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HUMAN DIMENSION OF DEVELOPMENT AND CLIMATE CHANGE: NEEDS NEW MODEL OF DEVELOPMENT?

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Abstract

To make life more comfortable, since ages, man has been altering the nature in the name of development. In the era of rapid industrialization consciously or unconsciously, he unscientifically utilize the natural resources and resulting into the major problems of 21st century including environmental pollution and global warming on the one hand and creating more problems to the human beings by ignoring human dimensions which get accelerated in context of climate change. Hydroelectric power development is one such developmental initiative which is sine-quo-none of any development and instrumental to achieve desired goals of any society or any economy. But such developments at what cost? Human dimension of such development has remained unaddressed and today it is becoming alarming. This question has been analyzed in present paper.

The present paper is based on micro study, exploratory in nature, conducted in 22 villages by dividing in 5 research clusters and interviewing 200 respondents in NHPC owned Chamera-I power project. It is an analytical analysis of deprivations received because of it's construction and put the people in psychological trauma. The impact can be divided in two broad categories; one, project affects people (PAP), who got displaced and got compensation, jobs in NHPC and resettled somewhere in the part of the district or state. The second category; who have not affected as per the revenue/policy document of NHPC and can be called as Not Project Affected People (Not-PAP). But in real sense, they are the people who are facing ill effects of this developmental activity and at present, they are dying every moment, every hour and every day and moreover, their concerns have never listened and never answered by state govt. as well as by the executors. To address the issue existing Lobbyist Pressurized Model of development should be replaced by Benefit Sharing Participatory Model of development

Keywords*: Development, Hydroelectric Power Projects, Displacement, Psychological trauma, PAP & Not-PAP, Benefit Sharing Participatory Model.*

Introduction

Existing literature defined the concept of development as value laden and as a process of desired change. The changed which have been desired and required at national and international level is the main thrust of development. It further implies the process of planning development, which is required for any futuristic approach of development. Among many such approached of development, water based approach has got attention of policy maker, which become more imperative in context of climate change, water based development is not an exception. Water is ever-increasingly becoming the single most precious and essential item that sustains life in this world, enabling all humanity as well as nature to survive. We perceive water as a crucial element of civilization. In this regard, the Turkish proverb *"Water brings life"* has a special place in our culture. Without doubt, the future of life and civilization on earth depends on water. Year 2009 has been recorded as a year during which all the progress made on water-related topics since the Rio Conference, Agenda 21, UN Millennium Development Goals and the 2002 Johannesburg Plan of Implementation has been reviewed and new initiatives discussed. The year 2009 will also mark the halfway point of the 2005-2015 UN Decade of *Water for Life.*

Since the inception of human civilization man has been involved in make his life more comfortable and in this process, he aims to achieve rapid economic growth which further planned and implemented number of developmental projects at state as well as at national level. These projects include construction of mega irrigation dam, power project, industries, mining operation etc. undoubtly, these projects have provided irrigation to thirsty lands, energy for growing economies on the one hand and displaced millions of people and affected lives of people on the other. Various studies confirmed that more than 75 percent displaced people have not rehabilitated and their income and livelihood has not restored to earlier conditions (Fernades; 1991).

Initially development means fulfillment of basic needs to the optimum level, but it's meaning has been changing over the period of time. Development is a value-laden concept which involves the process of *desired change*, which is not new to human society, it's concern has been there since time memorial. After world-war-II, with the emergence of new nations it was required to tackle the prevailing poverty and to cope the unemployment problem. But

during that period leadership of third world has realized that irrespective of satisfactory economic growth, *trickle down* effects failed to incorporate other aspects of development particularly human dimension has been considered (SL Sharma, 1986).

After the independence, planned development has been started in form of five-year plan and new factories, mega dams, mining etc. called as *temples of modern India* (Kaviraj, 1996). Gradually with the coming up of these projects, they become *temples of doom* for the uprooted people in the name of development. Because of the fact that they have changed the land-use pattern, water, forest, natural resources and deprived off the people who are living in the vicinity of these developmental mills and forced them to be displaced (Goyal; 1996). There is no official statistics

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about the displacement (Jyanta; 2006), few conservative estimates between 1951-90 suggested that more than 213 lakh people have been displaced by various development projects (Fernades and Paranjepe; 1997), however these figures are based on PAPs having revenue record and if Not-PAP includes in estimate then it would increase many fold (Slariya; 2011), Kothari (1996) called it secondary displacement and he estimated it up to four crores in India (Kothari; 1996). The irony is the people displaced by dams (164 lakh) is huge number and thousands of people are still struggling for justice and waiting to be re-settled even after more than 50 years of dam construction and their displacement. Many eyes have been closed in the wait of justice. Following is the table which suggest displacement in India because of developmental initiatives during 1951-90:

Table1: Showing Number of People Displace because of Developmental Initiatives during 1951-1991

Developmental Initiative	***People Displaced(in lakh)***
Mining operations	025.5
Parks and wildlife	006.0
Industries	012.5
Dams	164.0
Other projects	005.0
Total	*213.0*

Source: (Fernades & Parnajapu, 1997)

Existing model of development: the existing model of development put more pressure on the resources and compelled the government to plan more developmental projects to meet out the growing need of the people. The need of any sort is to be fulfilled only by the exploitation of natural resources which are less in number and to be finished very soon at the present pace of its utilization. Every natural resource has been heavily targeted for the exploitation.

During the course of study it has been observed and investigated that the most important ideas of alternative approaches have been emerged from popular struggles of affected people. Developmental and planning era has been evidenced by so many developmental struggles. People affected as well as native have been involved in such types of developmental struggles and struggled/ struggling for their dues. The only reason responsible for these struggles is that the concerns of local people either displaced or people who are living in the vicinity of developmental projects have been ignored in the process of decision making and implementation. The voices of the people coming from different movement advocates to strengthen the efforts, visions, plans and approaches of development so that the prevailed problems can be solved.

The growing need of energy and electricity has been increased with the development of civilization. In view of the present need lot of countries including India are suffering from severe shortages and even crises. All of them face very real and very difficult questions of how to meet these needs. Energy generation through hydropower dam in the Himalayas has been found as a solution to meet a substantial part of these requirements.

Undoubtedly, these projects generate thousands of units of electricity, but at what cost?

The cost in terms of economic calculation has been calculated by the policy makers as well as by the executors and these calculations has been made public. But at the same time, the cost of the projects in terms of social, environmental, livelihood, health, psychological and cultural impacts, impacts on the lives of local indigenous people living in the remote valleys of the Himalayas have always been ignored. The projects in Himalayan region are threatening the identity and culture.

Developmental projects-under the pressure of lobbyist:

Projects are being pushed forward under the pressure of lobbyists, unmindful of these social, environmental and cultural impacts, impacts that have not been fully and properly assessed.

No say in the decision making:

Unfortunately, the people who have been/will be most severely affected have had little say in the planning, design and implementation and have no place in the decision-making structures. And social, environmental, psychological and cultural issues as compare to financial and economic are not even important, so that they may be taken into considerations in the decision-making process.

The big dam planners seems to have adopted an ostrich-like attitude to the impacts of dams on the Himalayan region.

Invitation to disaster:

Pushing ahead such a massive dam-building program in the fragile Himalayan region without proper social and environmental assessments and safeguards, and ignoring the likely impacts of these projects including climate change, may have catastrophic and unanticipated consequences. The recent devastation caused by the breach in the embankments of the KosiRiver in Nepal and the subsequent change of course that wreaked havoc with the lives of millions of people is an indication of what lies in store if we undertake far-reaching interventions in sensitive regions of the Himalayas without fully evaluating the possible consequences.

Evidences of Developmental projects: Case studies from Northern Western Himalayas

Lobbyist pressurized model of development based developmental activities have been planned/executed and are being executed in northern western Himalayan region since 1980s. Under this model of development Himalayan region has been heavily targeted for planned development as need of the hour is to achieve 10% targeted growth in coming decade and it

is imperative to electrify thousands of houses and provide energy to hundreds of industries. The policy makers are calculating it in economic term and forgetting the other aspects/dimensions which should be taken care of. Existing model of development is not considering the local issues and primarily focusing on national interest only (vital interest) but the fact is, people who are living in the vicinity of such developmental mills are being ignored at the time of planning as well as execution. People are being compelled to push to psychological trauma and compelled them to be traumatized for whole life and generations to come. They are facing problems which they never dreamt of, they have been living with dignity since ages, but developmental activities has doomed and dooming their lives, which is the outcome of existing model. To prove this, case studies from Himachal Himalayas in ravi basin has been conducted, which is as follows:

Status of Hydro industry in Himachal Pradesh:

The hydro-electric power potential in Himachal Pradesh is estimated at 20,386 MW, which is 24.27% of India's total potential. Of this, 6,045 MW [29.65%] has been harnessed so far, 2720.5 MW [13.34%] is under execution. Techno-economic feasibility studies are complete for 3,011 MW and in the process of completion for 3,671.5 MW. Survey has been completed for 4187 MW. Him Urja, an agency administers micro-hydel projects in the state (table: 2).

Table: 2 Showing Pressure of Hydro-power generation in Himachal Pradesh

Basin	***Currently operational (in MW)***	***Under Execution (in MW)***	***TEFR Ready (in MW)***	***TEFR not Ready (in MW)***	***Survey completed (in MW)***	***Total (in MW)***
Yamuna	0211.52	0110.00	0231.00	0000.00	0039.00	0591.52
Satluj	3150.25	1280.50	1402.00	2227.50	1360.50	9420.25
Beas	1634.50	1330.00	0736.00	0856.50	0025.00	4582.00
Ravi	1043.50	0000.00	0642.50	0348.00	0260.00	2294.00
Chenab	0005.30	0000.00	0000.00	0240.00	2503.00	2748.30
Total	***6045.07***	***2720.50***	***3011.50***	***3671.50***	***4187.50***	***19636.07****

***small/mini/micro projects of Himurja (750MW) are not included*

Source: author's compilation from HP State Electricity Board

The Satluj basin is targeted for heaviest exploitation with 9420 MW projects spread over 37 locations. Beas basin comes next with 4,582MW, spread over 26 locations. Ravi and Chenab basins in chamba district, account for 5042MW spread over 46 locations together. Yamuna basin straddles two states (Himachal and Uttaranchal) and accounts for 591.5MW spread over 12 locations.

Displacement because of Hydroelectric Power development:

As it has been depicted in table: 1, Satluj, Ravi and Beas basin have been heavily targeted (more than 72%) for hydro power generation. The first power project known as Bhakhra was constructed way back in 1970s on Satluj basin, Pong dam on Beas and Chamera-I (1990s) on Ravi were among the mega projects in the state. First two projects were multi-purpose and responsible for huge displacement and turn Punjab into green Punjab and fulfill the grain need of the country, while third one is producing only electricity. Following are the major power projects which displaced families:

Table 3: Showing Displacement because of some Hydro-Projects in Himachal Pradesh

Sr. No.	***Name of Power Project***	***River Basin***	***No. of Displaced Families***
1.	Bhakhra Dam	Satluj	36,000
2.	Pong Dam	Beas	80,000
3.	Chamera-I*	Ravi	01554
4.	Chamera-II	Ravi	00093
5.	Chamera-III	Ravi	00157
	Total	***03***	***1,17,804***

Source: author's compilation from different sources.

**studied for the purpose of this paper, paper is an essence of recently completed UGC Minor Research Project.*

As per table above 1,17,804 families have been displaced because of the constriction of only five projects in Himachal Pradesh, though there is no official record of displaced families and more importantly, in websites, *executors shows their achievements not the concerns of oustees, even not enlisted*. Even after the execution of first mega project in the state (in 1962, survey for which were conducted in 1948 immediate after independent) and was second in

India after Hirakund (Orissa), to-date state has not listed even the displaced people. However, some data is lying with revenue department at district level which is also not possible to access (researcher got the number only with great difficult after convincing the authorities that the data will be used for the research purpose and is mandatory to complete the assignment). After Bhakhra, pong dam just 145 kms in Beas basin in the downstream, was created in 1974 by displacing 80,000 families, totaling 1, 16, 000 families were displaced to convert *Punjab into Green Punjab* and contributed a lot to green revolution and these multipurpose dams solved the problem of food in India.

In Ravi basin chamera series of dams constructed during the period of 1994 to 2012 displaced 1801 families to generate 1071 MW (Chamera-I, 540; Chamera-II, 300 and Chamera-III, 231 MW). Some families got compensation and resettled somewhere else in the district, but the maximum got their dues with the invention of Honb'le High court of Himachal Pradesh. If we consider minimum 4 members per family (mother, father and two children), then number would multiply to 4, 71, 216 (1, 17, 804 x 4= 4, 71, 216) which is a considerable number in hilly states like Himachal.

Rationale behind the selection:

To see the impact of hydroelectric power generation on the lives of people after commissioning the power project, Chamera-I power project owned by NHPC in Chamba district of Himachal Pradesh has been taken. Rationale behind the selection of this project was, 29-km long reservoir and village situated on the bank of reservoir, who are affecting badly with the ill-effect of hydro power generation. The villages situated on both sides of reservoir have been interviewed by the researcher. Generally it is a fact that only displaced got effect of the construction of power projects because they have been displaced and compelled to left their native land and all sort of belongings which they are using since their birth (even before their birth all these are being used by their forefathers and it is very difficult to leave which belongs to them and very difficult to re-settled somewhere else). The people who fall in the demarked geographical area, were called as PAP but people who reside even at the distance of less than one meter are compelled to face the ill-effects of power projects and does not fall in the category of PAP, researcher call them Non-PAP. To see the impacts on the lives of Non-PAP, 22 villages diving in 5 categories and selecting 200

respondents (table: 5) have been selected to see the impact on human dimension. However, many studies have been conducted by the different scholars round the world, but study of human dimension on such developmental projects in western Himalayan region is new (atleast not known to the researcher). The study has been initiated with hope that it will prove beneficial to the policy makers and executor to resolute the conflictual situation arises and moreover will address the unlisten concerns of the Non-PAP.

Table 4: Category of Respondent wise Distribution of the Respondents

Category of Respondents	***No. of Respondents***	***Percentage***
Displaced	075	37.50
Native	125	62.50
Total	*200*	*100.00*

For minute exploratory study, affected people of Chamera-I have been selected. 200 respondents belonging to both categories i.e. displaced and native have been interviewed by using following methodology.

Methodology:

Being a primary study, conducted in NHPC owned power project i.e. Chamera-I of 540 MW, two categories of respondents have been interviewed (table: 4). On the basis of result of earlier project completed by the research *(Ecology of Power Projects: An Environmental Study, submitted to UGC in 2006)*, the newly investigated category of the affected people i.e. Not-PAP have been studied by giving them name of *native* in this project, because it has been *observed and concluded earlier that this category is worse affected as they are living in the vicinity of this developmental project and facing the ill-effects.* The displaced have left their villages and got employment and resettled somewhere else because they had legal PAP title, but after a demarcated line by the executors with the consultation of state revenue department (who are in-charge of providing compensation and responsible for their rehabilitation) *[Slariya, 2006]*. Villages situated in both sides of 29 km long reservoir have been interviewed in category of native and villages scattered in other places in the district in category of displaced. Being an exploratory and descriptive study, both primary and secondary data have been used by administrating interview schedules on 200 respondents. Collected data codified, tabulated, interpreted. This paper is an essence of the findings particular related to

hypothetical variable i.e. *people are satisfied with the development being brought because of power projects in Ravi basin.* The respondents in different categories have been interviewed and analyased as per the following scheme:-

Table 5: Table Showing Classification of Village wise Distribution of the Respondents and Number of Villages

Sr. No.	***Classification of the village***	***Number of villages***	***Number of Respondents***	***Percentage of total sample***
1.	Village situated in the vicinity of reservoir	04	66	33.00
2.	Submerged villages in the reservoir	10	82	41.00
3.	Village situated in the downstream	04	29	14.50
4.	Village situated in the vicinity of reservoir where the oustees have been resettled	03	13	06.50
5.	Village where oustees resettled	01	10	05.00
	Total	***22***	***200***	***100.00***

Result, interpretation and Conclusion (Psychological Deprivation in Chamera-I)

The deprivations received by the displaced as well as the people who are living in the vicinity of the reservoir have received a considerable amount of trauma after the installation of this project. *People, whose land has been acquired by the executing agency way back in 1990s, are still waiting for the compensation*. The impact on the local people can be divided in two broad categories; *one, PAP,* who have got displaced and got compensation, jobs in NHPC and resettled somewhere in the part of the district or state. The *second category* is of those who have not affected as per the revenue/policy document and can be called as *Not-PAP.But in real sense, they are the people who are facing ill effects of this developmental activity and at present, they are dying every moment, every hour and every day and their concerns have never listened and never answered.* However the first category has also received a considerable amount of impact on their socio-cultural milieu but the second category affected comparatively more than the first category.

To measure the impact (psycho-traumatic)and know the real pace of problem, four-point standardized tool i.e. extreme, severe, moderate and neutral has been used. Both categories of respondents i.e. displaced and native have been included in the study sample. Responses

received through this scale on different sample variables such as; *feeling at the time of displacement or living in the vicinity of reservoir; feelings of the respondents after being displaced;* ***s****ymptoms of trauma as indicators of trauma; measures to overcome from the symptom of trauma; measures taken by the respondents to overcome from the feelings of trauma* and each broad sample variable has been divided further in sub variables to get more acquaintance with the phenomena/ trauma being faced by the people of the chamera-I.

Table 6: Showing Feeling at the time of displacement/ by living in the vicinity of reservoir:

Sample Variable (s)	*Measuring Scale*				
	Extreme	*Severe*	*Moderate*	*Neutral*	*Total*
Feeling guilty of being citizen/ native of that area/place	128	35	16	05	184
Extreme fear of harm/loss	062	40	33	09	144
Insensibility in the emotions	060	44	21	12	137
Uncomfortable shaking	033	46	15	11	105
Chill (depress) or heart palpitations	033	40	21	09	103
Tension/ headache	051	39	15	09	114
Total score	*367*	*224*	*121*	*55*	*687*

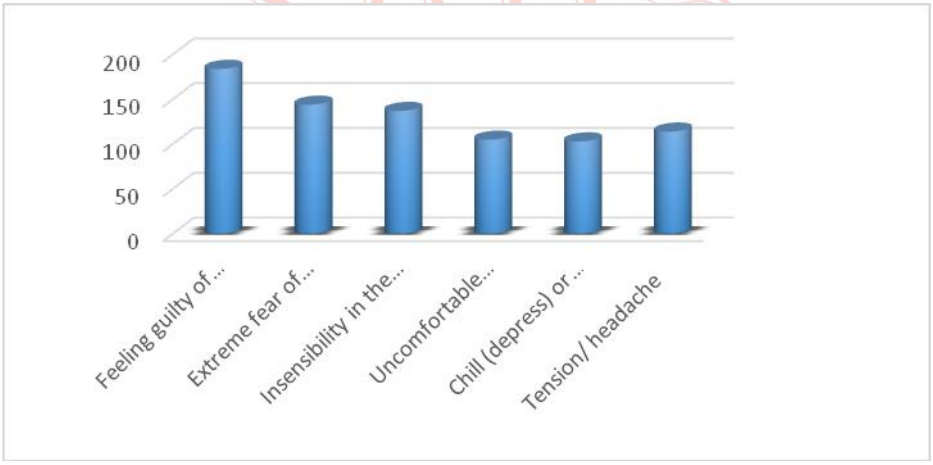


Figure 1: Showing total number of score of responses

As data in the above table: 5 indicated that in all six sub-variables people of the study area have experienced extreme situation scoring 367, which is highest and followed by this severe has scored 224, moderate 121 and neutral 55. These are the clear evidences that the people either displaced (interviewed at their new place of residence) or native, have been traumatized by the installation of power project i.e. Chamera-I hydroelectric power project, which is more evident from figure-1which shows that respondents are feeling guilty of being an Indian as they are not being listened and also having fear of loss, which further resulted into tension and headache

Table 6: Feelings of the respondents after being displaced/after the execution of Chamera-I:

Sample Variable (s)	*Measuring Scale*			
	Extreme	*Severe*	*Moderate*	*Neutral*
Staying away of daily activities	153	022	14	06
Staying away from places	075	040	10	13
Staying away from occupation	074	043	13	30
Feel detached from mother land and belongingness	039	028	23	10
Feel estrange from others	044	034	12	10
Irritability or outburst of anger	026	019	08	06
Lack of concentration	022	032	27	12
Total score	*433*	*218*	*107*	*87*

To assess the feelings of the respondents after being displaced or after the execution of chamera-I, seven sub-variables have been constructed i.e. staying away of daily activities, staying away from places, staying away from occupation, feel detached from motherland and belongingness, feel estrange from others, irritability or outburst of anger and lack of concentration. The responses indicated in the table, shows a decreasing trend from 433 points of extreme, 218 points to the severe and 107 points to the moderate and finally 87 score to the neutral. It shows that the people living in the vicinity or who have been displaced have

suffered very badly and have been the victims of this developmental initiative. It was the local people who got nothing but pains. The executors and policy makers may prove it beneficial in the vital interest of the nation, but without listening to their concerns it cannot be justified.

Table 7: Showing the Experience of the symptom (s) as indicators of trauma, after being displaced/living in vicinity of dam:

Sample Variable (s)	***Measuring Scale***			
	Extreme	***Severe***	***Moderate***	***Neutral***
Panic attacks	124	033	09	07
Depression	047	049	21	13
Suicidal thought/feeling	030	014	11	14
Drug abuse	038	040	32	14
Feeling of being estranged and isolated	044	050	19	14
Not being able to complete daily tasks	037	034	28	22
Total score	*320*	*220*	*130*	*84*

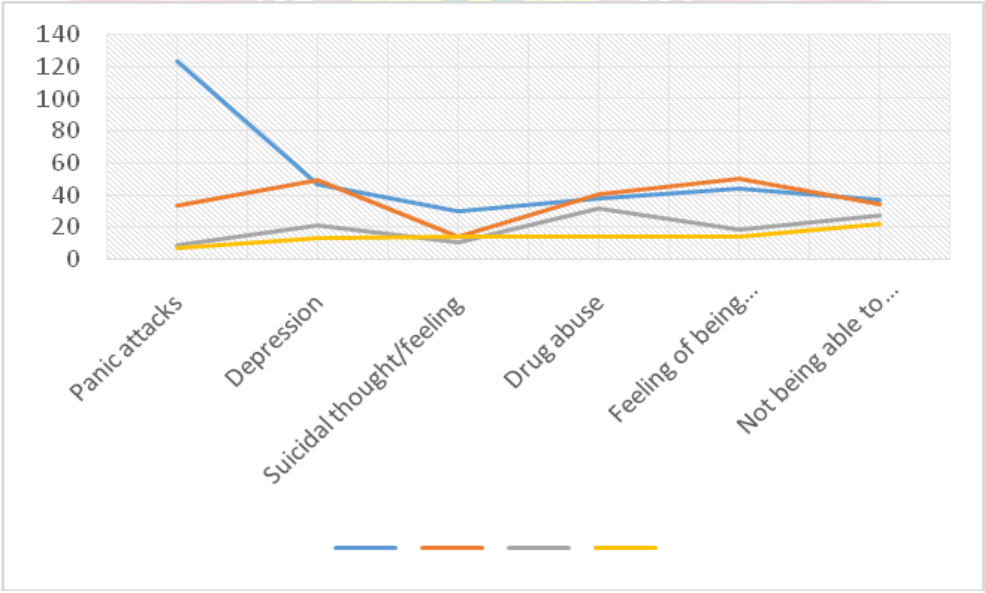


Figure 2 Showing the Experience of the symptom (s) as indicators of trauma, after being displaced/living in vicinity of dam

As data indicated in table 7 and in graphical presentation in figure 2, collected on the experience of the symptom (s) as indicators of trauma after being displaced or by living in the vicinity of reservoir of chamera-I suggested that both types of respondents i..e.*displaced as well as natives have been traumatized to the extreme end* followed by this they have been severely affected and then moderately and finally neutral response has got least score in the research data. To see the impact, six sub-variables have been identified in pilot survey and used in the research and recorded the responses on extreme, moderate, severe and neutral scales. In this variable the first point extreme has got 320 score, moderate 220, severe 130 and neutral 84, which shows the intensity of the problem.

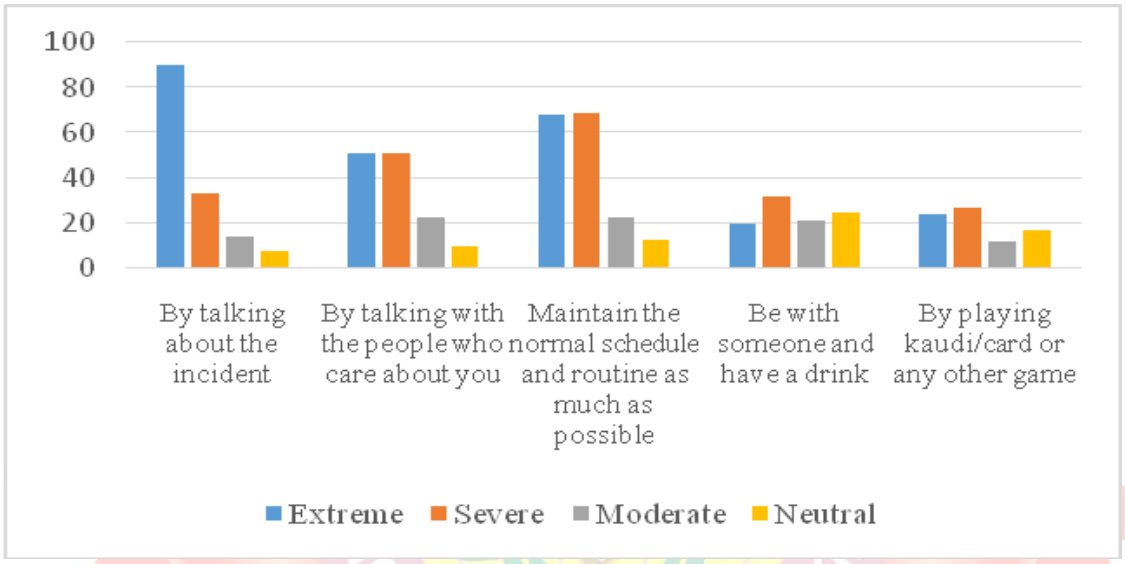
In other words this developmental activity has hammered the socio-psycho and cultural milieu of the study area and people have been affected very severely, they are without their traditional occupations, without their land, without their ways of earning of livelihood, without their neighborhood moreover without a system having a provision of eco-system services. The eco-system service which is being provided by the nature have been hammered and are no more now in study area.

Table 8: Measures taken by Respondents to Overcome from the Symptom (s) of trauma:

Sr. No.	*Measure (s) taken to overcome from the symptom (s) of trauma*	*Measuring Scale*				
		Extreme	*Severe*	*Moderate*	*Neutral*	*Total*
1.	By talking about the incident	90	33	14	08	145
2.	By talking with the people who care about you	51	51	23	10	135
3.	Maintain the normal schedule and routine as much as possible	68	69	23	13	173
4.	Be with someone and have a drink	20	32	21	25	098
5.	By playing *kaudi*/card or any other game	24	27	12	17	080
	Total score	*253*	*212*	*93*	*73*	*631*

As it is clear from the above table that sub-variable no.3 i.e. maintain the normal schedule and routine as much as possibleis the most preferable choice of the respondents and scored

173 points on four point scale. Followed by this sub-variable no. 1 i.e. by talking about the incident has scored 145 points and number 2 has scored 135 points and become third choice of the respondents. Remaining number 4 have been scored 98 points and lastly the sub-variable which indicate playing kaudi/card or any other game by the respondents as a measure to come over the trauma become last choice and scored 80 points. In other words, the most preferred measure as taken by the respondent is by maintaining the normal routine schedule and routine as much as possible, which has been suggested by the most of respondents to come over the situation.



F*igure 3: Showing Measures taken by Respondents to Overcome from the Symptom (s) of trauma*

Responses on the measure taken by the displaced or native people to overcome from the symptom (s) of trauma as indicated in the table 8 and figure 3, have been recorded by applying five sub-variables i.e. by talking about the incident, by talking with the people who care about you, maintain the normal schedule and routine as much as possible, be with someone and have a drink and by playing kaudi*/ playing card or any other game with the other people of the village. The total score scored by sub-variables on four point scale i.e. extreme, severe, moderate and neutral present a fracturedpicture. The rating point extreme has got 253 points, severe 212 points, moderate 93 points and neutral 73 points. The data suggested that because of the deprivations received by the people of the area they have developed a mechanism to mitigate the traumatic reasons at their own. The ethno-centric

methods/measures adopted by them are of high relevance for them and had successfully mitigated the traumatic conditions faced by them.

**Kaudi, is a game played with four players traditionally in hills since ages. It is just like chess of modern times. People in the hills are playing during their leisure and it is a healthy way of recreation as well as social cohesiveness and also a good mental exercise.*

Table 9: Showing the Feeling (s) of the Respondents at the time of displacement/ living in the vicinity of dam:

Sr. No	*Sample Variable (s)*	*Measuring Scale*				
		Extreme	*Severe*	*Moderate*	*Neutral*	*Total*
1.	Restlessness	136	28	11	08	183
2.	Frustration	081	35	15	10	141
3.	Irritability	067	33	07	12	119
4.	Trembling/ shaking	036	30	09	09	084
5.	Loss of interest or pleasure in others or in the most of the activities	048	33	13	08	102
6.	Feeling worthless	046	30	15	08	99
7.	A significant drop in the performance at work	029	20	10	09	68
8.	Suicidal thoughts/ feeling or self-harming behavior	018	09	16	14	57
9.	Feeling sad, helpless, hopeless most of the time	064	33	34	15	146
	Total Score	*525*	*251*	*130*	*93*	*999*

The data in table 9 indicate the *feelings of the respondents at the time of displacement or living in the vicinity of dam* of chamera-I. To have a close view of the situation, nine sub-variables, on four point scale have been measured. The responses received have been figured in the figure number 7 and 8, which shows diverse viewpoint of the respondents. The figure number 7 represents the total number

of score calculated on four point scale while figure number 8 shows the sum-total number of responses collected on the basis of four point scales (extreme, severe, moderate and neutral).

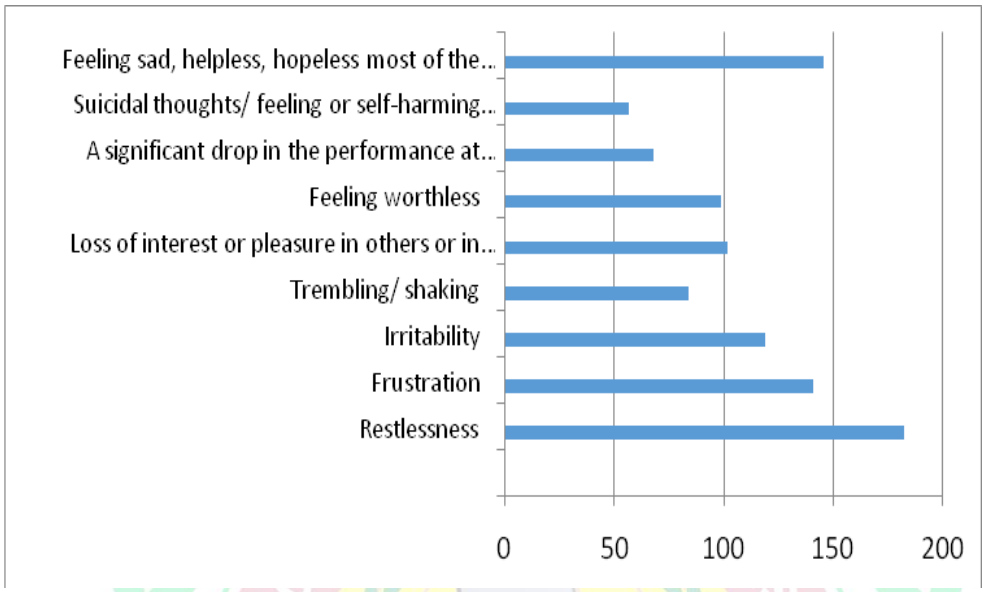


Figure 4: Showing response to the feeling of the respondents at the time of displacement/living in the vicinity of dam

As per the data indicated in the table as well as in the figure indicates that feeling of restlessness and feeling sad, helpless, hopeless most of the time have score maximum score i.e. 183 and 146 respectively. The feeling of frustration has scored 141 points, loss of interest or pleasure in others or in the most of the activities 102 points, feeling worthless 99 points and significant drop in the performance of work has scored 68 points.

Overall, it can be stated that the respondents in the study area have been traumatized and the feeling of trauma is being reflected through the feeling as mentioned in the table as well as in the figure. The respondents feels restless and sad, helpless and hopeless most of time after being displaced as well as by living in the vicinity of reservoir of chamera-I. This developmental activity has *brought pains to the people of the area not prosperity*. It might have brought electricity/ prosperity to the people, who are living in the far flung areas, far away from the study area, but it brought only pains to the local people and they are bearing the ill-effects of this developmental initiative of the government.

Table 10: Showing the Measures taken by the Respondents to Overcome from the feelings of Trauma:

Sr. No.	***Sample Variable (s)***	***Measuring Scale***				
		Extreme	***Severe***	***Moderate***	***Neutral***	***Total***
1.	Trembling*	134	26	14	06	180
2.	Shaking	062	32	15	06	115
3.	Crying	064	37	13	09	123
4.	Sweating	040	33	17	09	099
5.	Breathing Deeply	049	41	17	08	115
6.	Laughing	034	23	17	08	082
7.	Just Forget it	034	36	19	16	105
8.	Being Strong	059	25	16	17	117
9.	Taking a Pill	011	07	10	23	051
	Total score	*487*	*260*	*138*	*102*	*987*

**to shake involuntarily, as from anger; quake; here this term has been used to indicate one of the copping mechanism in which respondent feel shaking out of anger and try to restore themselves in situation of helplessness against the powerful corporate (NHPC) and by being a small displaced or native they cann't do anything and compelled to live in such situation.*

Coping mechanism plays an important role to mitigate as well as to cope the situation arisen. To see the coping mechanism of the respondents' nine sub-variables have been measured on four point scale (extreme, severe, moderate and neutral). As indicated in table 26 and presented in figure 9 and 10, it is evident that respondents have taken trembling as most preferable mechanism and this measure has scored 180 points, followed by this crying has scored 123 points, shaking and breathing deeply 115 points each, while laughing has scored 82 points, just forget mechanism has scored 105 points, being strong 117 points and use of medicine/ pill has scored 51 points. In other words it can be stated that the different mechanism has been adopted by the respondents to cope the situation. Age factor plays an important role in the adaptation and mitigation mechanism, particular the elder member of the

families has been the worse victim, because he has been the witness of the situation since its inception.

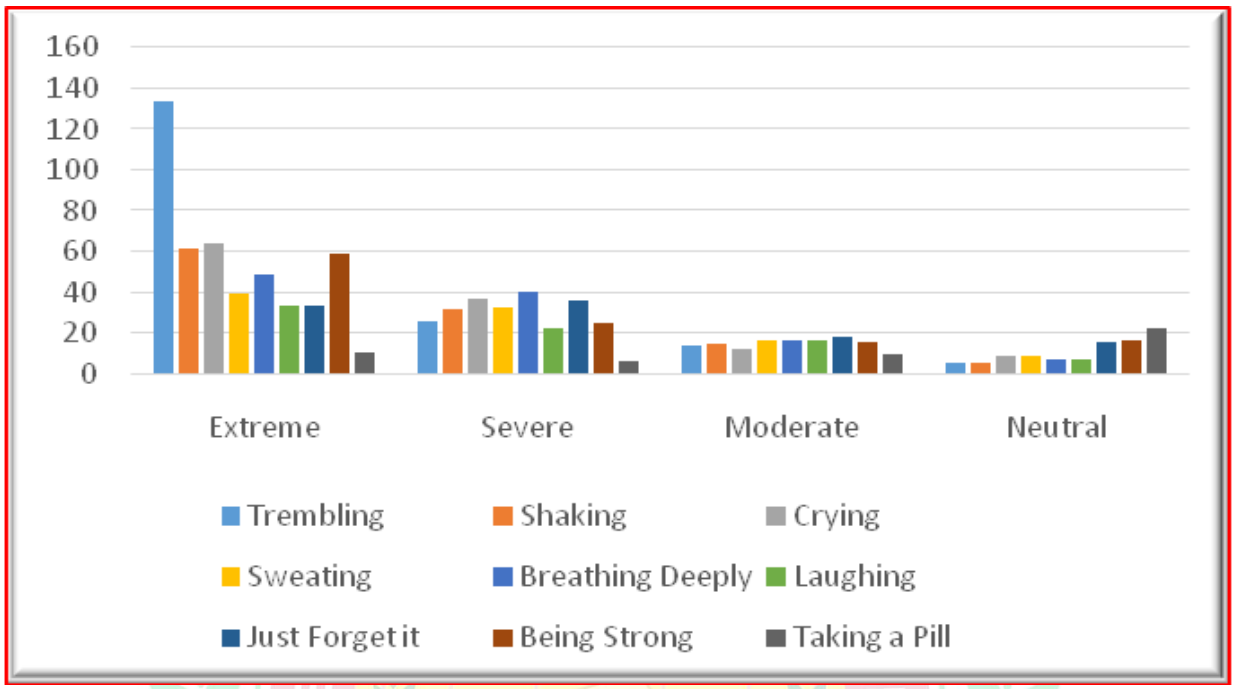


Figure 5: Showing the Measures taken by the Respondents to Overcome from the feelings of Trauma

As the bars of the figure 5 indicates that trembling has scored maximum score on extreme scale of measurement followed by this shaking and crying and being strong have been the preferable choices of the respondents to cope the situation. Breathing deeply, just forget, crying, shaking have been the second preference as a coping measure of the respondents on severe point of measurement, while moderate has the third and neutral has been fourth choice of the respondents as a coping measure to mitigate and win the situation.

However, these all the efforts which have been taken by the respondents and analyses by the researcher by applying a standardized tool of investigation but the real pace of the problem is only known to the people who are either living in the vicinity of the reservoir or waiting for the justice after sacrificing everything. On the one hand, displaced people today are with empty hands, empty pockets, without social networking and in absence of social fiber, they are trying to make their worth in the new place of their residence and on the other, native are facing ill-effects and dying every moment as their cattle are not safe, their belonging are not safe, they are victims of water-borne diseases, mosquitoes are making their life hell, they are

deprived off all eco-system services, there are no water-mill at present where they can grind their grain, there are no pasture where they can graze their cattle, the increased temperature in summer and cold/fog in winter are making their life hell etc. all these situation pulled them in psycho-traumatic situation and compelled to say that it is nation's gain for local's pain.

Benefit Sharing Participatory Model: An Answer!

The above description emphatically stressed that existing model of development in hydro power development i.e. lobbyist pressurized model of development resulted into the deprivation for the people, unscientific exploitation of natural resources specifically and putting human survival at a stake in general. People living in the vicinity of these developmental mills are feeling deprived off of age-old traditions, customs, lost playground, watermills in specific and live supporting system in general. In short, existing model of development remains unable to safeguard the interests of the people as lakhs of people are waiting for justice even decades of commissioning of such developmental projects.

Why it is needed:

The whole dam building programme in each river basin in Himalayas needs a comprehensive review. The existing data suggested that an alternative approach/model is being required to fulfill the required energy need of any country in sustainable manner. The choices are not easy, and the process will be difficult because the decision to adopt such type of approach/ model is to be taken by the policy makers and by the leadership in the respective countries.

Involvement of local people in decision making:

The local people should be given the right to make their decisions and they must have a say in the decision making. They should be involved in the process by visiting the local sites, where the developmental project has been proposed. Every sacrifice made by them should be calculated and compensated before the commencement of any developmental project. The oustees as well as native of the area concern should be realized that they are the citizen of that country and their belonging are being required for national interest, so that have not to be traumatized.

The interests of the local people must be given priority along with national interests as they are the custodians of a treasure that is the common heritage of the entire world – the Himalayas.

Proposed model of development: The approach in my research is to find a strategy for long-term optimal benefit from natural resources promoting a sustainable growth path. Two questions appear:

First, how to utilize the resources, e.g. with what pace should the resources be exploited?

Secondly, how to get benefit from the exploitation of resources with the participation of local stakeholders, e.g. how should the earnings be used for the benefits of the local people as well as to sustain the local environment?

I propose to concentrate on Benefit Sharing Participatory Model of development (BSPM) as an answer to the existing Lobbyist Pressurized Model of development. Along with this I propose to include SIA (Social Impact Assessment), LIA (Livelihood Impact Assessment), PIA (Psychological Impact Assessment) and HIA (Health Impact Assessment), CIA (Cultural Impact Assessment) in EIA (Environment Impact Assessment). Environment does not mean physical environment, the term environment should be used in comprehensive manner. On the basis of these assessments, stakeholders of proposed developmental project should be involved in the process of decision making. Monetary benefits drawn out the developmental initiative should be shared with the affected as well as with the native people of the area concerned. A minimum percentage out of the profit earned should be agreed upon and be disbursed among stakeholders so that the real fruits of development can be reaped. I propose to develop a tool, through which above mentioned aspects can be measured and participation of the affected community can be ensured. This would help the decision makers to make better decisions when, where, and how to deploy the development initiatives in Himalayas as well as in any part of the world.

Conclusion:

On the basis of above statistical description, it can be stated that respondents in both categories i.e. displaced as well as native have been affected by the installation of Chamera-I power project. The assessment of psychological trauma which is being faced by the native is more painful as compare to the displaced. The native who are living in the vicinity of 29 km

long reservoir is situated just beside the dam are dying every minute, every day and seeing no hope for their solution in coming time, because they cannot leave their places of residence, as they don't have sufficient money to re-settled somewhere else by leaving their homes, land and belongings. This usually transformed in form of scapegoating and the family members including wife and children become the victims of the wrath of the bread-earner. It might be needed for the *Greater National Goods* but it is *proving doom* for the natives who are living there since decades.

It is emphatically recommended that the people whose names are not in the category of PAP because of the fact that *they are living just one meter from the demarcated line* or living at even less than one meter line, must be included in the category of PAP and all benefits must be given to them which are being given to displaced and should be included in the category of displaced or PAP. It is not the only case where such types of deprivations are being faced by the natives but the situation is almost alike in all development projects in India as well as in the world. Right from the inception of project, from planning phase to execution and afterward, native have never consulted and listened to their problems neither by executing agencies nor by the state/central government. They should be included in the process of rehabilitation so that they can feel that they are also citizen of India, because in the developmental process they have been excluded. On the basis of recommendations of many studies conducted worldwide in different socio-geographical and culture setting, including WCD studies, the concerns of the native must be listened and taken care of and to resolve/mitigate the situation, post-traumatic centre must be opened where people facing the trauma can be treated. At policy level, their concerns must be listened and resolved by visiting the local sites where such types of developmental activities have been either proposed or executed.

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