said locations. Four principals were selected accordingly. In case of FGD, in total 20 participants were selected purposively where 5(five) diploma engineers (in service), 4(four) diploma engineer (jobless), 2(two) educationist, 2(two) journalist, 2(two) entrepreneur, 2(two) women, 2(two) NGO representative and 1(one) from the civil society were selected as participants.

3(three) FGD discussions held in Cox’s Bazar, Chattogram and Khagrachari. It is to be noted that to mobilize according to chosen distribution is quite tough job to manage time for all the participants.

Table-4: Sample and Sampling Technique

Sl. No.	Sample	Sample Size	Sampling Technique	Remarks
1.	Chakma diploma engineers (in service)	28	Purposive	Urban and rural area.
2.	Chakma diploma engineers (in business)	02	Purposive	Urban and rural area.
3.	Chakma diploma engineers (jobless)	02	Purposive	Urban and rural area.
4.	Principal	4	Purposive	Principals from Chittagong, Bangladesh Sweden, Khagrachari Polytechnic Institute.
5.	Teacher	20	Purposive	Teachers from Chittagong, Bangladesh Sweden, Khagrachari and Cox’s Bazar Polytechnic Institute.
6.	Key informants	12	Purposive	Knowledgeable persons or experts on chakma affairs.
7.	Focus group discussion (20x3)	60	Purposive	Diploma in service (5), Diploma jobless (4), educationist (2), journalist (2), entrepreneur / industrialist (2) NGO representative (2), woman (2) civil society (1).
	Total =	128		

3.4 Audiences/ Respondent of the study:

The respondents of the study are 28 (twenty eight) chakma diploma engineer (in service), 2 (two) chakma diploma engineer (in business), 2 (two) chakma diploma engineer (jobless), 4 (four) principals from Polytechnic Institute, 20 (twenty) teachers from the Polytechnic Institute, 12 (twelve) key informants from knowledgeable person or experts on chakma affairs, in total 60 (sixty) comprising (3) FGD meetings held within the homogeneous group, but mixed professionals, i.e. diploma engineer (in service = 5, jobless = 4), educationist (2), entrepreneur (2), NGO representative (2), women (2) civil society (1) etc.

3.5 Developing tools and pretesting:

For data collection, 2(two) set of questionnaires were prepared for conducting the field survey. To make the questionnaire error free, a few pretests were done on respondents. In the light of pretesting necessary adaptations were brought in the questionnaire. As for example, it is understood from the answers of the respondent that they do not feel free in questionnaire made in English language rather they feel free in Bengali language. It is to be noted that the syllabus and course curriculum in diploma in engineering is in Bengali language (Bangla). That's why, for better understanding and easy access to respondents, English questionnaire were cancelled. Then translation done in Bengali (Bangla) language for easy communication with the respondents. From the follow up, it seems to be successful than the earlier attempt.

3.6 Data Collection:

From the present study, data were collected from the primary and secondary sources. Primary information was collected through questionnaire (diploma engineer, teacher and principal), Key Informant Interview (KII) and FGD, in depth interview, case study, observation etc. were included all through the research work. On the other hand, secondary data were collected from relevant available different published research reports, journals, books, little magazine, articles, publications, internet, relevant literature and studies. Primary data were collected from both urban and rural areas of Khagrachari district.

RESEARCH MATRIX

Title: The Role of Technical and Vocational Education and Training (TVET) on Livelihood Development of Chakma Diploma Engineers in Khagrachari District.

Objectives:

- 1) To find out the roles of TVET institute in enhancing chakma diploma engineers employment.
- 2) To assess employment ensure livelihood development of chakma diploma engineers.

Table-5: Research Matrix

Research Question	Research Design	Respondent (Proposed)	Population	Sample size	Instruments/ Tools	Pre-test No.
What is the roles of TVET institutes in enhancing chakma diploma engineers employment?	Mixed Method (Qualitative & Quantitative)	Chakma diploma engineers (in service)	71* (Tentative)	28	Questionnaire: Mixed type (open & closed)	7
		Chakma diploma engineers (in business)		02	Questionnaire: Mixed type (open & closed)	2
		Chakma diploma engineers (jobless)		02	Questionnaire: Mixed type (open & closed)	2
How employment ensures livelihood development of chakma diploma engineers?		Principal		04	Questionnaire	2
		Teacher		20	Questionnaire	5
		Civil Personnel in chakma community		12	Interview schedule for KII	2
				60 (3×20 = 60)	Check list for FDG	5
Total =				128		

***Foot note:** Since there was no survey held earlier to determine the figure of Chakma diploma engineers population on behalf of any Govt and private agency. So the figure of population was determined through a private survey conducted by the data collectors in collaboration with Hill Engineers Association.

Table-6: Research Matrix

Actual respondent number	Data collection area and institute	Data collection methods	Data collection Challenge	Finding
Chakma diploma engineers (in service) =28	Khagrachari, Chattagram, Cox's Bazar.	Face to face:	(i) Since livelihood matter is related with financial affairs, respondents are unwilling to disclose economic affairs. (ii) Engineers are busy men. That's why they cannot follow commitment and appointment in this regard. (iii) They do not feel free in English questionnaire, rather they feel free in Bengali questionnaire.	(i) Monthly income of the chakma diploma engineers has been increasing. (ii) Residence of the chakma diploma engineers has been improving significantly. (iii) Health, sanitation and pure drinking water etc. have been ensured than earlier.
Chakma diploma engineers (jobless) =02	Khagrachari, Chattagram, Cox's Bazar.			
Chakma diploma engineers (in business) =02	Khagrachari, Chattagram, Cox's Bazar.			
Principal =04	Khagrachari, Chattagram, B.S. Polytechnic Institute	Direct contact & e-mail		
Teacher=20	Khagrachari, Chattagram, Cox's Bazar	Direct contact		
Civil Personnel in chakma community=72		Face to contact		

3.7 Data Processing and Analysis:

Data processing and analysis started in the field with checking for completeness of the data and performing quality control. The plan for data processing and analysis was made after careful consideration of the objectives of the study. After completion of the filed work and data collection, data were given as input and compiled accordingly. The input data were finally checked and carefully coded, recorded and grouped into same and different variables. Data were analyzed and interpreted according to the objectives made for the study. In order to establish relationship between and among the variables, data were presented mainly in tabular forms. Qualitative data were analyzed in-depth description form. **Computer Program Microsoft word was used for data analysis.**

3.8 Ethical issues in research:

The professional society of discipline, the American Sociological Association (ASA) first published the code of ethics in 1971, which put the following basic principles:

- (i) Maintain objectivity and integrity in research.
- (ii) Respect the subject right to privacy and dignity.
- (iii) Protect the subject from personal harm.
- (iv) Preserve and maintain confidentiality.
- (v) Acknowledge research collaboration and assistance.
- (vi) Disclosed all sources of financial support.

(Source: Sarkar, Profulla, C (2018). Qualitative Reserarch in Multidisciplinary perspective. P-64).

Through the research work, I tried my level best to show respect and maintain the local norms, values and beliefs. I tried to follow the ethical guidelines given by Miles and Huberman (1994). I informed the respondents, local authority and stakeholders before my field work. The researcher received verbal consent from each respondent. The aim and purpose of the research were explained to every respondent. The researcher considered the interviewees' interest and willingness. Moreover, confidentiality and anonyrnity were assured.

For each set of questionnaire, interview schdule or check list; it was mentioned at heading that it had been prepared for a research work under Research and Knowledge Management Cell. He/ She had been selected for the research purpose all the data will be used only research and confidentiality will be maintained; i.e. -assurance had been given prior to taking answer through questionnaire instrument. It was true for the interview and FGD meeting also. Before resuming, all the affairs were explained verbally.

3.9 Accuracy and reliability of data:

The reasons behind using perposive sampling are to get representative data so that it can be generalized, time consuming and less involvement of fund and manpower. According to research methodology expert Dr. Profulla C. Sarkar (2018), "The choice of sample and sampling method should be clearly set out (ideally including any short comings of the sample) and should be reasonable. It is important to remember that sampling in qualitative research can be purposive and should not be random. Qualitative research is not experimental and does not purport to be generalisable and therefore does not require a large or random sample. People are

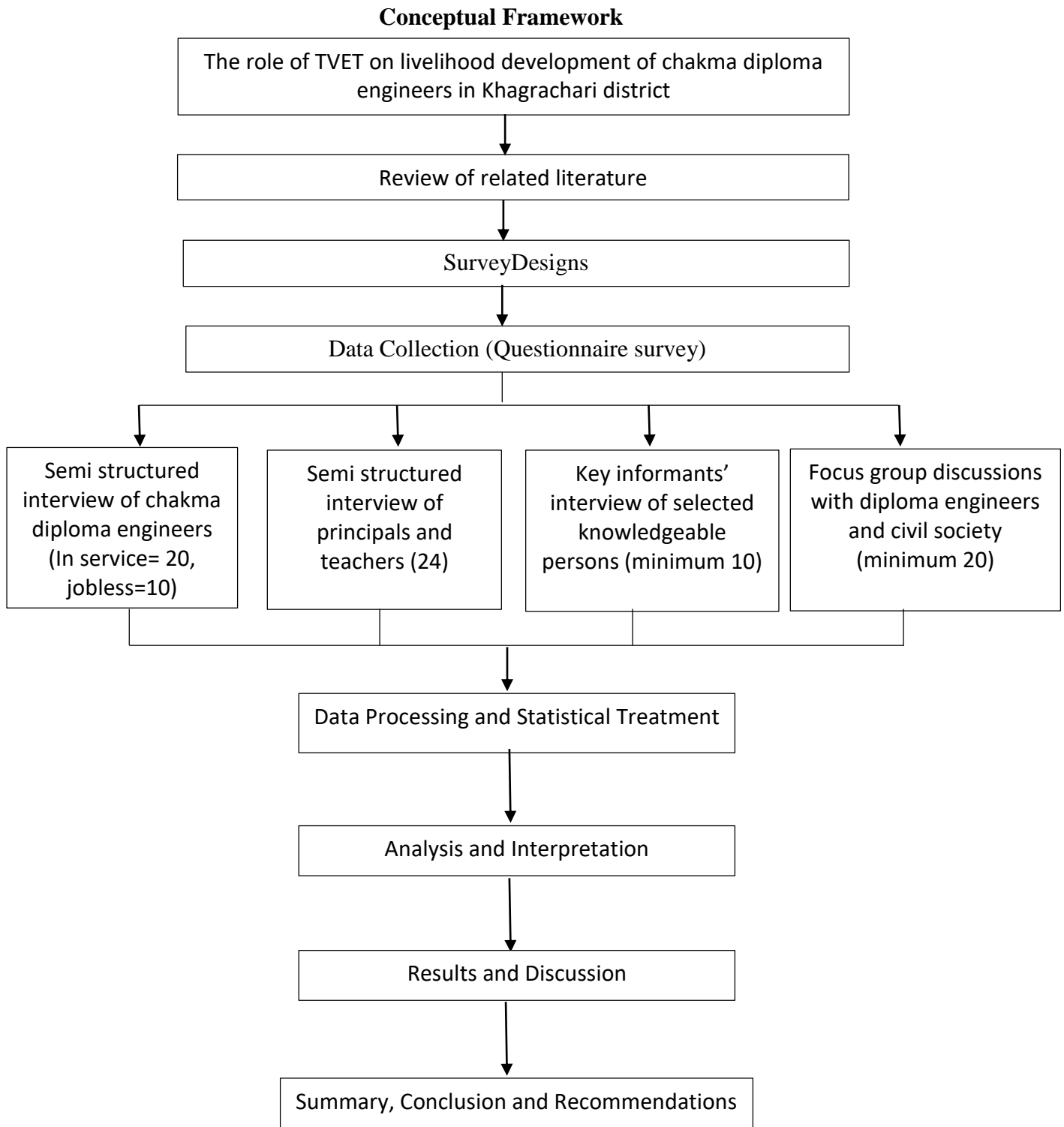
usually chosen for qualitative research best on being key informers”. According to J. Patton (1996), “In qualitative research, the sample is small and not chosen randomly. Rather, the choice of a sample is purposeful.” For example, if you intend study drug addicts at a drug rehabilitation centre, the researcher will select a few addicts to study (Sarkar, C. Profulla, P.105, 2008).

I think and I do believe that the respondents were selected very much representative of the Chakma Diploma Engineering Community, who reflects the picture of the whole community; it is no doubt. Since, the respondents were selected from both urban and rural area. That’s why respondent selection was proper and representative.

3.10 Data Validation:

Validity refers to trustworthiness which was done through cross checking the data collected from one source to that of others. If themes are established based on converging several sources of data or perspectives from participants, then this process can be claimed as adding to the validity of the study (Creswell 2009, p.191). In this study data were triangulated during survey and interview and latter justified with secondary data. We have cross checked all the informations gathered from the questionnaire instrument in FGD meeting and also in KII with knowledgeable persons from the Chakma community. We found there was a similarity among answers from respondents and FGD participants and KII interviewees. Another seminar was held in Cox’s Bazar Polytechnic Institute to validate the findings of the respondents. So all data are verified and validated through usual manner.

3.11 Conceptual framework:

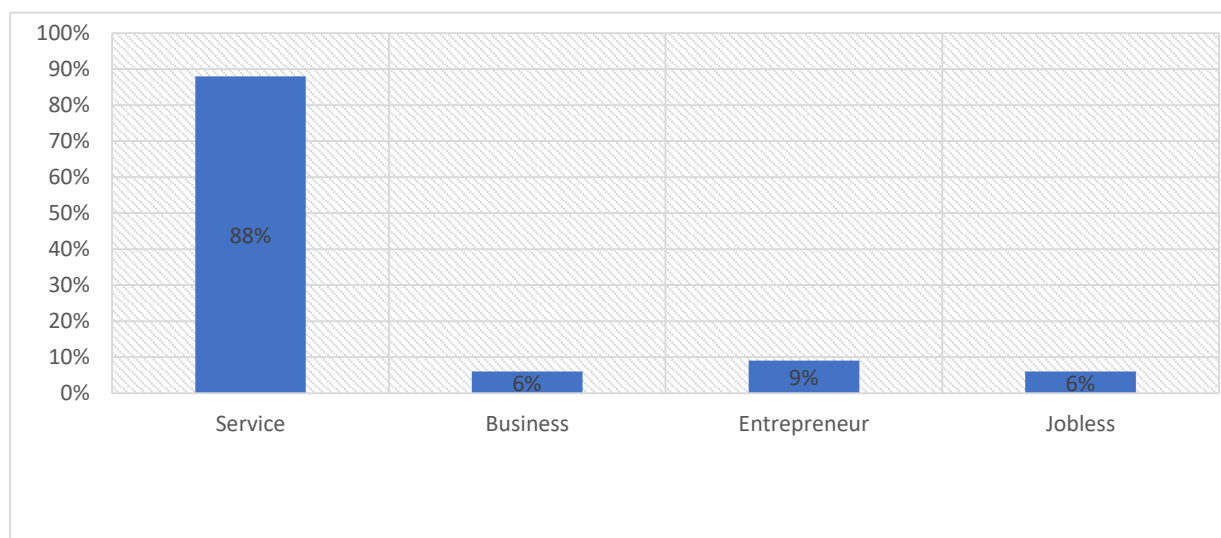


Chapter: Four

Data analysis and results

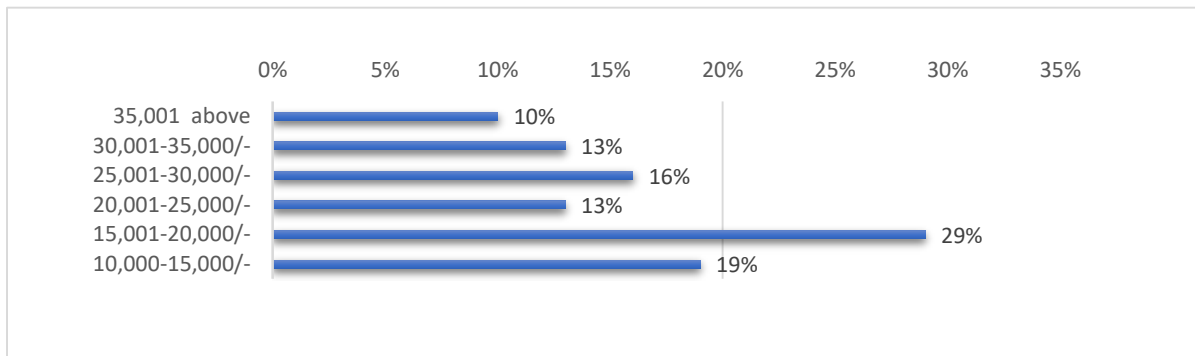
4.1 Introduction: The data received from the questionnaire survey, among the chakma diploma engineers in Khagrachari district were mixed type of questionnaires, where both qualitative and quantitative data were received. Question items were both open and closed ended. The quantitative data were processed later by MS Word. There were 32 respondents participated in the survey. Respondents were chosen from the catchment area: Khagrachari, chattagam and cox's Bazar.

4.2 Result from Instruments-1 (Questionnaire survey for Chakma TVET Diploma Engineers): It is found that out of 32 persons; 28 persons are employed in various jobs (somebody engaged in business and entrepreneurship), whereas 2 persons are jobless and 3 persons are entrepreneur (though their main job is private service) and 2 persons in business (though their main job is private service).



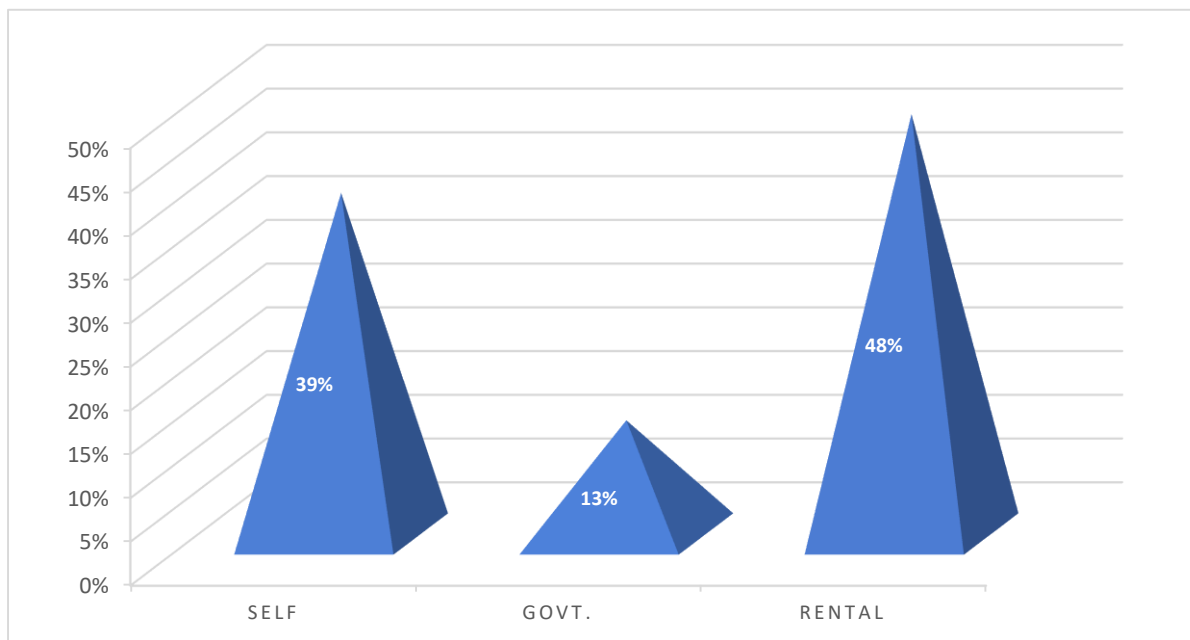
Graph-1: Present Status of Employment (Source: Field Survey, 2019-20)

Sources of income of the respondents have shown in the above graph. From above mentioned graph shows that 88% of the respondents are service holder. On the other hand, 6% respondents are engaged in business. Rest, 9% and 6% respondents are in entrepreneurship and jobless respectively.



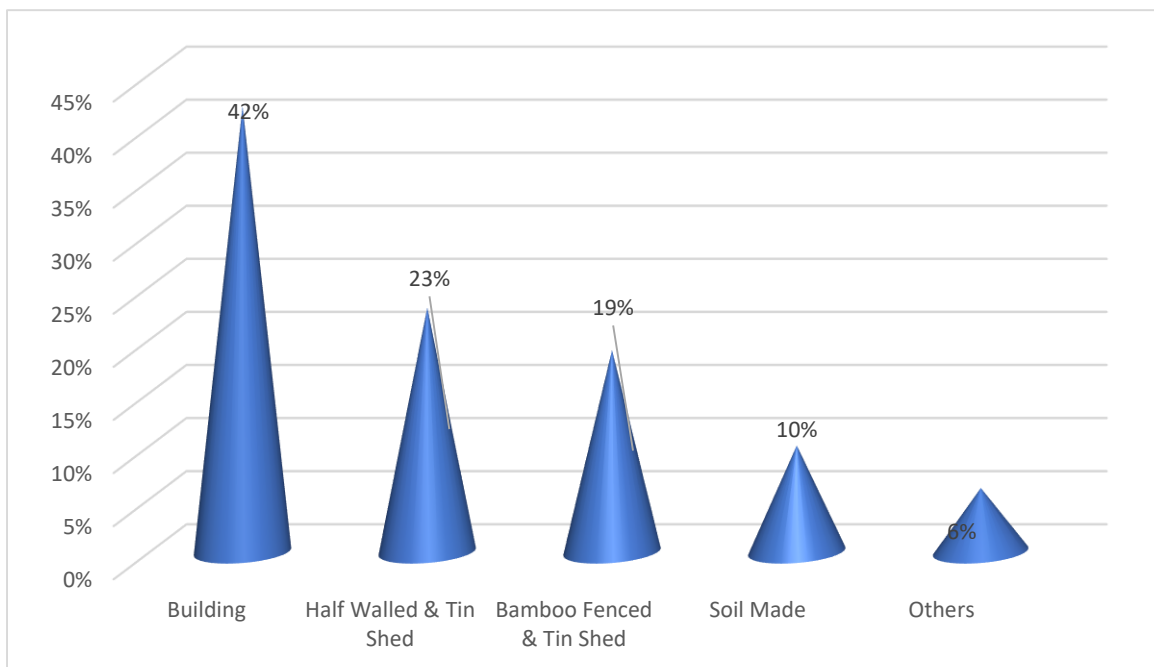
Graph-2: Monthly family income of the respondents (Source: Field Survey, 2019-20)

Above mentioned graph shows the monthly income of the respondents. Where, we found that 19% of the respondents' monthly income is in the range of BDT 10,000-15,000 .29% of the total respondents, whose income is between BDT 15,001-20,000 which is found for maximum respondents. 13% of total respondents, whose income lies between BDT 20,001-25,000. Besides, another 13 per cent of respondents draw BDT 30,000-35,000. Respondents draw BDT 35,001 and above is 10%, which is minimum. On the other hand, 16% of the respondents have income between BDT 25,001-30,000.



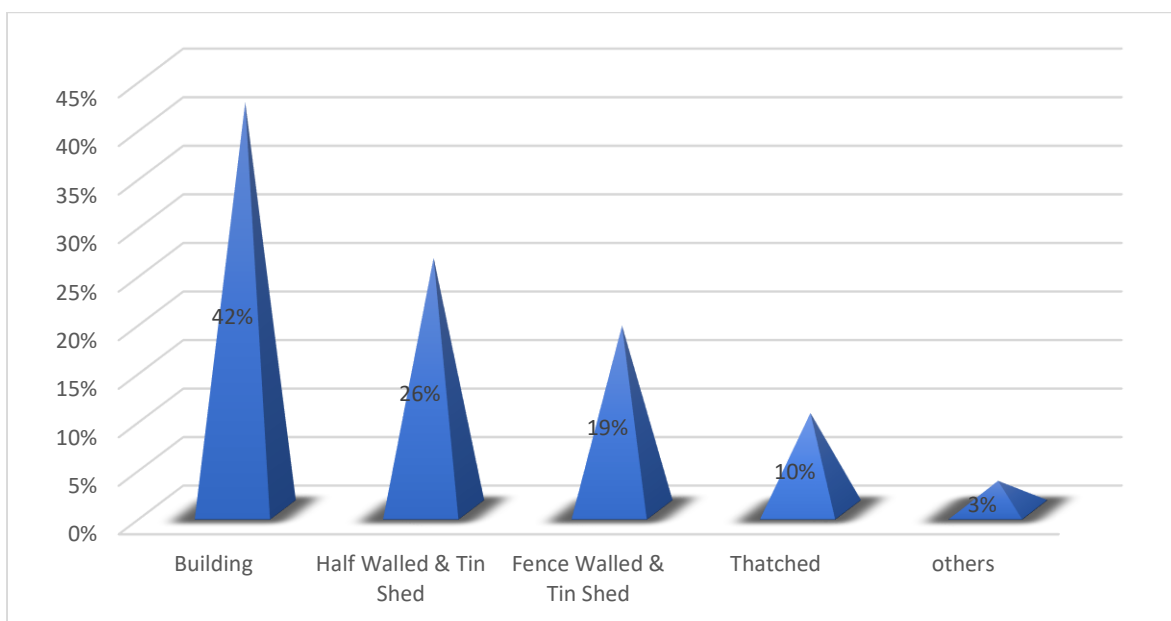
Graph-3: Residence of the respondents (Source: Field Survey, 2019-20)

Residence of the respondents has shown in the table and the graph. From the graph, we found that 39% of the respondents live their own houses, besides, 48% of the respondents' live in rental house and rest 13% respondents live in govt Rental house.



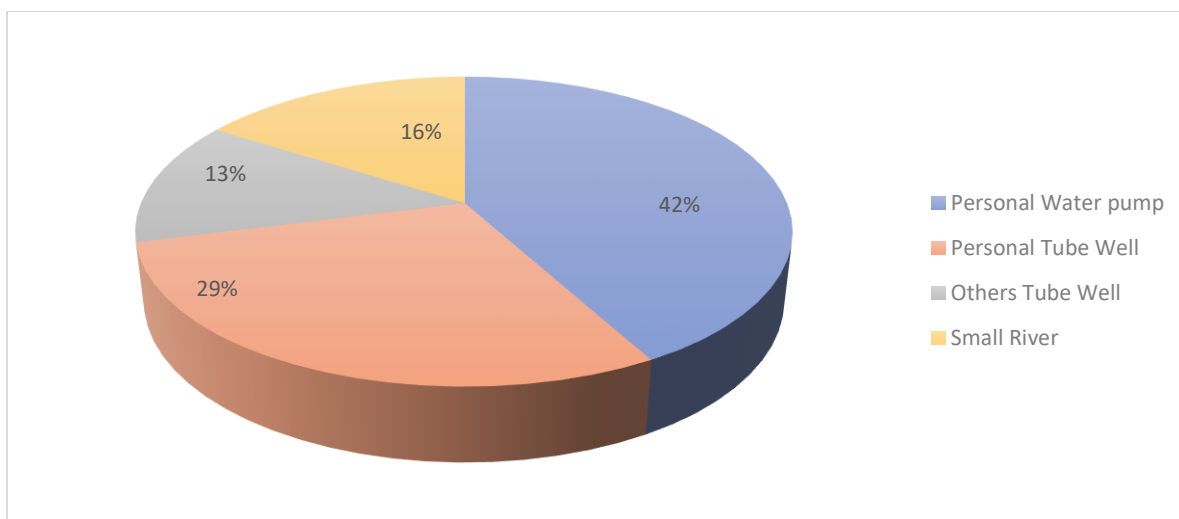
Graph-4: Types of houses of the respondents (Source: Field Survey,2019-20)

Types of house of the respondent shown in the graph. From the graph, we get that 42% of the respondents have buildings, whereas only 10% respondents live in soil made houses. On the other hand, 23% respondent lives in half walled & tin shed besides 19% of the respondents live in Bamboo fenced & tin shed respectively. Rest 6% lives in others type of residence.



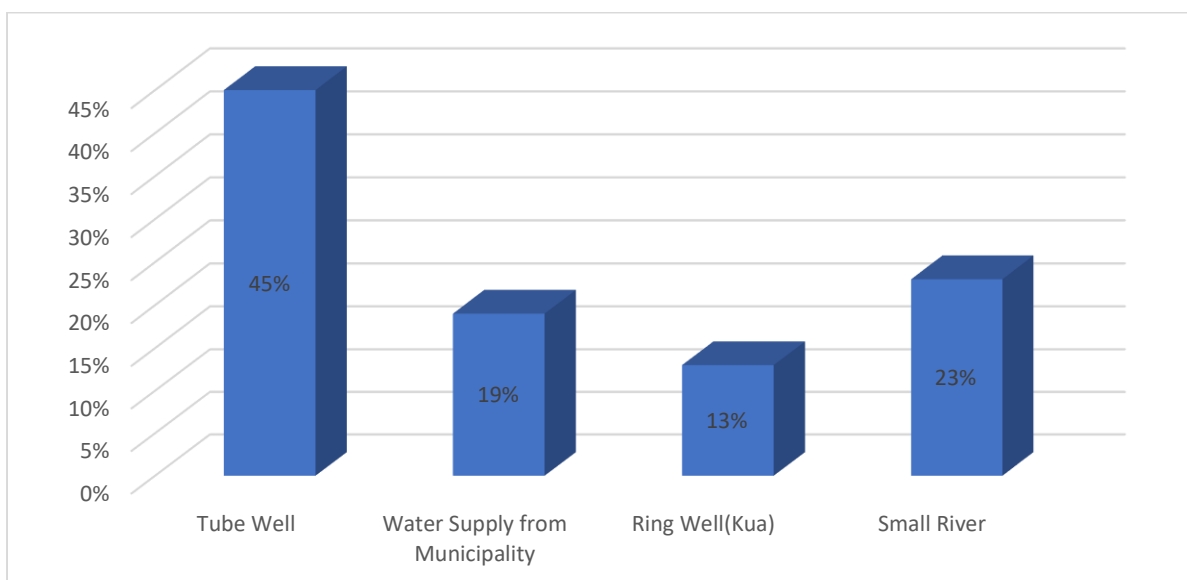
Graph- 5: Types of Washroom of the Respondents (Source: Field Survey,2019-20)

Graph shows the result of types of washroom used by the respondents. From the graph, we have realized that 42% of the respondents have building washroom, which was maximum and only 10% of the respondents have thatched washroom. On the other hand, 26% of the respondents have half walled & tin shed and 19% of the respondents have fence walled & tin shed. On the other hand, 3% of the respondents use other form of toilets which is minimum.



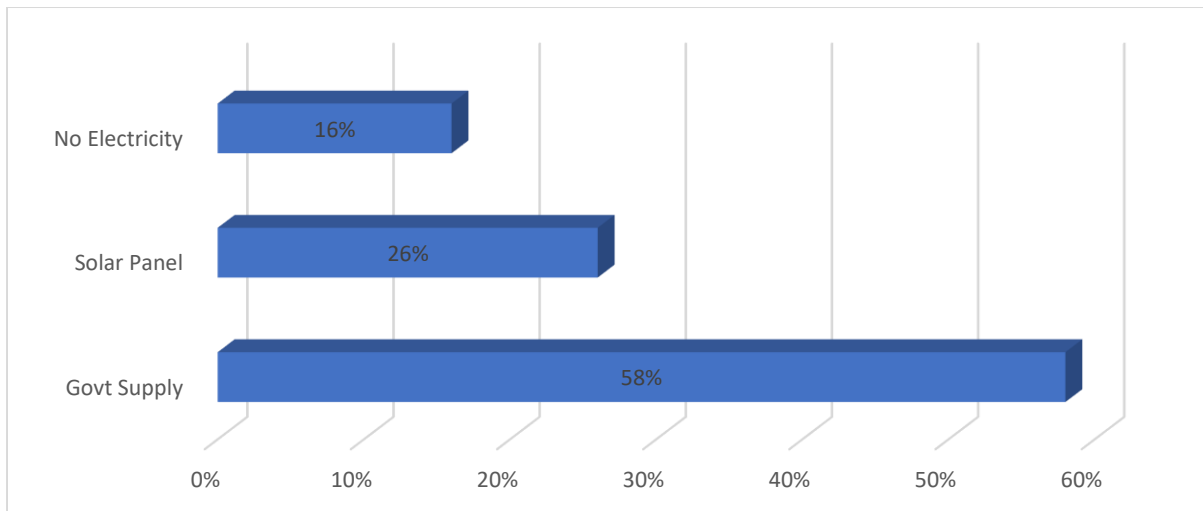
Graph-6: Source of water supply of the respondents (Source: Field Survey, 2019-20)

Above graph shows the information of source of water supply of the respondents. From the pie-chart, it revealed that 42% of the respondents collect water from their personal water pump, while 29% are collected from personal tube well, on the other hand 16% of them use small river (stream/chharha) water for their uses and the rest 13% use others' tube well for their need.



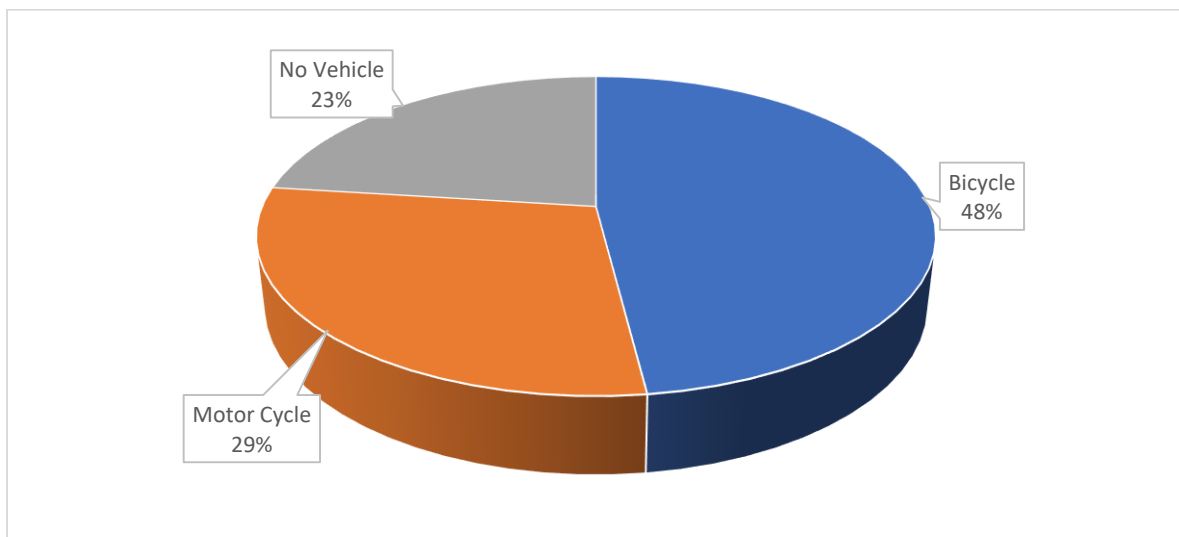
Graph- 7: Source of drinking water of the respondents (Source: Field Survey, 2019-20)

The graph contains information about Sources of drinking water of the respondents. According to the graph, 45% of the respondents have personal water pump, while 19% of the respondents have water supply from municipality. On the other hand, 13% have ring well (Kua) and rest 23% use small river (stream/chharha) water for their drinking water purpose.



Graph-8: Supply of electricity of the respondents (Source: Field Survey, 2019-20)

Above graph shows the data of Supply of electricity of the respondents. After analyzing the data, results revealed that 58% of the respondents use government electricity supply, where only 16% respondents have no electric facility. On the other hand, 26% of the respondent uses solar panels for electric supply.



Graph-9: Vehicle used by the respondents (Source-Field Survey, 2019-20)

Respondents used vehicles are shown in the above pie chart. It shows 23% of the respondents don't have any personal vehicle. While 29% respondents have motor cycle and rest 48% use bicycle as their personal vehicle.

4.2 Result from Instruments-2, Questionnaire survey for TVET Institution Principal and Teachers: Instrument -2, i.e.- questionnaire survey done among the teachers and principals was mixed method approach, where 20 teachers and 4 principals were participated from and outside the catchment area. Although questions were both open and closed ended, but stress was given on open ended question to validate answers from the diploma engineers.

1. In response to the question “what is the impact on livelihood development of the chakma diploma engineers after getting jobs?”

Most of the respondents replied that the standard of livelihood is being improved day by day (3 respondents).

2. In response to the question “whether the technical education is quite helpful for livelihood development of the chakma diploma engineers or not.”

Most of the respondents answered that it is quite helpful in livelihood development of the chakma diploma engineers.

3. In response to the question, “what is the contribution of the chakma diploma engineers in their society after getting jobs?”

Answers were as follows:

(a) Satisfactory.

(b) Self, family and community status has been changing day by day.

(c) Social status is enhanced. They are followed by many others. Students are encouraged to read in diploma in engineering.

(d) Somebody not answered this question.

4. In response to the question, “Is there any significant role of the chakma diploma engineers in various development activities in their locality?”

Answers were as follows:

(a) They are engaged in setting up solar panel after joining in various private organizations (NGO). They are engaged in various development activities, such as – pure water supply, development of sanitation system, communication and mechanization in cultivation etc.

(b) “So far as I know they are involved in various development activities in their locality” (1=1 respondent).

(c) Most of the respondents simply answered ‘yes’ whether somebody not answered at all.

5. In response to the question “Is there any social recognition of the chakma diploma engineers in their society?”

Answers **were** received as follows:

(a) Social recognition has been increased as compared to earlier because of socio economic development by the diploma engineers.

(b) Most of the respondents merely answered as ‘yes’ whether somebody not answered at all.

6. In response to the question “Do you find any significant change in their society through TVET knowledge of chakma diploma engineers?”

Answers **were** received as follows:

(a) Self-employment has been increased. In addition, there is an initiative to set up technical training centres in their locality.

(b) “Yes. There is a change in their views and attitude. It seems to be there is some initiatives to set up private technical centres in their locality”.

(c) Rest most of the answers are simply ‘yes’.

4.3 Result from Instruments-3 (Interview schedule for Key Informants):

12(twelve) knowledgeable and expert persons on Chakma affairs were chosen purposively as key informants. Then face to face interviews were taken with the key informants with a prepared interview schedule as guideline, but interviews were done spontaneously in a lively and congenial atmosphere. In addition, some written interviews were taken through e-mail due to Covid-19 lockdown barrier. Above-all, the interviews were taken successfully with fruitful discussions alongwith valuable suggestions and guidelines, which are proved assets of the research work.

In response to question No.1 what is your idea regarding livelihood pattern of chakma people in Khagrachari district?

Answers received from the experts on Chakma affairs (Key Informants) are as follows:

1. (a) Firstly, it seems to be livelihood pattern of Chakma people in Khagrachari district as dependent on agriculture. Because the agricultural land of Khagrachari was less affected by the water submerged in the Kaptai lake project. But presently there is a tendency of agro food farming and livestock rearing among the chakma community of Khagrachari district.

(b) Very few people are engaged in business activity. Because it needs huge capital, which is not available in chakma community.

(c) Very few people are engaged in engineering service, because there is lack of infrastructure for service. Because there is no industry either small or big in its kind where chakma youths will be employed themselves.

(d) Sustainable livelihood depends upon regular sustainable income generation either less or more.

(e) There are some infrastructures available on behalf of Bangladesh Small and Cottage Industries Corporation (BSCIC) in Khagrachari district. It seems to be people did not understand small cottage industry methodologically or systematically. If there is understanding of cottage industry, but they have not enough experience regarding cottage industry. They did not come forward either lack of industrial counselling or lack of experience. In addition to that there is lack of capital among the chakma community. So, there is no alternative to business or technical experience.

2. Chakma community depend on Agriculture or shifting cultivation (Jhum) for their livelihood. But some people live on service or business.

3. The livelihood pattern of chakma community is under developed and back dated.

4. Firstly service is given as for priority for livelihood. In this case, presently they are interested in technical education.

5. Most of chakmas are farmers. But there are some service holders.

6. They are engaged in mixed economic activities.

7. Livelihood of chakma community are agriculture, service and business (II = 2 respondents' opinion).

8. Livelihood of chakma community is agriculture.

9. The chakma community are inclined into various employment sectors with changing pattern of the society.

10. Livelihood pattern of the chakma community are – public private job, business and agriculture.

4.4 Result from Instruments-4 (Questionnaire for Focus Group Discussants):

In total 3(three) Focus Group Discussions were held in Cox'sBazar, Khagrachari and Chattogram respectively. Participants belong to homogeneous group (almost 95% Chakma), with an exception of various professions. It was done with the view point of having multidimensional views in various angles. Participants include diploma (in service and jobless) educationist, journalist, NGO representative, entrepreneur, women and representative from the civil society.

Various opinions were received from the Focus Group Discussion (FGD), when opinions were asked to know about less participation of chakma students in technical education:

1. Less understanding about technical education on behalf of guardian and students (XI = 11 respondents' opinion).
2. Lack of awareness about facilities relating to technical education (V = 5 respondents' opinion).
3. Most of the respondents believed that social status or recognition of diploma engineers was not established in society (IV)
4. Technical education is treated negatively in society.
5. The curriculum of technical education is more difficult than general education.
6. Less technical institute in Khagrachari district (II).
7. Limited jobs in public sector for diploma engineers.
8. There is a tendency to achieve higher degree in general education (III)
9. Most of the chakma students have been suffering from poverty.
10. Lack of consciousness among the chakma students regarding technical education (III).
11. The chakma students have less knowledge on economics.
12. The chakma students have less understanding about diploma engineering course and future job market.
13. There is a shortage of successful diploma engineers among the chakma community. That's why students are not encouraged to get admitted to technical education.
14. Lack of publicity on technical education among the chakma community (II).
15. There should be some orientation programme on technical education in chakma community.

16. The chakma families are not enough conscious regarding technical education.
17. There is a less understanding regarding technical education among chakma community both in family and society.
18. Lack of social status on technical education.
19. The chakma students have a fascination towards higher education, since social status is higher in general education.
20. Less participation of chakma students in technical education is due to their poor economic condition (X).
21. There is a lack of guideline or direction regarding technical education in chakma community.
22. The well-off chakma families are not interested in technical education.
23. The chakma guardians are not interested in technical education (III).
24. The chakma students are not aware that diploma engineers are eligible to join both technical and non-technical posts.
25. Those who get admitted in technical education are belong to village. They have a weak foundation in mathematics. That's why dropout rate is higher in comparison to Bengali students.
26. The laggings of the chakma students are due to mother language barrier.
27. The distance of technical education is far from their house.
28. Less evaluation of diploma engineers in society.
29. Lack of vision and mission.
30. They lost their interest in technical education when maximum students take general education.
31. The chakma students do not have transparent idea about technical education.
32. They have no clear idea about job market both in home and abroad.
33. They have no idea about how to be an entrepreneur through technical education.
34. Poverty has a vast impact on enrollment in technical education (II).
35. Unwillingness to technical education.
36. Lack of requisite qualification to get admitted to technical education.

Note: The Roman number in bracket indicates the quantity of respondents' opinion.

4.5 Major Findings

From the result it was found that:

The role of TVET institutes in enhancing chakma diploma engineers' employment are:

1. **Job placement rate is high:** Due to technical education, job placement or employment generation has been increasing significantly. In the questionnaire survey held on 32 persons from three locations, namely Khagrachari, Chattagram and Cox's Bazar. We found that 88% of the respondents are service holder. On the other hand, 6% respondents are engaged in business. Rest 9% and 6% respondents are entrepreneur and jobless respectively.

Job placement found is 88%; which is really encouraging. Regarding employment, According to TVET researcher Dr. Md. Abdul Hoque Talukder: "about 67 percent diploma engineering graduates got employment within one year of graduation. About 55 percent vocational graduates got employment within one year of graduation." [Dr. Hoque: TVET Skills for Sustainable Development in Bangladesh.p-10, the Karigar, Dec'2018-Feb'2019.]. Since there is a positive trend in national level, that's why the result found is authentic, no doubt.

2. **Livelihood Development is clearly visible:** The roles of TVET institutes in enhancing chakma diploma engineers' employment is visible to chakma community, which has been encouraging to technical education. Employment after passing diploma in engineering ensures livelihood development of chakma diploma engineers are:

a) **Increased monthly income:** The monthly income of the Chakma diploma engineers has been increasing significantly i.e.- Monthly income of the 29% respondents is within the range of BDT 15,000-20,000, which was maximum. 19% respondents' income is within BDT 10,000-15,000. Another 16% respondents' income range is BDT 25,000-30,000, 13% respondents draw salary within BDT 20,000-25,000 and another 13% draw salary within the range of BDT 30,000-35,000 and rest 10% draw the highest salary within the range of BDT 35,001 and above. This statistics is surely encouraging. It is observed from the field survey and also from KII and FGD. There is a change in life style e.g.- housing and possession of valuable goods etc. which are surely a testimony of their solvency and improvements.

b) **Improved residence:** The condition of residence has been improving. During the field visits, the change in housing is observed. It is supported by available literatures, which is discussed in the section: Discussion. We found that 39% of the respondents live in their own house; besides 48% of the respondents' lives in rental house and rest 13% respondents live in Govt.

rental house. It is observed that 42% of the respondents has buildings, where only 10% respondents live in soil made house. On the other hand, 23% respondents live in the half walled and tin shed houses. Although 10% of the respondents still live in bamboo fenced, walled and tin shed houses.

c) **Improved Sanitation:** Most of the Chakma diploma engineers has been using sanitary latrine. It is also observed during the field visit. It is also supported by the literatures available. We have realized that 42% of the respondents have washroom within building, which is maximum. But, only 10% of the respondents have washroom made of thatch. On the other hand, 26% of the respondents have half walled and tin shed and 19% of the respondents have fence walled and tin shed.

d) **Drinking Safe and Pure Water:** Most of the Chakma diploma engineers are drinking safe water. The change in the society is observed during the field visit and it is also supported by the existing literatures. We found that 42% of the respondents collect water from their personal water pump, while 29% are collecting water from personal tube well. On the other hand, 16% of them use small river (stream/chharha) water and the rest 13% use others' tube well for their need.

e) **Continous Electricity Supply:** We found that 58% of the respondents have government electricity supply, where only 16% respondents have no electric facility. On the other hand, 26% of the respondent use solar panel to meet the electricity demand.

f) **Ensured Schooling of Children:** Their children are going to different types of schools and somebody are going to abroad to carry on study. The change is also observed during the field visit and comments received from KII and FGD in favour of the finding.

g) **Possession of Motor Vehicle:** The result also revealed that most of the Chakma diploma engineers are using their own motor vehicles. It is also observed during the field visit and which is supported by the existing literatures. We found that 29% respondents have motor cycle while 23% of the respondents don't have any personal vehicle and rest 48% have bicycle for their personal use.

However, it can be said that the livelihood pattern of Chakma diploma engineers has been changing due to technical education. The positive improvement is observed during the field visit and it is also supported by the existing literatures

4.6 Lesson Learned:

We have learned the lessons are as follows:

1. Chakma diploma engineers do not feel comfortable to fill up questionnaire in English rather they feel comfortable in Bengali (Bangla).
2. The respondents do not feel comfortable to disclose personal financial affairs. But which are important from the viewpoint of livelihood.
3. Corona pandemic situation is a barrier to proper communication.
4. Information and Communication Technology (ICT) can overcome the barrier of communication during the pandemic.
5. For successful research work, it needs enough time and money.
6. It is a tough job for head of the institution to carry out a research work with overloaded task of an institution.
7. Though research work is tedious, laborious and clumsy job, but honesty, sincerity and dedication can pave the way to success.
8. Passion is more important than talent.
9. Learned how to communicate my ideas effectively.
10. Learned how to find new problems and how to ask the right question.
11. Setting small goals regularly and to celebrate them when dream or vision come true.
12. Most importantly time management is my major learning.

Chapter: Five

Livelihood development of chakma diploma engineers in Khagrachari district:

5.1 Introduction: A livelihood is a means of making a living or a means of securing the necessities of life. For example, most of the chakmas livelihood depend on the rainforest, who live in the remote areas of reserve forest (Naraichari etc.).

According to Robert chambers and Gordon Conway (1991), a livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living.

Livelihood development:

It is designed to help improve the quality of life of marginalized and excluded people. It provides them with access to basic human rights for example: health care, three meals a day, education, clean drinking water and sanitation. Here, in this research work a questionnaire had been drafted for diploma engineers (both in service and jobless) with the viewpoint of enquiring their residence, sanitation, pure drinking water, electricity, motor vehicle, health care, child education, water supply, monthly income and expenditure possession of furniture and electrical appliances and so on.

These are the indicators of their better wellbeing or livelihood development. After processing the data received from the field, graphical representation has been made to measure and show the capability and their achievement after securing job.

Now, a new term 'Sustainable livelihood' is widely used term by the development agencies worldwide. Sustainable livelihood idea was first introduced by the Brand Land Commission on Environment and Development.

In 1992 the United Nations Conference on environment and development expanded the concept, advocating for the achievement of sustainable livelihoods as a broad goal for poverty eradication. Leading proponent of sustainable livelihood Ian scoones of institute of development studies (IDS) proposed and modified the definition of sustainable livelihood as:

A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base.

Livelihood assets: Livelihood assets are categorized into five groups, such as human social natural, physical, financial capital etc.

a) Human Capital: It represents the skills, knowledge, ability to work and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives. At a house hold level, human capital is a factor of the amount and quality of work available; this varies according to house hold size, skill levels, leadership potential, health status etc.

b) Natural Capital: It is the term used for natural resources, such as land, soil, water, forest and fisheries.

c) Financial Capital: It represents financial resources including savings, credit and income from employment, trade and remittances.

d) Physical Capital: It comprises basic infrastructure, such as roads, water and sanitation, schools, ICT and producer goods, including tools, livestock and equipment etc.

e) Social Capital: It represents social resources, including informal networks, members of formalized groups and relationship of trust that facilitate cooperation and economic opportunities.

Here, in this research work our focus is confined on livelihood development of chakma diploma engineers in Khagrachari district through technical education. Since our attention or focus is not poverty alleviation of grass root community like development agencies or NGOs.

So, the whole research work is dedicated only on to assess the impact and outcome of technical and vocational education and training (TVET). The research and knowledge management cell of Directorate of Technical Education has given limited tenure and guideline. So, it is not possible to assess in viewpoint of sustainable livelihood.

5.2 History of chakma livelihood:

Earlier the livelihood of the chakmas was ‘Jhuming’ or Jhum cultivation (slash and burn agriculture). It is to be noted that “about 89% of the land in the CHT is not suitable for agriculture” [Subash Dasgupta, S.P. Gosh and K.G. Pillai (2008): Chittagong Hill Tracts (CHT): Growth Potential in High Value Agriculture, Dhaka, Bangladesh; P-57]. They added that “nearly 26% of these hills is under Reserved Forest (R.F.) and the rest fall under Unclassified State Forest (USF).

The tribal people undertake their agricultural practice 'Jhum' mainly in the so-called USF area." [ibid, p-57].” After taking over the direct administration from the East India Company in 1857, the British Government created a separate district known as 'Chittagong Hill Tracts' in 1860.

The British administration condemned Jhum cultivation as 'primitive' and 'destructive' land use and adopted policies to replace it with sedentary agriculture. Replacing Jhum cultivation by plough cultivation by providing land with inheritable rights and by establishing village along with provision of small advance repayable within 5 years with interest rate of five percent are part of policy shift exercises.

Also, as a punitive measure, a tax was imposed on Jhum cultivation at a flat rate of Rupee four per household. These changes in the policies could not bring any noticeable change in agriculture practice in the CHT and expansion of plough cultivation was very limited" [Ibid, P-57].

Since Jhum cultivation is not a permanent cultivation system, the peasants have to change their 'Jhum land' after 'Jhum cycle'. That's why they have to migrate from one place to another. It was very difficult job for them to learn various professions in such a migratory nature. Lastly after 1812, the historic initiative of Raja Dharom Box Khan had changed the chakma peasants into plain land cultivation, which is turning point for social life and job diversification and overall livelihood development.

13 Hill communities or ethnic communities have been residing in the three hill districts from far ago. Previously the main livelihood means of them was 'Jhum Cultivation' (slash and burn agriculture) or 'Jhuming'. Since 'Jhum' Cultivation is not a permanent cultivation system, that's why it was an impediment to build up a permanent social structure. Jhum cultivation mainly encourage migratory nature. So, absence of essential technical professionals in chakma society is clearly visible.

As for example, there is not a 'single' potter in the chakma society. Before the eighties, the number of carpenters in the chakma society may be counted by hands. It is interesting to note that there is not a single 'Blacksmith' among the chakma community. It is to be noted that the number of the ethnic minorities all over the Bangladesh is nearly 58. If we analyze the chronology of livelihood development of the chakma community, it is seen that the chakmas do not know the 'plough cultivation' technology before nineteenth century.

5.3 Transition from the 'Jhum' Cultivation to plough Cultivation:

After 1812, chakma King Raja Dharom Box Khan in Rangamati brought some 20 families of Muslim peasants from Rajanagar village of Rangunia to train up the chakmas the 'plough cultivation' technology. The chakmas acquired 'plough cultivation' technology after training at a place namely 'Dharmakhil' in Rangamati.

Hence a structure of permanent society based on plain land had been established easily. Which is a milestone for social development and progress of the chakmas. According to F.K. Khan and A.L. Khisa (1970): "Plough cultivation and sedentary agriculture started gaining acceptance among the indigenous people when almost one fourth of land brought under reserved forest and Jhum cultivation was restricted there, thus reducing the availability of land for Jhum cultivation. By 1900, 4433 ha of land came under sedentary agriculture and by 1960 it reached more than 40,000 ha" [Ibid, P-58 and Khan and Khisa,1970].

Earlier the chakmas lived a very idle and lavish life as they possess huge land properties. But the construction of Kaptai dam in early sixties disrupted the rhythm of their sound sleep. They had to realize the hard reality after losing livelihood means of 'plough' cultivation. Because "the Kaptai dam submerged 54,000 acres of plough lands accounted for 40 percent of the entire plough lands of the CHT.

The paddy land lying above the reservoir comprises of only 21,522 acres." [Source: Chakma, Sudhin.Kumar: Changing Pattern of the Chakma Society in the Chittagong Hill Tracts, P-34 & District Gazetteer, 1975:88]. Previously, they were not interested in general education too. So, technical education was a far cry. It was gathered that during the British rule, teachers used to go to the locality to collect students with chocolate type goods [source: A.B. Khisha (1979): Shiksha Dikshay Parbatya Chattagram, P-28].

5.4 Kaptai dam: Breaking sweet sleep of the idle and lavish chakmas:

Though Kaptai dam has a role of bringing livelihood under threat, but it had broken sleep of unconsciousness. It was seen that they became inclined to education after construction of Kaptai dam. They had been inclined to horticulture or agro food farming as livelihood means after losing homestead and land.

After increasing trend of fish cultivation in the artificial lake of Kaptai dam, fishermen community has been evolved, though it is a seasonal business to them. According to Profesor Dr. Manik Lal Dewan: “Inclusion of CHT in Pakistan in 1947 and later construction of Kaptai Dam made unexpected and mentionable benefits (blessing in disguise) to the hill people are as follows:

- a) Created an inspiration and unity among the hill people.
- b) A large artificial lake created which increased fertility of the hills.
- c) Navigation system improved as a result of creating artificial lake, e.g.- earlier it took 3 days journey from Bagaichari to Rangamati, which reduces to only 3 hours journey.
- d) Cultivation of banana and other fruits have been increased in more times tha earlier due to increasing fertility of the hills and improvement of navigation. As a result, income of the farmers increased.
- e) Huge fish have been producing in the artificial lake. That’s why present generation of us have been getting sufficient protein and nutrition in food and which made them meritorious. There is an income source of the hill fishermen.
- f) There is huge forestation in the hills on behalf of the non govt organizations. As a result, there is an improvement of environment and economic development”. [Dr. Manik Lal Dewan (2013): *Ami O Amar Prithibi*, P-198-199].

Refugee life in India, before the peace accord in 1997, they have to realize reality about life. As a result, the neglected and hatred professions like hair dressing (beauty parlor/ gents’ parlor) have been becoming popular among the chakma community. Open access to internet and social media made them gourmand. As a result, restaurant business or catering service has been getting popular among the chakmas.

5.5 Inclination to education as well as to technical education:

In comparison to other communities, the chakmas are more inclined to education. A big portion of the chakmas not less than 1-2% are engaged in teaching profession. So, it can be said that there is a flow (tidal wave) in education after construction of Kaptai dam. Presently the number of ‘Jhum’ cultivators cannot be more than 10%.

Now a days, horticulture is very much popular among the chakmas parallel to ‘plough’ cultivation. According to Dr. Sudhin Kumar Chakma: “Education has brought about change in the agro-economic life of the chakmas and termed them into a serving salaried class. Just as

education has brought about a change in the field of occupation, it has made direct relationship with the changes in the economic sphere of this community.

They come in contact with the outside world due to education, urbanization and forced migration.” [ibid, p-79]. In this connection, CHT expert and ICIMOD researcher Golam Rasul mentioned as: “Nearly 70% of the rural population in the CHT depends on agriculture as a primary or secondary livelihood. There is a need to generate rural jobs in the non farm sector so that livelihoods can be diversified and the dependence on agriculture reduced. Priority needs include provision of skills development and vocational training to promote non farm economic activities.” [Golam Rasul (2015): A Strategic Framework for Sustainable Development in the Chittagong Hill Tracts of Bangladesh, An ICIMOD Publication, Nepal, P-17].

The only Polytechnic Institute in greater Chittagong Hill Tracts of its kind is Bangladesh Sweden Polytechnic Institute, which is located at Kaptai Upazila under Rangamati district. It was established in 1963, immediately after construction of Kaptai dam. Khagrachari Vocational Training Institute was established in 1974, which was a gateway to the technical education in contrast with the general education.

Electricians after passing from vocational training institutes added a new dimension in the chakma society after joining in the PDB. The first chakma diploma engineer or technical professional of chakma society is venerable Pulin Chandra Dewan, who is known as ‘Engineer Saheb’. His birth place is in Khagrachari and later he settled in Rangamati.

Then many enlightened men came in technical arena. The first chakma diploma engineer among the woman is Lovely chakma. Her birth place is at Dighinala Upazila under Khagrachari district. Presently she has been serving at the PDB in Rangamati.

5.6 Infra-structures Development and Livelihood Development

The scenario of Khagrachari and greater CHT has been changed dramatically through construction of huge roads and bridges all over the CHT after the historical peace treaty in 2nd December, 1997. The popular English daily ‘The Daily Star’ wrote in 22nd May, 2011 as: “Road communication has become easier in Chittagong Hill Tracts (CHT), as the majority of the Tk 105 crore-infrastructure development project to construct about 100 kilometre (km) of roads with small bridges and culverts is now complete.

The daily added as: “Local Government Engineering Department (LGED) is implementing the project in the three hill districts of Khagrachhari, Bandarban and Rangamati, to be complete by next year. While visiting different areas in Matiranga and Panchhari upazilas of Khagrachhari district and sadar upazila of Rangamati district, people of the hill districts, especially in remote areas, were seen to be able to communicate with the mainland and also market with their produce easily.

Talking to this correspondent, local people said earlier they led a miserable life for lack of road communication in absence of development activities in the hill districts under the previous governments. They said formerly people of the region had to walk a long distance to go to the markets located at inaccessible areas, often with agricultural products which were damaged on the way.

In Khagrachhari, several thousand tribal people came under the communication network with the construction of a 13 km road from Matiranga Sadar to Gomoti Union. Champalika Tripura, 35, a tribal school teacher of Gomoti village, said people earlier had to walk to the upazila sadar, 20 km from her village. But now, they can go there by transport within 15 to 20 minutes as the distance came down to 13 km. “Local people can take their fruits, vegetables and other agricultural crops by transport to the market in the upazila headquarters. They now get better prices and there is less damage,” she said.

Now the children of the hill areas can go to schools far away using transport which was not possible earlier, Tripura added. Previously unemployed youths now earn Tk 700 to Tk 800 daily by carrying people and goods on motorcycles from one place to another.

LGED Engineer Anwarul Haque of Matiranga upazila said the construction of the new road in his upazila started in November 2009 and was completed in January this year. Sub-Assistant Engineer Rashedul Ahsan of Panchhari upazila said a large number of tourists now visit the biggest Buddhist temple at Shantipur Aranyakutir daily following the construction of the new road.

In Rangamati, construction of the 18.36 km road from Asambasti to Baradom now makes it easy for people to travel and transport various goods, particularly fish caught from the Kaptai Lake to Rangamati sadar or elsewhere. LGED Executive Engineer Sohrab Ali of Rangamati

district said road construction in remote areas brought a huge change in the lifestyle of the hill people as they derive substantial economic benefit by utilising the road. Chirajoti Chakma, 45, resident of Golachhari village in Rangmati, said people are getting benefit in many ways with the construction of new roads in the area”.

Mr. Syed Md. Haider Ali et. al. (2011) prepared an “Evaluation Study of the Chittagong Hill Tracts Road Development Project” mentioned the changes as: the project has been one of the most important achievements for the people of the 3 Hill Districts of the Chittagong Hill Tracts, Rangamati, Bandarban and Khagrachari. The opportunities have initiated a tremendous impact on the rural people of the region, creating a massive development of the socio-economic situation, especially through infra-structure development of the area, training and micro-finance programmes.

Based on 111 Unions, of the 3 Hill Districts of CHT, the project has initiated miraculous changes amongst the poor rural population, majority of whom lived from hand to mouth. They were mostly landless and worked as labourers. Life was not only risky, but also uncertain. There were no employment opportunities, few income generating activities and above all a very backward area prevailed for the people without proper communication systems.

It was heartening to see during the impact evaluation visits, the smiles of attainment as people walked through the newly constructed roads and above all the bridges between the hills which created enormous socio-economic opportunities for these recently developed areas. The micro-credit loans, the infra-structure development and the community development programmes had changed the lives of the people, who had waited for ages to witness development of these regions.

Farmers today found customers near their fields eagerly waiting to buy their agricultural products, while many utilized the transports available to carry their products to the market. The days were over, when they used to walk for miles, trudging along the roads, carrying their products on their heads on their way to markets. Owners of mango groves, orange and leche orchards, pineapple plantations, cashew-nut gardens did not worry anymore about taking their fruits to the market in time as customers flocked in to buy their products right from their door-steps.

Parents didn't worry anymore about their children being drowned in the Kaptai Lake on their way to school as the bridges constructed had made life more secured. Tourists thronged from hills to hills in their automobiles, happily driving through newly constructed hilly roads, enjoying with excitement the magnificent scenery of the Chittagong Hill Tracts. Women empowerment increased as they found jobs and employment both in the socio-economic opportunities of business, service and agriculture, enjoying with pride their earnings and their economic contributions to their families.

To-day, these poor men and women, including both the Tribals and the Bengali population, had a vision ahead, a security and an opportunity. They had learnt to progress and dream of a prosperous future. This was the change: the socio-economic and cultural change, brought in through the greatest opportunities provided through the economic and infra-structure development of the Chittagong Hill Tracts Rural Development Project. Many development agencies like ADB done infrastructure development work. ADB Completion Report on 'Bangladesh: Chittagong Hill Tracts Rural Development Project' (2010) mentioned that the project covered all three districts of the Chittagong Hill Tracts (CHT) region of Bangladesh—Khagrachhari, Rangamati, and Bandarban. Its primary objective was to reduce the incidence of absolute poverty among the rural population by developing basic physical infrastructure and expanding income and employment opportunities that would substantially raise the standard of living of landless and marginal farmers. The report added that the key emphasis was on developing the countryside and helping to rectify the highly skewed income distribution by providing rural roads, small irrigation systems, and crop production and agro-business credit and microfinance facilities.

Now, it is evident that there is a huge infra-structure development done after the peace accord in 2nd Decenber,1997. So, peace accord also pave the way to the livelihood development of the Chakma diploma engineers.

5.7 TVET is the master key to chakma diploma engineers' livelihood development as well as to combat with development challenges:

Presently chakma students have been studying in various Polytechnics e.g.- Dhaka, Chattogram, Kaptai, Cox's Bazar etc. But apparently it seems that the trend in admission to Polytechnic Institute has been decreasing in the recent times. It is an alarming news of technical education for chakma society.

Students from CHT are not found in the Sylhet Polytechnic Institute as earlier, it is gathered after conversation with Chief Instructor (Automobile) Engr. Iqbal Hossain. That means technical education is unable to attract chakma students. What is the reason behind it? Will the livelihood development of chakmas be done if they inclined to general education excluding hard technical education? Answer may be 'no'. Because the government has given highest importance on technical education.

Md. Shahadat Hossain Khan, Mahbub Hasan and K.M. Md. Golam Rabbani (2017) conducted a research work namely "Current Trends and Issues in TVET of Bangladesh". They explained as: "As a developing country, Bangladesh is also running towards the global trends to incorporate technology in each and every field with a slogan of 'Digital Bangladesh'.

As the population is relatively high within its small, limited lands, government is trying to convert this vast number of population into useful workforce through TVET initiative." They added that "many studies reported that "development of vocational skills" and "promotion of lifelong learning" are recognized as core national strategy in many advanced countries such as Australia, Canada, Japan and United States (Agbola & Lambert, 2010; Coles & Leney, 2009; Drage, 2009; McGrath, 2012).

Additionally, other countries such as Finland, Korea, Taiwan and Singapore strengthened their comparative progress and gained the competitive position in global market through adapting selected strategies in this TVET sectors (Hawley & Paek, 2005; Kuruvilla, Erickson, & Hwang, 2002). On the other side, most of the developing countries still could not finalize the specific strategies and action plan like the developed countries.

However, government and other non-government agencies of developing countries realized lately that TVET is an important area through which huge population could be turned into skilled manpower and hence they can contribute in the economic development. Anderson (2009) supports these arguments and claims that TVET is built on two key purposes:

1. Training which leads to productivity, which in turn leads to economic growth (training for growth);
2. Skills development which leads to employability, which in turn leads to jobs (skills for work). Previous studies also showed that the integration of education, skills and work in Asia and Africa has been considered as a priority- based action for human resource development

through TVET which is given much more attention for their social and economic development (Aring, 2015; Boutin, Chinien, Moratis, & van Baalen, 2009). After realizing the potential strength of TVET sectors, continual efforts are made to improve the present conditions of TVET sectors.

Many of these countries have already developed policies and strategies related to TVET and undertook great initiatives to improve quality of TVET sectors to meet the present challenges.” [Khan, Md. Shahadat Hossain, Mahbub Hasan and K.M. Md. Golam Rabbani (2017): Current Trends and Issues in TVET of Bangladesh, P-5].

Firstly, we have to give stress on human resource development to combat with the development challenges of the chakma diploma engineers in Khagrachari, as well as for the greater Chittagong Hill Tracts.

More and more chakma students as well as all ethnic minorities should be educated with technical education if we want to develop human resources. Ex director (curriculum) Md. Matiur Rahman (2005) has given emphasis on technical education as: “Human resource is the greatest resource of a nation. Development in all spheres depend on the human resource. Technical education is playing an important role for human resource development.” [BTEB Souvenir, p-27].

Eminent Professor and ex-Governor of Bangladesh Bank, Dr. Atiur Rahman also precisely mentioned about the relvance of TVET as: (a) TVET needed to ensure maximum benefit from youthful population structure; (b) More jobs will be created in the urban sectors as TVET needed to prepare the labour force to cope with rising urbanization; (c) More women now are willing to participate in the work force. TVET is the key to create the needed opportunities for them; (d) Formalization of the informal sector is a must. But lack of skills is the challenge. TVET needed to address this. [Rahman, Dr. Atiur. (2017). TVET and Socio-Economic Development in Bangladesh: Steps, Challenges and Ways Forward, p-10].

According to TVET researcher Gazi Mahabubul Alam (2008): “The World Bank also noted that Bangladesh has no more alternatives in order to gain development, except properly utilizing its population. The World Bank (2002), United Nations Development Programme (UNDP) (1999), United Nations Educational, Scientific and Cultural Organization (UNESCO) (2000) all suggest that Bangladesh urgently needs to utilize its over-crowded population and

large labor market. To improve the quality of employees, Bangladesh's people need to be trained in modern professional-based and job oriented technical, technological and vocational programs." [The role of technical and vocational education in the national development of Bangladesh, p-25].

Actually, technical education is the master key to livelihood development of the chakma diploma engineers in Khagrachari district. Ex PD, STEP Project Md. Emran (2015) explained the purpose and role of TVET as: "(a) to encounter skill gap, (b) development of human capital, (c) unlocking of potential demographic dividend, (d) reduce disparity and in equality e.g.- man-women, rich-poor; urban-rural and (e) boost national economic growth e.g.- employment, remittance, PCY". [Md. Emran: TVET for employment and sustainable development, p-7].

Md. Emran described the interdependency of sustainable development and TVET as: "Sustainable development and TVET inter-dependent and TVET has high impact on country's productivity and growth. Empirically skill development and training are proved as key to success for economic development. Both men and women, it equipped with market responsive skills, can make significant contribution to their own well-being and country's economy.

Government, private, international organization and development partners need to strengthen inter relationship for under taking appropriate strategy for accelerating the development of TVET in order to reach Bangladesh, middle income country by 2021, and developed country by 2041." [ibid, p-7].

Eminent Professor Dr. Atiur Rahman concludes his paper by his wonderful remarks on TVET as: "TVET can provide us with the opportunity of killing 'two birds with one stone' (a) It will make our youths ready for the changing job market; (b) It will ensure a stream of potential workforce for our growing industrial sector." [Ibid, P-16].

It needs a group of technically literate and trained professionals to develop undulated vallies of Khagrachari as well as in greater CHT to build developed and modern road networks. It is very urgent need to supply pure drinking water and to construct modern sanitation systems. It needs a group of literate and expert agriculturists for practising modern technology to the undulated hilly areas of Khagrachari as well as in grater CHT.

It is gathered that the government will establish a Polytechnic and an Engineering College (M.A. Hannan Engineering College) in Khagrachari in near future. It is hoped that a modern and sustainable society will build up in future through literate and skilled technical professionals of Khagrachari as well as in greater CHT.

5.8 SWOT Analysis of Khagrachari District:

(a) Strength of Khagrachari:

1. It has an area of 2749.16 sq. km. It has 9 (nine) Upazillas.
2. Total population of Khagrachari district is 5,18,463, where Chakma population is 1,61,960.
3. It has 1702 villages, 35 local markets, 296.36 km metalled (pucca) road and 261 km semi metalled (pucca) road. It has 3 rivers, namely Chengi, Mainy and Feni.
4. It has 3(Three) TVET institutions: TSC (01), TTC (01), Textile Vocational (01).
5. It has one tea garden in Ramgarh.
6. It's area of forest is 1,42,967hector. It's rubber plantation area is 3200 hector.
7. It has around 12/13 tourist spots for recreation.

(b) Weakness or livelihood development challenges of Khagrachari:

1. Lack of skills or expertise to access to jobs in the competitive market.
2. Lack of employment opportunity at local area, because there is no industrial infrastructure both public and private (medium/ large) to provide employment.
3. Low diversification and high dependency on agriculture.
4. High poverty and low human development. CHT is one of Bangladesh's pockets of poverty.
5. Poor road communication network due to hilly area.
6. Supply of pure drinking water and shortage of water in dry season.
7. Poor sanitation system in the remote areas.
8. Lack of food security (especially June to August).
9. Lack of health and nutrition facility (especially for the child).
10. High transportation cost due to poor road communication network.
11. Lack of cultivable plain land. "about 89% of the land in the CHT is not suitable for agriculture" [Subash Dasgupta, S.P. Gosh and K.G. Pillai (2008): Chittagong Hill Tracts (CHT): Growth Potential in High Value Agriculture, Dhaka, Bangladesh; P-57].
12. Some people depend only upon natural resources, such as- bamboo, wood, forest goods, e.g. – wild broom, green bamboo shoots (bansh korul) etc, which is not viable in the changing trends of Khagrachari.
13. The Chakmas as well as other small ethnic communities do not have single blacksmith, jewellery technician, rod binder, plumber etc.
14. The Chakmas do not possess business skill as well as life skill to carry on business smoothly. Because, there is an uncertainty and fluctuation, So, the Chakmas can not withstand against sudden business shock.

(c) Opportunities of Khagrachari district:

1. Hill slopes of Khagrachari is suitable for growing fruits like banana, pineapple, papaya, jackfruit, guava and lemons etc.
2. Khagrachari may be ideal place for growing medicinal and aromatic plants.
3. Khagrachari has a goodwill for quality tamarind production.
4. Since there is abundance in fruits, so fruit processing plant has a bright prospect in Khagrachari.
5. Tourism may be an income source for the inhabitants of Khagrachari.
6. Handicraft based on local wood and bamboo may be a source of income.
7. Furniture industry has a bright prospect in Khagrachari.
8. Garment industry or any other manufacturing industry may be a future promising sector to engage the youths in productive activity.
9. Local woolen shawls made by the women of small ethnic communities should be patronized for the sake of livelihood and its expansion.
10. Cold storage may be established to preserve huge fruits produced in Khagrachari.
11. Bamboo and wood - based paper mills may be established for employment of the youths.
12. Lakeification in the vallies (low land between the hills) may be done by making dam between the vallies in the rainy season to encounter shortage of water during dry season as a reservoir and also for fish cultivation as well as aquaculture.
13. Diploma engineers can set up consulting firm on building design and implementation (supervision and monitoring) in the fast developing town like Khagrachari.
14. Diploma engineers can set up modern workshop for vehicle maintenance.

(d) Threats of Khagrachari district:

1. Deforestation combined with unsuitable agricultural practices: soil erosion, loss of nutrients and biodiversity. Mono-culture: teak / Acacia/ rubber gardening, which are harmful to other plants and partially responsible for water crisis in the CHT.
2. Till now, political and social instability has been prevailing in the hills, which has a great impact on development. Mistrust, rivalry and collision among different ethnic communities, especially Bengalis and Paharis which has created social instability and is affecting the environment for development work.
3. There is an allegation of extortion against the four regional political parties, which is an impediment to business, entrepreneurship and also for the survival of mass people.
4. Rapid expansion of tobacco cultivation is also causing environmental hazards.

5. Restriction on subsistence agriculture (Jhum Cultivation) or identification of best alternatives to Jhum cultivation and its socio-economic impact on food security in CHT.
6. Substance abuse (drug/alcohol) or addiction leading to be exploited by others. The hillmen borrow from the traders and in the long run they loss their valuable lands.
7. Occurrence of landslide during the rainy season.
8. Sudden attack by the wild elephant herd in the remote villages.

5.9 Capability analysis of the chakma community to meet the basic needs as well as livelihood development:

1. **Food security (fooding):** Presently the production of ‘Jhum’ is not enough even though their primitive profession is the ‘Jhuming’. In addition, ‘Jhum’ is not any reliable agriculture method too. According to Tapan Kumar Nath et. al. (2011) “Despite the trend of dwindling productivity, tribal people of the Chittagong Hill Tracts (CHT) still practice shifting cultivation as a dominant hill farming system to support their livelihood”. [source: Nath, T. K. et. al. (2011) Shifting Cultivation (Jhum) in the Chittagong Hill Tracts, Bangladesh: Examining its Sustainability, Rural Livelihood and Policy Implications]

On the contrary, the hills of the Khagrachari as well as in CHT are not suitable for plough cultivation except ‘Jhuming’. But using modern agricultural practices, agro food farming by terrace cultivation, forestation, rubber gardening, herbal medicine gardening etc. may be done.

The gardening may be undertaken in the undulating hills. Stress should be given to plough cultivation parallel to agro food farming. According to Mr. Sugata Chakma:

- (i) Still jhum cultivation is done in limited sphere in some remote areas in Khagrachari district. But paddy or other crops are not produced as earlier. It is done as partial income of livelihood. Hill paddy, sesame, maize, gourd etc are being cultivated in Jhum,
- (ii) Some chakmas cultivate ginger and turmeric as lucrative crop,
- (iii) Presently chakmas done gardening (horticulture) in hilly areas. Now a days, their orchard gardening of mango, jackfruit, lychee, pine apple, plum, orange etc. has been increasing gradually. Income, generation is happening from these initiatives.
- (iv) Tik gardening has been increasing in extended hilly areas of them, though tik gardening spoils fertility of land. On the other hand, rubber gardening still has been increasing in spite of sudden fall in price of rubber than earlier. Needless to say, the farmers of rubber cultivation are

in a crisis due to sudden fall in price.” [Chakma, Sugata. (2019). Khagrachari Parbattya Zillar Chakmader Artho Samajik Obostha (Socio-economic condition of the Chakma People in Khagrachari district. p-108-109].

2. **Textile (weaving industry):** One day, the chakma women were self-reliant in making their clothes. Presently they are not only dependent on sari, selowar and kamij on Bengali loom craftsman, but also dependent on own traditional, Pinon & Khadi. After liberation, Mrs. Manjulika Chakma of Rangamati made a revolution in textile industry through introducing her industry ‘Bain Textile’. Presently it seems to be a sick industry as her heirs are not capable of handling the industry as earlier.

Now, the chakmas are not self-reliant in textile industry. Mr. Sugata Chakma wrote as: Some Chakma villager women used to weave attractive traditional clothes for sale. The traditional Chakma women Pinon-Khadi, woolen clothes or heavy shawl and light shawl clothes are available to them. There is more demand of traditional clothes and special woolen shawl clothes.” [Ibid, p-124-125].

3. **Education:** Participation and interest into education among the chakma community is promising. Apparent advancement in general education is visible. But they are much backward in quality perspective. There are some allegations regarding getting jobs in education. There is an allegation of ‘sublease’ (Borga) system for the teachers (Primary/ High School) in the remote areas, which is an impediment to quality education.

If there is no quality education how the students will be qualified engineer, doctor and administrator etc. which is not helpful for livelihood development of chakma community. Mr. Sugata Chakma mentioned as: “The advancement of chakmas in education has been continued. A college in chengi mouza and another college at Babuchara in Diginala mouza have been established in the meantime, where the chakma people have been extended co-operation with enthusiasm.

It is mentionable that there are 72 teachers have been teaching in 9(nine) colleges in Khagrachari district. Among them, some chakma women have also been teaching. Many male and female teachers have been serving at primary, junior high and high schools. The medium of education is both in Bengali and English. But in last some decades various NGO (save the children, BRAC etc.) have been teaching at preprimary school in Bengali, English and also in chakma language.” [Ibid, p- 109].

4. Health and Treatment: Presently there are doctors passed out from the various medical colleges in chakma community. But per capita doctor is not sufficient till now. There is a shortage of medical technician, nurse and Bio medical engineer in chakma society. Still nursing profession is not a prestigious profession among the chakma community. Although some chakma girls have come forward to serve in nursing profession, which is really praiseworthy.

The rate of mortality of child and mother among the chakma community is not less at all. Trained midwife and nurse is essential in chakma locality. Queen Yen Yen depicted the situation as: “The quantity of nurse and midwife is quite insufficient both in hills and plains. Recently honourable prime minister has declared of creating more ten thousand posts of nurses and recruiting nurse.

Now the demand of nurses and paramedics has been increasing with increasing trend of private hospitals and clinics”. [Queen Yen, Yen. (2017). Shaharmukhi Adivasider Aurthonitik Obosthar Prekshapate Karigori Shikshar Prasangigota. Kurum, p-42]. On the contrary, Mr. Sugata Chakma described the situation from his research work, which is really a ray of light at the end of the tunnel or clouded sky with a silver lining.

He wrote: “In total 30 chakma doctors (MBBS/ Dental Surgeon/ Dentist) were found during the research work in Khagrachari. 14 (fourteen) doctors were found in duty, during the research period; among civil surgeon office, of the health and family planning office (sadar), health and family planning centre, upazilla health complex, union health centre, health and family welfare centre etc. Among them 7(seven) male and 7(seven) female doctors.

So, the ratio of male and female doctors is 1:1. There are female doctors having degree in gynecology. As a result, an opportunity has been created for treatment of women and children. More 16 doctors were found during the research period, among them 3(three) are female doctors. So, the ratio of male and female doctors is 30:10 or 15:5. There are some homeo doctors among the chakma community in Khagrachari.” [Ibid, p-110].

5. Residence: Thatched houses are not visible in Khagrachari as well in grater CHT like other places of Bangladesh. Which indicates development in ‘Housing’. Now, buildings, half walled tin shed buildings are available in each village. Which indicates improvement of their economic solvency and livelihood development.

Mr. Sugata Chakma mentioned as: “Now, chakma traditional houses namely ‘Mozaghor’ or ‘Machang ghor’ are only visible in inaccessible and remote hilly forests. The reason behind it that the materials (bamboo, tree, thatch and other materials) are only available in the forest. It becomes very expensive if it is available outside the forest.

The informations’ gathered during the field work that the chakmas living in town have given emphasis on building or pucca houses. They have secured water from their tube well in district and upazila sadar.

Most of them have hygienic latrine. Now, chakmas are very conscious about water and sanitation system. Half walled/ tinshed houses/ soil made houses have made in mentionable quantity in some villages of them in the meantime. Brick soling road, electric line has been established in somewhere in the mean time.” [Ibid, p-112].

6. Pure drinking water: The other name of water is ‘life’. So, pure drinking water and modern livelihood are supplementary to each other. Presently many houses among the chakma community have water filter or boiled water system. Which is also indicates livelihood development of them. Mr. Sugata Chakma mentioned as: “There are tubewells in district and Upazilla headquarter for drinking safe water. Most of them have hygienic latrine. Now, chakmas are very conscious about water and sanitation system.” [Ibid, p- 112].

7. Sanitation System: Today modern sanitation system is a testimony of modern outlook and livelihood development. Modern toilet is a symbol of refinement and aristocracy. Presently there are soaps at sanitary toilet and washroom in most of the chakma houses. Minimum standard sanitary toilets are visible at social and religious gathering in chakma community. Which indicates livelihood development of the chakma community. Mr. Sugata Chakma wrote: “Most of them have hygienic latrine.” [Ibid, p-112].

5.10 An analysis on participation of some very important vocational professions among the chakma community:

Till now, we do not find sufficient TVET professionals in Chakma society. Due to lack of social status, they are unwilling to join to those professions, which are really essential in a society. One of the root cause behind the scensrio is due to Jhumming, they had a migratory nature in their blood.

That's why they are backward in some essential vocational skills, such as- Masonry, Plumbing, Rod Binding, Welding, Electrical works, Tailoring, Driving and Vehicle Mechanic etc. Here, I furnished below the situation of Chakma youths in essential vocational professions.

1. **Mason:** Still there is not sufficient expert and experienced mason in chakma society. Till now there are few masons, which is infinitesimal in respect to their population. More masons have to be trained without treating it not a prestigious job. Queen Yen Yen wrote: "There is no plumber, mason and jewelry technician in Rangamati sadar or Upazilla headquarters among the indigenous community." [Ibid, p-41]. She added that there is also a demand for mason, mechanic and electrician within the Adivasi Community.

2. **Plumber (Pipe mechanic):** There is no one visible in chakma community, though it is no doubt very essential profession in a society. So, jobless chakma youths should be encouraged to this profession.

3. **Rod binder:** There is also no one among chakma community in such profession. There is a huge demand of this profession, since Real Estate or Housing Business has been increasing significantly. So, chakma youths should be encouraged for their employment.

4. **Welder:** There is almost zero participation in this essential profession among the chakma community. Though it is not a prestigious job till now, but earnings from it is not negligible at all. So, chakma youths should come forward by avoiding negative attitude to it.

5. **Electrician:** There are some electricians among the chakma community. But it cannot be claimed as they are competent enough both in quality and quantity. So, many youths should be attracted to this essential profession. There is a continuous demand of this profession both at home and abroad. Queen Yen Yen mentioned as: "There are electricians and mechanics, but the quantity is not sufficient." [Ibid, p-41].

6. **Tailoring and Dress Making:** There is no confusion or hesitation regarding the competency and sincerity of chakma women in comparison with male counterpart. But half of the population do not know tailoring or dress making. If they get proper training and facility, it is no doubt they can easily eradicate their economic insolvency.

Because, there is continuous demand of quality garment goods both at home and abroad. Queen Yen Yen described the situation as: “Presently there were many Adivasi male and female employees has been working in Chittagong, Dhaka EPZ. But except some persons, all are working as garment workers in lower posts. If they had institutional qualifications in various technical jobs, they would earn higher salary with higher posts”. [Ibid, p- 42].

7. Driving and Motor Vehicle Mechanic: Since driving is an adventurous job, that’s why chakma youths have been inclined to it. This is a good sign, no doubt. But there is no motor vehicle mechanic visible at all. But the chakmas are very attentive and expert in mechanical work, it can be said with stress. So, chakma youths should be encouraged in both driving and motor mechanic profession.

Mr. Sugata Chakma described the situation as: “Recently educated chakma youths engaged in driving CNG auto rickshaw, i.e.- taken as a profession. Other businessmen include wood business man, stationery shop keeper, various delicious fruits and vegetable vendor, traditional dress, traditional cake seller etc.” [Ibid, p-111].

8. Miscellaneous: There are still many professions remained to train up and make the youth self-reliant, these are as follows:

(i) Male youth: Electrical house wiring, motor cycle mechanic, refrigeration and air conditioning technician, electronic and mobile phone servicing technician, tiles fitting, poultry rearing, handicrafts (bamboo and cane), candle making, dry fish processing and packaging, hand loom, housekeeping and laundry, food and beverage production, food beverage service, computer and ICT skills etc. may be the profession of the male youths.

(ii) Female youth: Beauty care, cap making, candle making, poultry rearing, handicrafts, (bamboo and cane), block, boutique and screen printing, embroidery, computer and ICT skills, restaurant and catering service etc. may be the profession of the female youths.

5.11 Financial capability of the chakma community:

There are very few people among chakma community are rich. Previously the Mohajans in the villages were treated as rich men in the society. The chakmas are mainly fun-loving, jolly minded and short sighted by nature, which was nicely depicted by the Pierce Bessaingnet in his book, “Tribesmen of the Chittagong Hill Tracts”.

They believe in present based thinking. They feel comfort to arrange a party, where they drink local and foreign liquors as well; if there is a savings of money. If we analyze deeply the matter, then it can be surely said that huge amount of money has been spending against the local and foreign liquor. The amount may be not less than a few- crore in a year.

Renowned-sociologist Pierce Bessaingnet mentioned that: they publicly drink wine made by own and smoke with Hookah (bamboo made special smoking instrument) or pipe. There is a public saying on their hospitality. Though it is beyond their independent conscience that to work lower jobs of others, but they do not hesitate to work hard for their own interest. They are simple, honest and truthful, but they are short sighted by nature.

Since there is no savings tendency, that's why rich men are not available in the chakma locality. So, the chakmas should come forward to become far sighted and more inclined to future bound thinking. Researcher Shamima Chowdhury also mentioned many problems of the hills, but she pointed out one of them is increase in the use of narcotics. [Chowdhury, Shamima (2001, September): Chittagong Hill Tracts and Environment. Chittagong Hill Tracts State of Environment, p-85].

Chapter-Six

Discussion of Results, Implications and Conclusion

6.1 Introduction

If we go through the major findings and validate with the existing literatures, we found that the issue of increasing job placement and employment generation due to technical education is found in various research works, i.e.- Mr. Sugata Chakma(2019), in his research work mentioned that the Chakma youths have absorbed in public, private organization. In addition, they are engaged in various jobs in industrial zones, like-Chattagram, Savar, Dhaka and Cumilla.[Khagrachari Parbatya Zillar Chakmader Artho-Samajik Obostha, p-109, 111,119].

Md. Matiur Rahman (2005) explained the trends of technical education in Bangladesh as: “Human resource is the greatest resource of a nation. Development in all spheres depend on the human resource. Technical education is playing an important role for human resource development. For this end in view, many national and international agencies are working in Bangladesh. Bangladesh Technical Education Board has a role for setting quality standard, quality control and development of technical education in this country.” [Trends in technical education in Bangladesh, p-27]

1.The roles of TVET institutes in enhancing chakma diploma engineers’ employment is visible to chakma community, which has been encouraging to technical education: Through conducting Key Informants Interview (KII), it is gathered as: TVET plays a vital role for getting jobs. It can play few roles in livelihood development, but not the vast role. It should play important role in skills development and higher education.

In response to the question “what is the contribution of the chakma diploma engineers in their society after getting jobs?” Answers received are as follows: (a) Satisfactory. (b) Self, family and community status has been changing day by day. (c) Social status is enhanced. They are followed by many others. Students are encouraged to read in diploma in engineering. Queen Yen Yen (2017) wrote in her article as: “Perhaps there will be no abundance of money and wealth if anybody engaged in various professions after becoming skilled in technical education.

But at least one can avoid the trap of unemployment through this education. Especially those learners of whom are very weak in general education and there is a possibility of becoming self-reliant through taking technical education if proper guidance would be provided in due

time”. [Shahar mukhi Adivasider Arthonaitik Abaster Prekshapate karigor shikshar Prasangitota (Relevance of Technical Education on perspective of economic condition of town bound adivasis), Kurum, 2nd issue, p-41].

Sociologist professor Dr. Sudhin Kumar Chakma mentioned the situation as: “Since modern industrial occupation requires formal educational qualifications and technical training the chakmas could not enter the mainstream acceptance due to lack of education. But the forced migrant chakmas due to Kaptai dam realized the importance of education and started imparting education to their children.

It is observed that education on a mass scale has been introduced in recent years. Education amongst a few chakmas has spread to such an extent that besides master degrees, there are some chakmas with a degree in medicines, engineering, agriculture and Ph. D etc. Education has brought about change in the agro-economic life of the chakmas and termed them into a serving salaried class.

Just as education has brought about a change in the field of occupation, it has made direct relationship with the changes in the economic sphere of this community. They come in contact with the outside world due to education, urbanization and forced migration.” [changing pattern of the chakma society in the Chittagong Hill Tracts, p-79].

2. The monthly income of the Chakma diploma engineers has been increasing: Answers gathered through Key Informants Interview (KII) as: there is a popular slogan seen that “when you take technical education, you will get job at home and abroad” The meaning of getting job is getting a regular income source. If you have an income source, then there will have a standard of life.

In considering the existing circumstances, presently technical education is the only way to get a regular income source at less effort. Technical education has been becoming a source of interest among the youngsters and neighbor after observing the livelihood standard of the diploma engineers in Khagrachari district.

Queen Yen Yen mentioned in her article as: “Whereas many educated Adivasis have become helpless and jobless, on the contrary some Adivasis have been living in well off position, because of their technical skill even with less education. Many Adivasi women have become self-reliant, after getting training from the Technical Training Centre (TTC)”. Changing

livelihood pattern and living in well off condition is also a testimony of increasing monthly income through TVET education.

Regarding the point: The condition of residence has been improving day by day. Mr. Sugata Chakma mentioned as: “Now, chakma traditional houses namely ‘Mozaghor’ or ‘Machang ghor’ are only visible in inaccessible and remote hilly forests. The reason behind it that the materials (bamboo, tree, thatch and other materials) are only available in the forest. It becomes very expensive if it is available outside the forest.

The informations’ gathered during the field work that the chakmas living in town have given emphasis on building or pucca houses. Half walled/ tinshed houses/ soil made houses have made in mentionable quantity in some villages of them in the meantime”. [ibid, p-112].

3. Most of the Chakma diploma engineers using sanitary latrine: Mr. Sugata Chakma wrote as: “The informations’ gathered during the field work that Most of them have hygienic latrine. Now, chakmas are very conscious about water and sanitation system.” [ibid, p-112]

4. Most of the Chakma diploma engineers are drinking safe water: Mr. Sugata Chakma wrote as: “They have secured water from their tube well in district and upazila sadar. Most of them have hygienic latrine. Now, chakmas are very conscious about water and sanitation system”. [ibid, p-112].

5 Their children are going different types of schools and somebody are going abroad to read: Answer received from the KII AS: They also get admitted their childrens to the high-quality standard schools. Mr. Sugata Chakma wrote as: The advancement of chakmas in education has been continued. A college in chengi mouza and another college at Babuchara in Diginala mouza have been established in the meantime, where the chakma people have been extended co-operation with enthusiasm. It is mentionable that there are 72 teachers have been teaching in 9(nine) colleges in Khagrachari district. Among them, some chakma women have also been teaching. Many male and female teachers have been serving at primary, junior high and high schools. The medium of education is both in Bengali and English. But in last some decades various NGO (save the children, BRAC etc.) have been teaching at preprimary school in Bengali, English and also in chakma language. [ibid, p-109].

Professor Dr. Sudhin K. Chakma wrote as: “Education amongst a few chakmas has spread to such an extent that besides master degrees, there are some chakmas with a degree in medicines, engineering, agriculture and Ph. D etc”. [ibid, p-79].

6. The result also revealed that most of the Chakma diploma engineers are using their own motor vehicles: Mr. Sugata Chakma wrote as: “In some areas of chakma community, there is an improvement in roads and communications. Some of them bought motor cycle for their own use”. [ibid, p-111].

7. It can be said that the livelihood pattern of Chakma diploma engineers has been changing due to technical education: Answers received from KII AS: getting a job among the chakma society on Khagrachari specially govt. job means establishment in the society.

As a result, vast change in livelihood pattern. There is significant change in livelihood pattern, when they get jobs due to technical education. For example, there is a tendency to buy costly furniture, fridge, TV, car etc. They also get admitted their childrens to the high -quality standard schools. Simultaneously they do extra job or overtime to maintain lavish livelihood.

Professor Dr. Sudhin K. Chakma wrote as: “Education amongst a few chakmas has spread to such an extent that besides master degrees, there are some chakmas with a degree in medicines, engineering, agriculture and Ph. D etc. Education has brought about change in the agro-economic life of the chakmas and termed them into a serving salaried class.

Just as education has brought about a change in the field of occupation, it has made direct relationship with the changes in the economic sphere of this community. They come in contact with the outside world due to education, urbanization and forced migration.” [ibid, p-79].

6.2 Addressing the Research Questions

6.2.1 Research Question 1 What is the role of TVET institutions in enhancing Chakma diploma engineers’ employment?

In response to question no. 1, i.e.- “what are the impacts of technical education on livelihood development of chakma diploma engineers in Khagrachari district?”

Answers gathered through Key Informants Interview (KII) with knowledgeable and expert persons on Chakma affairs. These are as follows:

1. TVET plays a vital role for getting jobs. It can play few roles in livelihood development, but not the vast role. It should play important role in skills development and higher education.
2. It is comparatively easy to get job on the behalf of chakmas diploma engineers due to technical education. The impacts of TVET on livelihood development of chakma diploma engineers are:(a) Became self-reliant, (b) They create employment for jobless youths through becoming an entrepreneur.
3. Changing livelihood pattern due to technical education among the chakma diploma engineers are: (a) Getting jobs easily, (b) Growing positive attitude regarding technical education, (c) Application of acquired knowledge, skills and experience for better ment of the society.
4. Construction of road, bridge, culvert and building have been going on as a result of technical education.
5. Scope for jobs and self-employment have been increasing due to technical education.
6. The impacts of TVET on livelihood development of chakma diploma engineers are (a) social, (b) economic, and (c) family.
7. The chakma diploma engineers have been serving both in public and private sector. They also solving the problem of unemployment by creating self-employment.
8. There is a popular slogan seen that “when you take technical education, you will get job at home and abroad” The meaning of getting job is getting a regular income source. If you have an income source, then there will have a standard of life. In considering the existing circumstances, presently technical education is the only way to get a regular income source at less effort. Technical education has been becoming a source of interest among the youngsters and neighbor after observing the livelihood standard of the diploma engineers in Khagrachari district.

6.2.2 Research Question 2 Answer to the Research Question-2 (How employment ensures livelihood development of Chakma diploma engineers?)

In response to question, “what are the examples of changing livelihood pattern due to technical education among the chakma diploma engineers”, answers received through KII are as follows:

1. Getting a job means getting a source of income. Where there is income, there is easy livelihood too. There is no alternative to technical education for easy livelihood.
2. Getting job, establishing business organisation and creating self-employment.
3. There is much influence in livelihood development due to technical education.
4. Change in livelihood pattern are job and business.
5. Change in livelihood pattern are multidimensional, e.g.-social, economic and educational etc.
6. The quantity of unemployment has been reducing due to employment in public, private and NGO organization. As a result, social discipline has been maintained properly.
7. Agro based country like Bangladesh, where peasants are not getting proper price for their agricultural products. On the country, getting a job among the chakma society on Khagrachari specially govt. job means establishment in the society. As a result, vast change in livelihood pattern. There is significant change in livelihood pattern when they get jobs due to technical education. For example, there is a tendency to buy costly furniture, fridge, TV, car etc. They also get admitted their childrens to the high -quality standard schools. Simultaneously they do extra job or overtime to maintain lavish livelihood.

6.3 Implications of the Findings of the Study

In response to the question, “what are the strategies to be taken on behalf of the government to expedite technical education among the chakma community” answers received from the Key Informants at interview as follows:

1. Initiative should be taken for publicity and expansion of technical education in greater Chittagong Hill Tracts including special educational scholarship. Guardians belong to remote areas of greater Chittagong Hill Tracts are still unaware regarding benefit of technical education properly.

They are busy in thinking regarding traditional education (I.A, B.A, and M.A). Very few students come with interest to the Polytechnic Institutes to learn technical education. They leave the Polytechnic after one or two semesters of a course as guardians are unable to bear

their educational expenses. It is very difficult on behalf of guardians to bear all expenses, like educational expenses of other children, family expenditure in addition to Polytechnic expenses with Jhum cultivation or only one banana garden.

A strategy may be done that establishment of enough technical education on behalf of government. It is unwise to establish Polytechnic Institute for profit generation. It may be a fruitful strategy to ensure jobs after successful completion of technical education. In addition, government assistance in self-employment activity. The hilly students with less GPA from backward section will get chance to government Polytechnic Institutes, if the rate of quota is increased.

i) The recommendations may be:

- (a) To do publicity of technical education regarding how technical education make vast change in personal life as well as in society.
- (b) Certificate of attendance may be given in addition to scholarship to encourage the students.
- (c) Counselling should be given to the students regarding the departments they study or any problem they face to carry on study.

ii) Strategies may be undertaken to expedite technical education are:

- (a) To make aware about technical education.
- (b) To establish technical school & college in every Upazila.
- (c) Priority should be given to women enrollment in technical education.

iii) Strategies should be undertaken to expedite technical education among chakma community are:

- (a) Incentive allowance should be given.
- (b) Motivation of others by literate diploma engineers.
- (c) Sending abroad for higher technical education.
- (d) Supplying capital for entrepreneurship.
- (e) Employment as ‘apprentice’ in various education institutions as an activity of campaign.
- (f) Government scholarship can expedite technical education.

iv) Strategy should be taken:

- (a) Service holder chakma diploma engineers should be posted to their locally, e.g.- Khagrachari.

(b) The barrier or obstacles to the promotion should be eliminated.

v) (a) Quota for admission should be increased as well arrangement of scholarship for the backward chakma community.

(b) Technical education should be introduced (befitting the age) up to date and practical.

6.4 Limitations of the Study and Directions for Further Research

The study has some limitations. In Bangladesh, there is no official statistics on chakma diploma engineers' population. There is no data available on behalf of BBS, BANBEIS and district administration of Khagrachari. So, a private survey held by my data collectors. Which was later cross checked by the experts. It seems to me it may be 60 to 71. But somebody differs that it may be around 110. Some limitations were as follows:

(a) Most of the respondents were not familiar with the concept of questionnaire. So, they have some reservations regarding disclosure of personal financial affairs in such a way. Since, it is concerned with livelihood development. That's why questionnaire have to be developed in the light of the objectives.

(b) It was not possible to trace out the location of all the pass out chakma diploma engineers in a district like Khagrachari. Therefore, it was not possible to determine the actual population size. Hence random sampling procedure was not possible to follow. In this regard, purposive sampling procedure was followed.

(c) Engineers are the very busy men by their job nature. That's why after continuous efforts it was not possible to reach or communicate with all the diploma engineers who have scattered in all over the Bangladesh.

(d) Poor communication network in the remote areas of Khagrachari and misunderstanding regarding the research matter also sometime creates a few problems.

(e) Since the research work was done before and during corona pandemic. It was a tough job to communicate with the desired respondents. But sincerity and dedication of the researcher has overcome most of the problems.

Based on the findings, the following points/areas may be considered implications for further research.

1. To find out a sustainable solution of water crisis in the hilly areas of the Khagrachari districts.

2. To find out a sustainable solution of communication network in the remote hilly areas of Khagrachari.
3. To Identify best alternatives to Jhum cultivation and its socio-economic impact on food security in CHT.
4. To find out a correlation between standard education of the schools and quantity of qualified TVET chakma diploma engineers.

6.5 Concluding Remarks

- According to UNESCO: TVET describes combined process of education and training and recognizes the common objective of employment as their immediate goal. TVET is an integral component of lifelong learning and as such plays a crucial role in helping individuals and countries to achieve a culture of peace environmentally sound sustainable development, social cohesion and international citizenship [UNESCO, 1999 Paris]. That's why TVET's ultimate goal is to develop human resource.

- After conducting questionnaire survey among the chakma diploma engineers, teachers and principals from the TVET Institutions, Focus Group Discussion (FGD) among the homogenous group of various professions and in-depth interview with the knowledgeable persons of Khagrachari (KII); it is clear that TVET Institutions as well as technical education has vast impact on livelihood development of chakma diploma engineers.

Now a days, it is a tough job to get a job in elsewhere. But after passing diploma in engineering, the chakma diploma engineers got secure jobs in both in public and private organizations. Now somebody enjoy secured government residence, self-motor vehicle, safe drinking water, standard washroom, continuous electricity supply above all a handsome salary at the end of the month.

- If we consider livelihood development indicator like physical capital, such as roads, water and sanitation which have been improved considerably. The condition of their residence has been improving day by day. Most of the chakma diploma engineers are using sanitary latrine and most of them are drinking clean and safe water. It is a good sign of their health care.

- If we consider financial capital, such as savings, credit and income from employment which are also improving significantly. From the statistical data and graph, we find that the monthly income of the chakma diploma engineers has been increasing significantly. The childrens of

them are going to different types of schools and somebody is going to abroad for higher education.

From the statistical data and graph, the result also revealed that most of the chakma diploma engineers are using their own motor vehicles. If we consider human capital, such as skills, knowledge, health and ability to work. Due to technical education, they are capable to design and implementation of engineering work, such as road network, water supply and sanitation, electricity supply, telecommunication etc.

- Hence, it can be said that the livelihood pattern of the chakma diploma engineers has been changing due to TVET institutions as well technical education. It is clear from the statistical data and information gathered through various research instruments (survey questionnaire, FGD, KII, etc) that employment of the chakma diploma engineers has been increasing due to technical education. So, there is no alternative to technical education for employment generation as well as livelihood development.

Recommendations:

a) To increase the role of TVET institutes in enhancing chakma diploma engineers' employment, some steps should be taken as:

1. Appropriate steps should be taken for publicity of technical education among the chakma community as well as other communities of the greater Chittagong Hill Tracts.
2. Proper counselling should be given by the TVET institutes as well as Chakma civil society about the promising/emerging technologies to read and the problems relating to technical education.
3. Special educational scholarship may be introduced to make technical education popular among the chakma community as well as for the other communities.
4. Priority should be given to small ethnic community women enrollment in technical education.
5. Lack of social status is the main problem to encourage youths to technical education. To solve the problem, the profession should be made fascinating and lucrative by introducing special increments, after joining to the job and providing rent free residence for essential and emergency engineering services.

6. Sublease system (Borga Protha) of the teachers belong to primary and secondary should be eliminated for the sake of quality education to build up the students with sound mathematical foundation for future technical education.

7. There is not enough technical institutions to provide technical education to the Chakma youths as well as other communities in Khagrachari. Till now, there is not a single public polytechnic institute in Khagrachari.

8. TVET institute should create a post of 'Research officer cum job placement officer' and 'Employment Support Service Desk' to look after and monitor job placement of TVET graduates. There should be a regular and updated database of TVET graduates in each TVET institute.

9. There should be a 'Student Guidance and Counselling Advisor' in each TVET institute. Career guidance and counselling should be provided.

10. TVET institute must arrange a source 'Job Fair' in each year and there must have a source of funding to carry out the programme.

b) To ensure livelihood development after employment of chakma diploma engineers, some steps should be taken as:

1. Chakma diploma engineers should be posted to their locality. Chakma youths will be encouraged to get admitted to Polytechnic Institutes after observing the success story of the chakma diploma engineers.

2. Governmental assistance may be provided for creating entrepreneur among the chakma diploma engineers to make them self-reliant.

3. Till now, the diploma or certificate courses offered by the TVET institutes are not so popular among the youths as well as to mass people, because of social status of the TVET professionals is not equivalent to general varsity graduates. So, glorification and upgradation of their status should be done through financial incentives and various facilities.

4. Establishment of garment industry or any other manufacturing industry may be a future promising sector in Khagrachari to engage the youths in productive activity.

5. Bamboo and wood - based paper mills may be established for employment of the youths.
6. Diploma engineers can set up consulting firm on building design and implementation (supervision and monitoring) in fast changing town like Khagrachari.
7. Since there is not a single standard engineering workshop in Khagrachari, diploma engineers can set up modern engineering workshop for vehicle maintenance as well as providing good service.
8. Rubber based industry may be set up to provide employment of the Chakma diploma engineers as well as for their livelihood development.
9. Fruit processing industry may be set up for employment generation of the Chakma diploma engineers and livelihood development and also for the sake of wasting perishable goods like fruit.

References

- Achieving Food and Nutrition Security in the Chittagong Hill Tracts, (2014). FAO publication.
- ADB Completion Report on Bangladesh: Chittagong Hill Tracts Rural Development Project. (2010, December). Asian Development Bank.
- Alam, Gazi Mahabubul (2008, March): The Role of Technical and Vocational Education in the National Development Bangladesh.
- Ali, Syed Md. Haider, Rahman, Md. K., Nessa, MS Quamrun, Jahan, MS Nargis and Professor Chowdhury, Masuda M Rashid (2011, June). Evaluation Study of the Chittagong Hill Tracts Rasul Development Project. 2nd Revised final report. Evaluation sector, IMED, Ministry of planning, Dhaka, Bangladesh.
- A report on enrollment analysis in TVET under Bangladesh Technical Education Board. (2016). BTEB.
- Asian Development Bank (2011, October): Chittagong Hill Tracts Rural Development Project: Key Project Results – output and outcome.
- Barua, Jotilal, Khan, N. Islam, Barua, Sagarmoy, Mohsin, S. Mohammad, Islam M.R. (2015, June): The agriculturists, 13(1): 119-126 (2015) ISSN 2304 – 7321 (online).
- Bassar, A.T.M. Z., Ahmed, Shakil and Habib, M. A. (2016, December12). Opportunities of Shifting Jhum and Constraints of Practicing Social Forestry in Khagrachari District of Bangladesh. International Journal of Advancements in Research & Technology, volume 5, Issue ISSN 2278-7763.
- Bornil Khagrachari. (2000). (Colourful Khagrachari). Published by district administration, Khagrachari.
- Chakma, A.S. and Nahar, B.S. (1999). Jhum cultivation influence the degradation of hilly environment, J. Environmental Science & Natural Resources, 5(2), 339-344, 2012 ISSN 1999-7361.
- Chakma, Dr. P.B. (1998, July): The Economy of the Indigenous peoples of the CHT. Journal of Management, Vol. 1-4, Number-1, July,1998, Department of Management, University of Dhaka.
- Chakma, encyclopedia.com.
- Chakma, Kirti Nishan, Barman, S. Kanti (2013, February): Promotion of Development and Confidence Building in the Chittagong Hill Tracts. Chittagong Hill Tracts Development Facility (CHTDF) and United Nations Development Programme (UNDP).

- Chakma, Manjulika. (2018, November). Daily Kaler Kontho. An interview with successful women entrepreneur Manjulika Chakma.
- Chakma, Pallab: Urge to tackle unemployment of Indigenous Youth in Bangladesh. Kapaeng Foundation, Dhaka.
- Chakma people, Wikipedia, the free encyclopedia.
- Chakma, Sudhin Kumar (2012, May 30). Changing pattern of the chakma society in the Chittagong Hill Tracts, Khudra Nree Gosthir Sangskirtic Institute, Khagrachari.
- Chakma, Sugata (2019). Khagrachari Parbattya Zillar Chakmader Artho Samajik Obostha (Socio-economic condition of the Chakma People in Khagrachari district), Kshudra Nrigostir Sangskritik Institute, Khagrachari.
- Chakma, Sugata. (1982, January7). Chakma Culture. Folklore (The Journal of the Folklore Research Institute, Bangladesh): 58–75,
- Chakma S.S. and Ando, K. (2008). Jhum cultivation in Khagrachari Hill District of Bangladesh a subsistence farming practices in ethnic minorities.
- Chowdhury, Shamima (2001, September): Chittagong Hill Tracts and Environment. Chittagong Hill Tracts State of Environment, Forum of Environmental journalist of Bangladesh (FEJB) ISBN984-756-009-9.
- Dasgupta, Subash, Ghosh, S. P., and Pillai, K.G. (2008). CHITTAGONG HILL TRACTS: Growth Potential in High Value Agriculture, Dhaka, Bangladesh.
- Demographics of Bangladesh, Wikipedia.
- Dewan, Dr. Manik Lal. (2013, September). Ami O Amar Prithibi, Tribal Officers' Colony, Tabalchari, Rangamati.
- Emran, Md. (2015, December): TVET for employment and sustainable development. A power point presentation by the author on December 26, 2015.
- Hawladar, Faruque A. (2015): Entrepreneurship Education in TVET for small and Medium Enterprise Development: A case study of Bangladesh.
- Haque, Dr. Mahfuzul (2001): Chittagong Hill Tracts of Bangladesh: Physical Environment. Chittagong Hill Tracts State of Environment, Forum of Environmental journalist of Bangladesh (FEJB) ISBN984-756-009-9.
- Indigenous peoples in Bangladesh, Wikipedia.
- Kashem, Abul. (2005, August): Indigenous people in Bangladesh: Their Struggle and Survival Strategy. Journal of Ethnic Affairs, Volume 1, August 09,2005. ISBN 984-32-2728-X.

- Key findings of the “International Skills Conference 2019” held at Radisson Blu, Dhaka from (9-10) March, 2019; organized by Skills and Training Enhancement Project (STEP).
- Khan, Md. Shahadat Hossain, Mahbub Hasan and K.M. Md. Golam Rabbani: “Current Trends and Issues in TVET of Bangladesh. IGI Global book series Advances in Higher Education and Professional Development, USA.
- Khisa, Ananta Bihari. (1979, January14). Shiksha Dikshay Parbattya Chattagram (Educational Activities of the Chittagong Hill Tracts). A seminar paper which is presented by the author at the seminar on “History and Tradition of Chittagong Hill Tracts” on 14-01-1979 in Khagrachari organized by Bangladesh parishad.
- Khisa, Pradipta. (1993). Karnaphuli Hydro station and its future in Bangladesh. A seminar paper presented by the author at the seminar room of Mechanical Engineering Department, B.I.T. Chittagong (Present CUET).
- Khisa, Pradipta. (1996) Parbattya Chattagramer Samasya (Problems of the Chittagong Hill Tracts). Sahitya Prakash, Dhaka.
- Khisa, Pradipta. (2003): Shahjalal University: A Symbol of Pride, but....., Proyas; a SUOA publication, SUST, Sylhet P-45.
- Miah, Md. Danesh, Chakma Sheeladitya, Koike, Masao and Mohammad, Nur (2011, Oct): Contribution of forests to the livelihood of the chakma community in the Chittagong Hill Tracts of Bangladesh. Published online: 15 October 2011.
- Nath, T.K., Inone, M. and Chakma, S. (2005). Shifting cultivation (Jhum) in the Chittagong Hill Tracts, Bangladesh: Explaining its sustainability, rural livelihood and policy implications. International Journal of Agricultural Sustainability, Vol 3, No.2.
- Queen Yen, Yen. (2017). Shaharmukhi Adivasider Aurthonitik Obosthar Prekshapate Karigori Shikshar Prasangigota (Relivance of Technical Education on Perspective of Economic Condition for Town bound Adivasis). Little magazine, Kurum, 2nd Issue.
- Rahman, Dr. Atiur. (2017). TVET and Socio-Economic Development in Bangladesh: Steps, Challenges and Ways Forward.
- Rahman, Md. Matiur (2005): Trends in Technical Education in Bangladesh, BTEB Souvenir, published in 2005.
- Rasul, Dr. Golam (2016, Jan) Chittagong Hill Tracts: Potential for development in the spotlight. The Daily Star, Dhaka, Bangladesh.
- Rasul, Golam. (2015, May): A Strategic Framework for Sustainable Development in the Chittagong Hill Tracts of Bangladesh. International Centre for Integrated Mountain Development, Kathmandu and Ministry of Chittagong Hill Tracts Affairs, Government of the People's Republic of Bangladesh. This paper was presented at the consultation meeting on ‘Seventh Five Year Plan and Development Vision for Chittagong Hill Tracts, Bangladesh’ organized by the Ministry of Chittagong Hill Tracts Affairs jointly

with the Planning Commission and the International Centre for Integrated Mountain Development on 11 May 2015 in Dhaka.

- Rasul, Golam. (2016, January 14). Sustainable Development in Chittagong Hill Tracts of Bangladesh, Daily Asian age, special supplement.
- Roy, Devasish and Halim, Saleka (2001, September): Valuing village commons in Forestry: A case from the Chittagong Hill Tracts. Chittagong Hill Tracts State of Environment, Forum of Environmental Journalist of Bangladesh (FEJB) ISBN 984-756-009-9.
- Tapa, B. Gopal and Rasul, Golam (2014, September): Patterns and determinants of agricultural system in the Chittagong Hill Tracts of Bangladesh. Published online 11 September 2004.
- Uddin, M.J., Hasan, M. K., and Miah, M. M. (2010, August). Identifying Livelihood Patterns of Ethnic Minorities and Their Coping Strategies Different Vulnerabilities Situation in Chittagong Hill Tracts Region, Bangladesh. National Food Policy Capacity Strengthening Programme.
- UNB, Dhaka (2011, May 22). Road communication in CHT now easier. The Daily Star. thedailystar.net/news-detail-186707
- United Nations World Food Programme in Bangladesh, (2017). Agricultural Livelihood in the Higher Elevation Areas of the Chittagong Hill Tracts: Baseline Study, 2017.
- Website of Khagrachari District Administration.

Appendix-1

4 (Four) set of questionnaires have been made as below:

1. Questionnaire survey for Chakma TVET Diploma Engineers' (both in-service and jobless).
2. Questionnaire survey for TVET Institution Principal and Teachers.
3. Interview schedule for Key Informants.
4. Questionnaire for Focus Group Discussants.

রিসার্চ এন্ড নলেজ ম্যানেজমেন্ট সেল, কারিগরি শিড়্গা অধিদপ্তর, আগারগাঁও, ঢাকা-১২০৭

পরিশিষ্ট-১ : চাকমা কারিগরি (টিভিইটি) ডিপ্লোমা ইঞ্জিনিয়ারদের জন্য প্রশ্নমালা :

[এই অংশটি কারিগরি শিক্ষা অধিদপ্তরের গবেষণা সেলের অধীনে একটি গবেষণা কাজ সম্পন্ন করার জন্য তৈরি করা হয়েছে। গবেষণা সংশ্লিষ্ট তথ্যনেয়ার জন্য আপনাকে একজন সাক্ষাৎকার প্রদানকারী হিসেবে নির্বাচিত করা হয়েছে। সকল তথ্যশুধুমাত্র গবেষণার কাজে ব্যবহৃত হবে এবং গোপনীয়তা রক্ষা করা হবে।]

গবেষণা শিরোনাম : খাগড়াছড়ি জেলার চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের জীবনযাত্রার মান উন্নয়নে কারিগরি ও বৃত্তিমূলক শিক্ষা এবং প্রশিক্ষণ (টিভিইটি) এর ভূমিকা।

(ক) উত্তরদাতার পরিচিতি (চাকমা কারিগরি ডিপ্লোমা ইঞ্জিনিয়ার) :

- (১) নাম :
 (২) পদবী :
 (৩) টেকনোলজি/ বিভাগ :
 (৪) প্রতিষ্ঠানের নাম (পাশকৃত) :
 (৫) থানা/ উপজেলা :
 (৬) জেলা :

(খ) চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের জন্য প্রশ্নমালা :

(১) আপনি কখন কারিগরি (টিভিইটি) প্রতিষ্ঠান হতে পাশ করেছেন?
 উত্তর :

(২) আপনি কখন এই প্রতিষ্ঠানে যোগদান করেছেন?
 উত্তর :

(৩) আপনার নিয়োগের তথ্য বর্ণনা করুন (অনুগ্রহপূর্বক লিখুন) :

ক্রমিক নং	প্রতিষ্ঠানের নাম	হতে	পর্যন্ত	ঠিকানা	মন্তব্য
১					
২					
৩					

(৪) আপনার বৈবাহিক অবস্থা কি? (অনুগ্রহ পূর্বক টিক চিহ্ন দিন) :

(ক) অবিবাহিত/একা (খ) বিবাহিত (গ) অন্যান্য

(৫) আপনার আয়ের উৎস কি? (অনুগ্রহপূর্বক টিক চিহ্ন দিন) :

ক্রমিক নং	চাকুরি	ব্যবসা	উদ্যোগ	অন্যান্য (সুনির্দিষ্ট করুন)	মন্তব্য
১					

(৬) আপনার মাসিক আয় কত? (অনুগ্রহপূর্বক টিক চিহ্ন দিন) :

ক্রমিক নং	পরিসর (টাকা)	প্রযোজ্য পরিসরে টিক চিহ্ন দিন	অন্যান্য (সুনির্দিষ্ট করুন)	মন্তব্য
১	১০,০০১-১৫,০০০/-			
২	১৫,০০১-২০,০০০/-			
৩	২০,০০১-২৫,০০০/-			
৪	২৫,০০১-৩০,০০০/-			

৫	৩০,০০১-৩৫,০০০/-			
৬	৩৫,০০১-৪০,০০০/-			
৭				

৭। আপনার পরিবারে কি অন্যকেউ উপার্জনক্ষম ব্যক্তি আছেন (অনুগ্রহপূর্বক সুনির্দিষ্টভাবে লিখুন)ঃ

ক্রমিক নং	উত্তর দাতার সাথে সম্পর্ক	পেশা	মাসিক আয় (গড়)	মন্তব্য
১				
২				
৩				
৪				
৫				

৮। আপনার পরিবারে কি কেউ বেকার সদস্য আছে?

(ক) হ্যাঁ (খ) না

৯। আপনার বর্তমান বাসার ধরণ উল্লেখ করুন (অনুগ্রহ পূর্বক টিক চিহ্ন দিন) :

ক্রমিক নং	নিজ	সরকারি	ভাড়া	অন্যান্য (সুনির্দিষ্ট করমন)	মন্তব্য
১					

১০। অনুগ্রহ পূর্বক বাসার ধরণ উল্লেখ করুন (টিক চিহ্ন দিন) :

ক্রমিক নং	দালান/বিল্ডিং	টিনশেড ও আধা পাকা দেয়াল	টিনশেড ও বাঁশের বেড়া	মাটির ঘর	শণের ঘর	অন্যান্য (সুনির্দিষ্ট করমন)	কড়া সংখ্যা
১							

১১। আপনার শৌচাগারের ধরণ ও মান সম্পর্কে বর্ণনা করুন (অনুগ্রহ পূর্বক টিক চিহ্ন দিন) :

ক্রমিক নং	দালান/বিল্ডিং	টিনশেড ও আধা পাকা দেয়াল	টিনশেড ও বাঁশের বেড়া	শণের (ধরন)	অন্যান্য (সুনির্দিষ্ট করমন)	সংখ্যা	মন্তব্য
১							

১২। আপনার স্যানিটেশন ব্যবস্থা টয়লেট/পায়খানা সম্পর্কে বলুন (অনুগ্রহ পূর্বক টিক চিহ্ন দিন) :

ক্রমিক নং	দালান (পাকা)	টিনশেড ও আধাপাকা দেয়াল	শণের (কাঁচা)	অন্যান্য (সুনির্দিষ্ট করমন)	সংখ্যা	মন্তব্য
১						

১৩। আপনার কি পৌরসভা হতে পানি সরবরাহের সুবিধা আছে?

(ক) হ্যাঁ (খ) না

১৪। যদি না হয়, তবে কোন ধরনের পানি ব্যবহার করেন?

ক্রমিক নং	নিজস্ব পানির মোটর	নিজস্ব নলকূপ	অন্যের নলকূপ	ছোট নদী/ ছড়ার পানি	অন্যান্য (সুনির্দিষ্ট করমন)	মন্তব্য
১						

১৫। আপনার বাসায় কি বিদ্যুতের সুবিধা আছে? (অনুগ্রহ পূর্বক টিক চিহ্ন দিন) :

ক্রমিক নং	হ্যাঁ	না	জেনারেটর	সোলার প্যানেল	অন্যান্য (সুনির্দিষ্ট করমন)	মন্তব্য
১						

১৬। আপনার সন্তানের শিক্ষা প্রতিষ্ঠান সম্পর্কে তথ্য দিন (অনুগ্রহপূর্বক টিক চিহ্ন দিন) :

ক্রমিক নং	প্রাইমারী স্কুল		কিডার গার্ডেন (বেসরকারি)	হাই স্কুল		বিশ্ববিদ্যালয়		অন্যান্য (সুনির্দিষ্ট করমন)	মন্তব্য
	সরকারি	বেসরকারি		সরকারি	বেসরকারি	সরকারি	বেসরকারি		
১									

১৭। আপনার কি নিজস্ব পরিবহন/ মোটরযান আছে? (অনুগ্রহপূর্বক টিক চিহ্ন দিন) :

ক্রমিক নং	সাইকেল	মোটর সাইকেল	কার	মাইক্রোবাস	অন্যান্য (সুনির্দিষ্ট করমন)	সংখ্যা	মন্তব্য
১							

১৮। আপনার কি নিজস্ব বিল্ডিং/ এপার্টমেন্ট আছে? (অনুগ্রহপূর্বক টিক চিহ্ন দিন) :

ক্রমিক নং	বিল্ডিং (কত তলা?)	এপার্টমেন্ট (কত বর্গফুট?)	টিনশেড ঘর	শনের (কাঁচা)	অন্যান্য (সুনির্দিষ্ট করমন)	মন্তব্য
১						

১৯। আপনার ছেলে মেয়ে কি বিদেশে পড়ে/ থাকে?

(ক) হ্যাঁ (খ) না

২০। আপনার মাসিক ব্যয় সম্পর্কে লিখুন (অনুগ্রহপূর্বক লিখুন) :

ক্রমিক নং	খান/বাবদ (গড়)	বাসা ভাড়া (গড়)	ছেলে মেয়েদের লেখাপড়া বাবদ	বিদ্যুৎ বিল (গড়)	পত্রিকা, ডিশ বিল ইত্যাদি	বিবিধ	মন্তব্য
১							

২১। আপনার বিশুদ্ধ পানির উৎস কি? (অনুগ্রহপূর্বক টিক চিহ্ন দিন) :

ক্রমিক নং	নলকূপ	রিংওয়েল (পাতকুয়া)	পৌরসভার পানি	রিভার ওসমোসিস পাম্প/ফিল্টার	নদী	পুকুর	ছোট নদী (ছড়া)	অন্যান্য (যদি থাকে)	মন্তব্য
১									

২২। আপনার ইলেক্ট্রিক্যাল ও ইলেক্ট্রনিক্স অ্যাপ্লায়েন্স সম্পর্কে তথ্য দিন (অনুগ্রহপূর্বক লিখুন) :

ক্রমিক নং	সামগ্রীর নাম	দাম (টাকা)	সংখ্যা	মন্তব্য
১	টিভি			
২	ফ্রিজ			
৩	ডি এস এল আর ক্যামেরা			
৪	এয়ার কুলার			
৫	ওয়াশিং মেশিন			
৬	ল্যাপটপ			
৭	আই পি এস			

৮	জেনারেটর			
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২৩। আপনার বাসা-বাড়ির ফার্নিচার সম্পর্কে তথ্য দিন (অনুগ্রহপূর্বক লিখুন) :

ক্রমিক নং	ফার্নিচারের নাম	দাম (টাকা)	সংখ্যা	মন্তব্য
১	খাট			
২	ওয়্যার ড্রোব			
৩	আলনা			
৪	ডাইনিং টেবিল			
৫	সোফা সেট			
৬	বুক সেল্ফ			
৭	শোকেস			
৮	ডিভান			

২৪। আপনার খাদ্যভ্যাস ও ভোগ সম্পর্কে বলুন (অনুগ্রহপূর্বক লিখুন) :

ক্রমিক নং	খাদ্যের ধরণ	মাসিক ব্যবহার (গড়)	গড়মূল্য (টাকা)	মন্তব্য
১	চাল			
২	ডাল			
৩	মাংস			
৪	মাছ			
৫	ময়দা			
৬	মশলা			
৭	সবজি			
৮	শটকী মাছ			

২৫। আপনার পানীয় সেবন সম্পর্কে কিছু বলুন (অনুগ্রহপূর্বক লিখুন) :

ক্রমিক নং	পানীয় এর ধরণ	মাসিক ব্যবহার (গড়)	গড়মূল্য (টাকা)	মন্তব্য
১	দুধ			
২	চা			
৩	মদ			
৪	কফি			

২৬। আপনার কি সরকারি/বেসরকারি ব্যাংকে মাসিক সঞ্চয় স্কীম আছে? (অনুগ্রহপূর্বক টিক চিহ্ন দিন) :

ক্রমিক নং	সোনালী	জনতা	কৃষি	অগ্রণী	রাক	সাইথিস্ট	স্ট্যান্ডার্ড চার্টার্ড	ডাচ-বাংলা	ব্যাংক এশিয়া	রূপালী	এনআরবি	অন্যান্য	মন্তব্য
১													

২৭। আপনি কি পরিবার চালাতে গিয়ে অন্য কোন উপায় হতে ধার করেন? (অনুগ্রহপূর্বক টিক চিহ্ন দিন) :

ক্রমিক নং	ব্যাংক	এনজিও	সহকর্মী	সমবায় সমিতি	পরিমাণ	সুদের হার (%)	মন্তব্য
১							

২৮। আপনার কি জীবন বীমা পলিসি বা শিশুদের শিক্ষা বীমা পলিসি রয়েছে? (অনুগ্রহপূর্বক টিক চিহ্ন দিন) :

ক্রমিক নং	অ্যালিকো পলিসি	জীবন বীমা পলিসি	শিশুদের শিড্রা বীমা পলিসি	অন্যান্য (যদি থাকে)	মন্তব্য
১					

২৯। প্রতি বছর কতজন চাকমা ছাত্র-ছাত্রী চাকুরী পেয়ে থাকে?

উত্তর :

৩০। পাশ করার পর প্রতি বছর কতজন চাকমা ছাত্র-ছাত্রী বেকার থাকে?

উত্তর :

৩১। পাশ করার পর কেন চাকমা ছাত্র-ছাত্রীরা চাকুরী পায় না?

উত্তর :

৩২। পাশ করার পর চাকমা ছাত্র-ছাত্রীরা কি চাকুরি পাওয়ার জন্য যথেষ্ট যোগ্য থাকে?

উত্তর :

৩৩। কারিগরি শিক্ষা গ্রহণ করে একজন চাকমা ডিপ্লোমা ইঞ্জিনিয়ার কি তার পরিবারের জীবনযাত্রার মান উন্নয়ন করতে পারে?

উত্তর : (ক) হ্যাঁ (খ) না (গ) অন্যান্য

৩৪। উত্তর যদি হ্যাঁ হয়, তবে কীভাবে?

উত্তর :

৩৫। উত্তর যদি না হয়, তবে কেন নয়?

উত্তর :

৩৬। আপনার মতে চাকমা সমাজে ডিপ্লোমা ইঞ্জিনিয়ারদের সামাজিক স্বীকৃতি বা মূল্যায়ন আছে কি?

উত্তর : (ক) হ্যাঁ (খ) না (গ) অন্যান্য

৩৭। উত্তর যদি হ্যাঁ হয়, তবে কোন ধরনের সামাজিক স্বীকৃতি বা মূল্যায়ন?

উত্তর :

৩৮। উত্তর যদি না হয়, তবে কেন সামাজিক স্বীকৃতি বা মূল্যায়ন করা হয় না?

উত্তর :

৩৯। আপনার মতে কারিগরি শিক্ষা লাভ করে একজন চাকমা ছাত্র-ছাত্রী কি সাধারণ শিক্ষায় শিক্ষিত ছাত্র-ছাত্রীদের চেয়ে আগে চাকুরি পেতে পারে?

উত্তর : (ক) হ্যাঁ (খ) না

৪০। আপনি কি মনে করেন ডিপ্লোমা পাশ করে একজন চাকমা ছাত্র-ছাত্রী সহজে প্রতিষ্ঠিত হতে পারবে?

উত্তর : (ক) হ্যাঁ (খ) না

৪১। যদি উত্তর হ্যাঁ হয় তবে ডিপ্লোমা পাশ করে প্রতিষ্ঠিত হওয়া কয়েকজন সফল ব্যক্তির নাম লিখুন।

ক্রমিক নং	নাম	পদবী	ঠিকানা	মাসিক আয়	সফলতার ক্ষেত্র	অন্যান্য	মন্তব্য
১.							
২.							
৩.							
৪.							

৫.							
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সাক্ষাৎকার প্রদানকারীর স্বাক্ষর
 রিসার্চ এন্ড নলেজ ম্যানেজমেন্ট সেল, কারিগরি শিক্ষা অধিদপ্তর, আগারগাঁও, ঢাকা-১২০৭

সাক্ষাৎকার গ্রহণকারীর স্বাক্ষর

পরিশিষ্ট-২ : টিভিইটি প্রতিষ্ঠানের অধ্যক্ষ/শিক্ষকদের জন্য প্রশ্নমালা :

[এই অংশটি কারিগরি শিক্ষা অধিদপ্তরের গবেষণা সেলের অধীনে একটি গবেষণা কাজ সম্পন্ন করার জন্য তৈরি করা হয়েছে। গবেষণা সংশ্লিষ্ট তথ্য নেয়ার জন্য আপনাকে একজন সাক্ষাৎকার প্রদানকারী হিসেবে নির্বাচিত করা হয়েছে। সকল তথ্য শুধুমাত্র গবেষণার কাজে ব্যবহৃত হবে এবং গোপনীয়তা রক্ষা করা হবে।]

গবেষণা শিরোনাম : খাগড়াছড়ি জেলার চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের জীবনযাত্রার মান উন্নয়নে কারিগরি ও বৃত্তিমূলক শিক্ষা এবং প্রশিক্ষণ (টিভিইটি) এর ভূমিকা।

(ক) উত্তরদাতার পরিচিতি (টিভিইটি প্রতিষ্ঠানের অধ্যক্ষ/শিক্ষকদের জন্য) :

- | | | |
|-----|---------------------------|---|
| (১) | নাম | : |
| (২) | পদবী | : |
| (৩) | টেকনোলজি/ বিভাগ | : |
| (৪) | প্রতিষ্ঠানের নাম (পাশকৃত) | : |
| (৫) | থানা/ উপজেলা | : |
| (৬) | জেলা | : |

(খ) টিভিইটি প্রতিষ্ঠানের অধ্যক্ষ/ শিক্ষকদের জন্য প্রশ্নমালা:

১। আপনার প্রতিষ্ঠান কখন স্থাপিত হয়েছে?

উত্তর :

২। আপনার প্রতিষ্ঠানে কতগুলি টেকনোলজি (ট্রেড/বিভাগ) রয়েছে?

উত্তর :

৩। প্রতি বছর সাধারণত কতজন চাকমা ছাত্র আপনার প্রতিষ্ঠানে ভর্তি হয়ে থাকে (গড়ে)?

উত্তর :

৪। প্রতি বছর চাকমা ছাত্র-ছাত্রীদের পাশের হার কত?

উত্তর :

৫। প্রতি বছর চাকমা ছাত্র-ছাত্রীদের ঝরে পড়ার (ড্রপ আউট) হার কত?

উত্তর :

৬। প্রতি বছর কতজন চাকমা ছাত্র-ছাত্রী চাকুরি পেয়ে থাকে?

উত্তর :

৭। পাশ করার পর প্রতি বছর কতজন চাকমা ছাত্র-ছাত্রী বেকার থাকে?

উত্তর :

৮। পাশ করার পর কেন চাকমা ছাত্র-ছাত্রীরা চাকুরী পায় না?

উত্তর :

৯। পাশ করার পর চাকমা ছাত্র-ছাত্রীরা কি চাকুরী পাওয়ার জন্য যথেষ্টযোগ্য থাকে?

উত্তর :

১০। চাকুরী পাওয়ার পরে চাকমা ছাত্র-ছাত্রীদের পরিবারে জীবন যাত্রার মান উন্নয়নে কি প্রভাব পড়ে?
(অনুগ্রহপূর্বক টিক চিহ্ন দিন।)

উত্তর : (ক) জীবনযাত্রার মান দিন দিন উন্নত হতে থাকে।

(খ) জীবনযাত্রার মান খুব ধীরে ধীরে উন্নত হতে থাকে।

(গ) জীবনযাত্রার মান হঠাৎ উন্নত হতে থাকে।

(ঘ) জীবনযাত্রার মান প্রায় আগের মত থাকে।

(ঙ) জীবনযাত্রার মানে একটা লক্ষণীয় পরিবর্তন দেখা যায়।

(চ) অন্যান্য (যদি থাকে, লিখুন)।

১১। কারিগরি শিক্ষা ব্যবস্থা (টিভিইটি সিস্টেম) চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের পরিবারের জীবনযাত্রার মান উন্নয়নে যথেষ্ট সহায়ক কিনা?

উত্তর :

১২। চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের চাকুরি প্রাপ্তির পর তাদের সমাজে ফলাফল (অবদান) কি?

উত্তর :

১৩। তাদের বিবিধ এলাকার উন্নয়নে কর্মকাণ্ডে চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের তাৎপর্যপূর্ণ কোন ভূমিকা রয়েছে কি?

উত্তর :

১৪। তাদের সমাজে চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের কোন সামাজিক স্বীকৃতি আছে কি?

উত্তর :

১৫। চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের কারিগরি (টিভিইটি) জ্ঞান দিয়ে তাদের সমাজে কোন তাৎপর্যপূর্ণ পরিবর্তন কি আপনি দেখতে পান?

উত্তর :

আপনার সহযোগিতার জন্য ধন্যবাদ

সাক্ষাৎকার প্রদানকারীর স্বাক্ষর

সাক্ষাৎকার গ্রহণকারীর স্বাক্ষর

রিসার্চ এন্ড নলেজ ম্যানেজমেন্ট সেল, কারিগরি শিক্ষা অধিদপ্তর, আগারগাঁও, ঢাকা-১২০৭

পরিশিষ্ট-৩ : কী ইনফরম্যান্টদের (মূল তথ্য দাতা/ তথ্যাভিজ্ঞ) জন্য সাক্ষাৎকার সূচি (ইন্টারভিউ সিডিউল) :

[এই অংশটি কারিগরি শিক্ষা অধিদপ্তরের গবেষণা সেলের অধীনে একটি গবেষণা কাজ সম্পন্ন করার জন্য তৈরি করা হয়েছে। গবেষণা সংশ্লিষ্ট তথ্য নেয়ার জন্য আপনাকে একজন সাক্ষাৎকার প্রদানকারী হিসেবে নির্বাচিত করা হয়েছে। সকল তথ্য শুধুমাত্র গবেষণার কাজে ব্যবহৃত হবে এবং গোপনীয়তা রক্ষা করা হবে।]

গবেষণা শিরোনাম : খাগড়াছড়ি জেলার চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের জীবনযাত্রার মান উন্নয়নে কারিগরি ও বৃত্তিমূলক শিক্ষা এবং প্রশিক্ষণ (টিভিইটি) এর ভূমিকা।

(ক) উত্তরদাতার পরিচিতি [কী ইনফরম্যান্টদের (মূল তথ্য দাতা/ তথ্যাভিজ্ঞ) জন্য] :

- | | | |
|-----|---------------------------|---|
| (১) | নাম | : |
| (২) | পদবী | : |
| (৩) | টেকনোলজি/ বিভাগ | : |
| (৪) | প্রতিষ্ঠানের নাম (পাশকৃত) | : |
| (৫) | থানা/ উপজেলা | : |
| (৬) | জেলা | : |

(খ) মূল তথ্য দাতাদের সাক্ষাৎকার সূচি:

১। খাগড়াছড়ি জেলার চাকমা জনগণের জীবিকার ধরণ সম্পর্কে আপনার ধারণা কী? (অনুগ্রহপূর্বক লিখুন) :

উত্তর :

২। খাগড়াছড়ি জেলায় চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের জীবনযাত্রার মান উন্নয়নে কারিগরি শিক্ষা (টিভিইটি) এর কী কী প্রভাব রয়েছে?

উত্তর :

৩। খাগড়াছড়িতে কারিগরি শিক্ষার কারণে চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের জীবিকার ধরণ পরিবর্তনে কী কী উদাহরণ রয়েছে?

উত্তর :

৪। চাকমা সম্প্রদায়ের মধ্যে কারিগরি শিক্ষাকে ত্বরান্বিত করতে সরকারি দিক হতে কী কী কৌশল অবলম্বন করা যেতে পারে?

উত্তর :

৫। আপনার মতে, চাকমা সম্প্রদায়ের জন্য কারিগরি শিক্ষাকে (এ&উএ&এ) বিশেষভাবে পরিচিত (চিহ্নিত/ ব্র্যান্ডিং) করতে সবচেয়ে ভাল সম্ভাব্য কৌশল কী কী হতে পারে?

উত্তর :

৬। চাকুরি পাওয়ার পরে চাকমা ছাত্র-ছাত্রীদের পরিবারে জীবনযাত্রার মান উন্নয়নে কী প্রভাব পড়ে? (অনুগ্রহপূর্বক টিক চিহ্ন দিন):

উত্তর : (ক) জীবনযাত্রার মান দিন দিন উন্নততর হতে থাকে।

(খ) জীবনযাত্রার মান খুব ধীরে ধীরে উন্নত হতে থাকে।

(গ) জীবনযাত্রার মান হঠাৎ করে উন্নত হতে থাকে।

(ঘ) জীবনযাত্রার মান প্রায় আগের মত থাকে।

(ঙ) জীবনযাত্রার মান-এ একটা লক্ষণীয় পরিবর্তন দেখা যায়।

(চ) অন্যান্য (যদি থাকে)।

৭। কারিগরি (টিভিইটি) সিস্টেম চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের পারিবারিক জীবনযাত্রার মান উন্নয়নে যথেষ্ট সহায়ক কিনা?
উত্তর :

৮। চাকুরি প্রাপ্তির পরে চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের তাদের সমাজে কী ফলাফল বয়ে নিয়ে আসে?
উত্তর :

৯। তাদের এলাকার বিবিধ উন্নয়ন কর্মকাণ্ডে চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের তাৎপর্যপূর্ণ কোন ভূমিকা রয়েছে কি?
উত্তর :

১০। চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের তাদের সমাজে কোন সামাজিক স্বীকৃতি আছে কি?
উত্তর :

১১। চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের কারিগরি (টিভিইটি) জ্ঞান দিয়ে তাদের সমাজে কোন তাৎপর্যপূর্ণ পরিবর্তন কি আপনি দেখতে পান?
উত্তর :

আপনার সহযোগিতার জন্য ধন্যবাদ

সাক্ষাৎকার প্রদানকারীর স্বাক্ষর

সাক্ষাৎকার গ্রহণকারীর স্বাক্ষর

রিসার্চ এন্ড নলেজ ম্যানেজমেন্ট সেল, কারিগরি শিড়া অধিদপ্তর, আগারগাঁও, ঢাকা-১২০৭

পরিশিষ্ট-৪ : Focus Group Discussion (FGD)

ফোকাস দল আলোচনা (কারিগরি শিড়া প্রসঙ্গে)

[এই অংশটি কারিগরি শিক্ষা অধিদপ্তরের গবেষণা সেলের অধীনে একটি গবেষণা কাজ সম্পন্ন করার জন্য তৈরি করা হয়েছে। গবেষণা সংশ্লিষ্ট তথ্য নেয়ার জন্য আপনাকে একজন সাক্ষাৎকার প্রদানকারী হিসেবে নির্বাচিত করা হয়েছে। সকল তথ্য শুধুমাত্র গবেষণার কাজে ব্যবহৃত হবে এবং গোপনীয়তা রক্ষা করা হবে।]

গবেষণা শিরোনাম : খাগড়াছড়ি জেলার চাকমা ডিপ্লোমা ইঞ্জিনিয়ারদের জীবনযাত্রার মান উন্নয়নে কারিগরি ও বৃত্তিমূলক শিক্ষা এবং প্রশিক্ষণ (টিভিইটি) এর ভূমিকা।

- (ক) উত্তরদাতার পরিচিতি :
- (১) নাম :
- (২) পদবী :
- (৩) টেকনোলজি/ বিভাগ :
- (৪) প্রতিষ্ঠানের নাম (পাশকৃত) :
- (৫) থানা/ উপজেলা :
- (৬) জেলা :

প্রশ্নমালা : ২

১। বাংলাদেশে বর্তমানে ৪৯টি সরকারি পলিটেকনিক ইনস্টিটিউট, ৬৪টি টেকনিক্যাল স্কুল ও কলেজ এবং প্রায় ৪০০টি বেসরকারি পলিটেকনিক ইনস্টিটিউট রয়েছে। এছাড়া খাগড়াছড়িতে ১টি সরকারি টেকনিক্যাল স্কুল ও কলেজ, ১টি সরকারি কারিগরি প্রশিক্ষণ কেন্দ্র, ১টি সরকারি ভোকেশনাল টেক্সটাইল ইনস্টিটিউট এবং ১টি বেসরকারি পলিটেকনিক ইনস্টিটিউট রয়েছে। আপনার মতে, বর্তমানে কত শতাংশ চাকমা ছাত্র-ছাত্রী সরকারি/ বেসরকারি পলিটেকনিক, সরকারি ভোকেশনাল, সরকারি টেকনিক্যাল স্কুল ও কলেজ, সরকারি কারিগরি প্রশিক্ষণ কেন্দ্র এবং সরকারি টেক্সটাইল ভোকেশনাল ইনস্টিটিউটে অধ্যয়ন করছে? (১টিক চিহ্ন দিন)

ক্রমিক নং	প্রতিষ্ঠান	ছাত্র-ছাত্রীর সংখ্যা (শতকরা)					অন্যান্য (ভিন্নমত)	মন্তব্য
		১%	৫%	১০%	১৫%	২০%		
১.	পলিটেকনিক							
২.	টিএসসি							
৩.	টিটিসি							
৪.	টেক্সটাইল ভোকেশনাল							

২। আপনার মতে, কারিগরি শিক্ষার প্রতি চাকমা ছাত্র-ছাত্রীদের দৃষ্টিভঙ্গি কেমন? (টিক চিহ্ন দিন)

ক্রমিক নং	খুবই আকর্ষণীয়	মোটাই আকর্ষণীয় নয়	কর্মমুখী	কর্মমুখী নয়	সহজে চাকুরী মেলে	সহজে চাকুরী মেলে না	সামাজিক মর্যাদার অভাব	অন্যান্য (ভিন্নমত)
১.								

৩। কারিগরি শিক্ষার প্রতি আপনি কি দৃষ্টিভঙ্গি পোষণ করেন? (টিক চিহ্ন দিন)

ক্রমিক নং	কর্মমুখী শিক্ষা	কর্ম সহায়ক নয়	দ্রুত স্বাবলম্বী হওয়া যায়	সহজে প্রতিষ্ঠিত হওয়া যায় না	সামাজিক মর্যাদা আছে	সামাজিক মর্যাদা নেই	অন্যান্য
১.							

৪। আপনি কি মনে করেন, ডিপ্লোমা পাশ করে একজন চাকমা ছাত্র-ছাত্রী জীবনে সহজে প্রতিষ্ঠিত হতে পারবে? (টিক চিহ্ন দিন)

উত্তর : (ক) হ্যাঁ (খ) না

৫। যদি হ্যাঁ হয়, তবে ডিপ্লোমা পাশ করে প্রতিষ্ঠিত হওয়া কয়েকজন সফল ব্যক্তির নাম লিখুন।

ক্রমিক নং	নাম	পদবী	ঠিকানা	মাসিক আয়	সফলতার ক্ষেত্র	অন্যান্য	মন্তব্য
১.							
২.							
৩.							

৬। উত্তর যদি না হয়, তবে কেন ডিপ্লোমা পাশ করে জীবনে প্রতিষ্ঠিত হওয়া যায় না, তার স্বপক্ষে কিছু কারণ উল্লেখ করুন (প্রয়োজ্য ক্ষেত্রে টিক চিহ্ন দিন)

ক্রমিক নং	চাকুরি পাওয়া যায় না	চাকুরি পেলেও বেতন কম	চাকুরি বেশ পরিশ্রমসাধ্য	চাকুরি ঝুঁকিপূর্ণ	চাকুরি আকর্ষণীয় নয়	অন্যান্য (যদি থাকে)	মন্তব্য
১.							

৭। আপনি কি মনে করেন, ডিপ্লোমা পাশ করে একজন চাকমা ছাত্র/ছাত্রী চাকুরিতে প্রবেশ করে তার পরিবারের জীবনযাত্রার মান উন্নত করতে পারে? (টিক চিহ্ন দিন)

ক্রমিক নং	হ্যাঁ	না	আংশিকভাবে সত্য	কোন রকমে জীবিকা নির্বাহ করতে পারে	আর্থিকভাবে স্বচ্ছল জীবন যাপন করে	সমাজে অবদান রাখে	মন্তব্য
১.							

৮। উত্তর যদি হ্যাঁ হয়, তবে তিনি পরিবারে বা সমাজে কোন ধরণের ভূমিকা বা অবদান রাখতে সক্ষম হন, তার সম্পর্কে একটু ধারণা দিন (টিক চিহ্ন দিন)

ক্রমিক নং	প্রতিবেশীকে সাহায্য করেন	গরীব মানুষকে	সমাজ উন্নয়নমূলক কাজ করেন	নিজস্ব বাড়ি আছে	নিজের গাড়ি আছে	ব্যবসা প্রতিষ্ঠান আছে	খুব বিলাসী জীবনযাপন করেন	মন্তব্য

		সহায়তা করেন						
১.								

৯। উত্তর যদি না হয়, তবে কেন তিনি পরিবারে বা সমাজে অবদান রাখতে পারেন না, তার কারণ কি? (১টিক চিহ্ন দিন)

ক্রমিক নং	সামাজিক মর্যাদা না থাকা	জামতা না থাকা	স্বচ্ছলতার অভাব	টাকার অভাব	চাকুরির ধরণ সম্পূর্ণ আলাদা	অন্যান্য (যদি থাকে)	মন্তব্য
১.							

১০। আপনার এলাকায় কর্মরত ডিপ্লোমা ইঞ্জিনিয়াররা সামাজিক উন্নয়নে কী কী ভূমিকা পালন করেন, তা একটু উল্লেখ করুন (১টিক চিহ্ন দিন)

ক্রমিক নং	রাস্তাঘাট তৈরি/ দালানকোঠা নির্মাণ	রাস্তাঘাট মেরামত	পানীয়জল সরবরাহ	বিদ্যুৎ সরবরাহ	টেলিফোন সংযোগ	ব্রিজ কালভার্ট তৈরি	স্যানিটারী ল্যাট্রিন সরবরাহ	সেচ ব্যবস্থা	অন্যান্য (যদি থাকে)	মন্তব্য
১.										

১১। আপনি কি মনে করেন, কারিগরি শিক্ষা লাভ করলে একজন চাকমা ছাত্র/ছাত্রী সাধারণ শিক্ষায় শিক্ষিত ছাত্র/ছাত্রীদের চেয়ে আগে চাকুরি পেতে পারে? (১টিক চিহ্ন দিন)

উত্তর : (ক) হ্যাঁ (খ) না

১২। উত্তর যদি হ্যাঁ হয়, তবে তার কারণ কী? অনুগ্রহপূর্বক কারণ লিখুন।
উত্তর :

১৩। উত্তর যদি না হয়, তবে তার কারণ কী? অনুগ্রহপূর্বক কারণ লিখুন।
উত্তর :

১৪। চাকমা ছাত্র-ছাত্রীদের কারিগরি শিক্ষায় কম অংশগ্রহণের জন্য কী কী কারণ থাকতে পারে বলে আপনি মনে করেন?

উত্তর : (১)

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(২)

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(৩)

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সাক্ষাৎকার প্রদানকারীর স্বাক্ষর

সাক্ষাৎকার গ্রহণকারীর স্বাক্ষর

Appendix-2

Table-1:

Ethnic minority people, areas they live in and their numerical strength in Bangladesh (estimate – 1995).

Sl. No.	Ethnic minority Identity	Places they are found	Numerical Strength	Remarks
1	Chakma	Chittagong Hill Tracts, Chittagong, Cox's Bazar	300,000	Widely known and most influential ethnic minority in Bangladesh Government Estimate in 239,419 (1991)
2	Tripura Including Riang	Khagrachari, Bandarban, Rangamati, Chittagong Dt, Sylhet, Cumilla, Chandpur	85,000	Government Estimate is 61,129 (1991)
3	Marma	Chittagong Hill Tracts, Chittagong, Cox's Bazar	1,70,000	Government Estimate is 1,42,334 (1991)
4	Bawm	Bandarban	8,000	Government Estimate is 6,978 (1991)
5	Usui	Chittagong Hill Tracts	7,292	Government Estimate is 5,232 (1991)
6	Chak	Bandarban	2,196	Government Estimate is 2,000 (1991)
7	Khumi	Bandarban	2000	Government Estimate is 1,241 (1991)
8	Kheang	Rangamati, Bandarban	5,000	Government Estimate is 1,950 (1991)
9	Lushai	Rangamati, Bandarban	1,000	Government Estimate is 622 (1991)
10	Mro/Murong	Rangamati, Bandarban	30,000	Government Estimate is 22,041

Sl. No.	Ethnic minority Identity	Places they are found	Numerical Strength	Remarks
11	Pangkho	Rangamati, Bandarban	3,604	Government Estimate is 3,227
12	Tanchangya	Rangamati, Bandarban	20,000	Claim to be real Chakma
13	Rakhain	Patuakhali, Barguna, Cox's Bazar Bandarban	35,000	They claim their numerical strength to be 150,000
14	Garo	Greater Mymensingh	1,00,000	Some claim their number to be not less than 120,000 within the last few years there has been a big influx of Garo in Dhaka City one survey puts it to 3,000.
15	Santal	Rajshahi, Dinajpur, Rangpur, Bogura, Gaibandha, Thakugaon, Panchagar, Nator and Sylhet tea garden.	1,65,000	Santal is the most influential tribe in North Western in Bangladesh some estimate their number to be 2,00,000.
16	Oraon	Greater Rajshahi, Dinajpur, Pabna, Sirajgonj, Mymensingh, Rangpur, Sylhet Tea garden.	7,500	Some feel Oraon population in Bangladesh is 120,000.
17	Hajong	Greater Mymensingh, Sunamgonj of Sylhet.	9,500	
18	Banai	Greater Mymensingh	2,000	
19	Monipuri including Vishnuprya	Greater Sylhet and Dhaak	45,000	Most advance among the ethnic communities, they do not want to be calling aboriginal.
20	Khasia and Jaintia	Greater sight	26,000	Jaintias are Bangali oriented
21	Munda	Greater Rajshahi, Dinajpur, Bogura, and sight	25,000	
22	Paharia	Greater Rajshahi, Dinajpur, Bogura, Pabna and Kustia	10,916	
23	Dalu	Greater Mymensingh	2,000	
24	Mahatto (Kurmi)	Dinajpur, Sirajgonj, Pabna, Bogura, Joypurhat, and Rajshahi	65,000	

Sl. No.	Ethnic minority Identity	Places they are found	Numerical Strength	Remarks
25	Mahali	Greater Rajshahi, Dinajpur and Bogura	15,000	
26	Singh	Greater Pabna	30,000	
27	Boshak	Greater Pabna	15,000	
28	Sora	Greater Sigh	1,000	
29	Kharea	Greater Sylhet and Joypurhat	5,000	
30	Khondo	Greater Sigh	5,000	
31	Assam (Ahomia)		2,000	
32	Gurkha		1,000	
33	Karmaker	Greater Dinajpur	60,000	
34	Paban	Greater Rajshahi		
35	Rajooar			
36	Mikhir			
37	Lahar	Greater Rajshahi, Bogura		
38	Turi	Greater Rajshahi and Dinajpur		
39	Bhumali	Greater Rajshahi,		
40	Bhoomij	Greater Rajshahi and Dinajpur		
41	Bhuiy	Greater Rajshahi		
42	Muriar	Greater Rajshahi	Number is estimated to more than 65 thousand	(Most of their tribes were found). In survey of greater Rajshahi they may be found in other districts. Their total no may be 65 thousand.
43	Ramdas	Greater Rajshahi		
44	Ker	Greater Rajshahi		
45	Hari	Greater Rajshahi		
46	Khaura	Greater Rajshahi		
47	Teli	Greater Rajshahi		
48	Lora	Greater Rajshahi		
49	Ruthia	Greater Rajshahi		
50	Musor	Greater Rajshahi and Dinajpur		

Sl. No.	Ethnic minority Identity	Places they are found	Numerical Strength	Remarks
51	Raj	Greater Rajshahi and Dinajpur		
52	Patro	Greater Sylhet		
53	Bedia	Sirajgonj		
54	Bakti	Sirajgonj		
55	Bagdi	Kustia and Natore		
56	Kole	Rajshahi		
57	Bura	Rajshahi		
58	Pal	Rajshahi		

Source: COMDECA census report, SHED Publication, 1995.



Figure-3: FGD Meeting at Roads & Highway's Conference Room, Cox's Bazar.



Figure-4: FGD Meeting at Tarum Community Centre, Khagrachari.



Figure-5: FGD Meeting at Roads & Highway's Conferecne Room, Cox's Bazar



Figure-6: FGD Meeting at Roads & Highway’s Conferecne Room, Cox’s Bazar



Figure-7: Jhum cultivation in the hills(Photo credit: Internet)



Fig-8: Harvesting Jhum paddy(Photo credit: Internet)



Fig-9: Temporary residence near Jhum(Photo credit: Internet)



Fig-10: view of a hilly area (Photo credit: Internet)