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Development Induce the Destruction in Changual: A Case Study

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ABSTRUCT:
Generally flood is a state of high water level along a river channel or on coast that leads to inundation of land which is normally submerged. Flood is a natural hazard which occurs in respect to heavy rainfall and it become a disaster which it inflicts heavy loss to life and prosperity. But in the case of Changual and few adjoining small village we cannot found the presence of any river or stream. Only the continuous heavy downpour and the stagnation of huge water by the high elevated NH 60 due to inadequate drainage system lead of water in the formation of devastating flood in those areas. This dreadful flood introduced by natural initiatives but its become devastating by human construction and physically, economically and socially brake down the village base. Therefore, the present paper intends development induce the destruction in Changual and its impact on Socio-economic environment. The present study is completely based on primary source of data and secondary sources of data of such as registered or unregistered data and various simple cartographic techniques and satellite imagery are used to analyze the study area with the concerned problem. Finally the question comes regarding the existence of Changual, i.e. what should be the future prospect of the inhabitance of Changual. In the one hand they become the victim of flood in 2008, in the other hand, in 2009 & 2010 the villagers suffered a lot by the less rainfall. So, throughout 3 to 4 years, the people of this area are suffering by a massive food scarcity. The present scenario is different. Now the people are in doubt that – will their cultivable land be their? This situation arises because the establishment of various industrial manufacturing firms. The newly establish firms exploit a massive amount of ground water by pump for their industrial use and now the entire region is suffering from drinking water problem. Now a dispute is going on regarding the capturing of cultivable land by TIL (Tractor India Ltd.)

KEY WORDS: *Development, Flood, Hazard, Potential of growth.*

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I. INTRODUCTION:

Provisions of quality and efficient infrastructure services are essential to relies the full potential of growth impulses surging throw the economy. In fact a well unit and coordinated system of transport plays an important role in sustain economic growth of a country. Transport involves physical movement of something between two places in other hand transport is a system in which passengers and goods are carried from one place to another development of cheap and efficient means of transport is necessary for the progress and development of an area and a nation in the broad aspect. Transport routes are the basic arteries of the country. Transport system is regarded as the sinews of the national economy and provides as very important link between production and consumption. The amount of the traffic measuring in a country is a measure of its progress.

Modern means of transportation and communication have not narrowed the physical gapes between the peoples of different countries but also have us closer mentally. So in the present day transport system become the index of development. But sometime development induce development induce the destruction. For instance, our study area (Changual and few adjoining small villages) which are situated just like the lap of NH-60, which helps in the stagnation of water in the rainy season. And cause the dreadful flood in that area. In October 2008, the devastating flood swallowed Changual by sudden stagnation of rain water obstructed by the NH-60. Before 2nd October 2008 the week received a heavy rainfall & finally on 2nd October the flood had been occurred by water stagnation. Recently, May 2020 the same situation occurs in this area.

II. LOCATION OF THE STUDY AREA:

The study area Changual is surrounded by various villages in all directions under Kharagpur subdivision. Lachmapur, Paparara –I, Chakmakrampur, Sankua, Sijua-Shimla, Kandarpapur, Charda, Ronapatna are situated in north, north-east, east, south-east, south, south-west, west, and north-west respectively. We study here the flood affected area by NH60 having extension 22°20.251'N, 87°23.459'E to 22°17.927'N,

87°23.773'E. The latitudinal and longitudinal extension of the specific study area is 22°19.881'N, 87°23.636'E to 22°19.869'N, 87°22.117'E. & 22°18.420N, 87°22.107E to 22°18.411'N, 87°23.816'E.

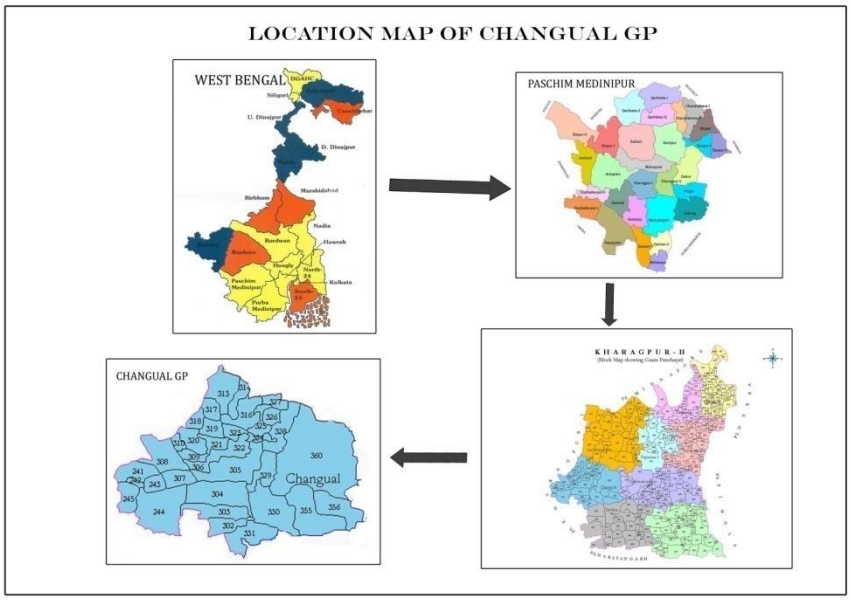


Figure: 1

III. STATEMENT OF RESEARCH PROBLEM:

3.1Physical problem statement: at a glance observation we do not see such a major physical problem of the study area. Over all this area is a flat plain, somewhere undulating with fertile edaphic characteristic. Experience of stream generally notified in the study area. Thus it shown that the region is free flood having medium ground water layer. But the little bit physical problems are sheen in the study area are the position of NH 60, which usually take position to be a constrain in the slope wise movement of the water. In the other hand the internal drainage system is also not so good. Which also create problem in drain out the water normally the previous climatic condition of the study area favorable but starting from few recent year back the more rain and dry spell is found alternatively.

3.2 Cultural problem statement: Culturally, this region is moderate. This area having few primary school, 1 high school etc to achieve higher education , the people have to move towards the township area. Earlier infrastructural and transport communication was too bad but now road network system developed more. Rather internal kutccha road become muddy during rainy season. Few culverts are also broken during rainy season.

IV. OBJECTIVES OF THE STUDY:

The prime aims and objects of the study area are as follows:

1. To ascertain the degree of intensity of and severity of the flood.
2. To understand the cause and socio-economic impact of the flood on the human society of the study area.

V. METHODOLOGY AND DATABASE:

The present study is completely based on some primary source of data and secondary sources of data of such as registered or unregistered data.

a. Door to door survey
b. Various govt. offices like B.D. office, Panchayet office
c. Census handbook etc.
d. Various simple cartographic techniques and satellite imagery are used to analyze the study area with the concerned problem.

VI. CAUSES OF FLOOD IN CHANGUAL:

The following causes may be held responsible for devastating flood in Changual. It may be pointed out that this factor should never be considered separately because it is the cumulative effect of several factors which ultimately cause severe flood.

6.1 Heavy incessant rainfall: Heavy rainfall for long period in continuation is the root cause of flood because immense volume of water thought high intensity rainfall is prerequisite condition for flood. Heavy incessant rainfall causes sudden increase in the volume of water. It may be pointed out that the occasional heavy rainfall resulting from strong rain storms can cause severe flood only in those regions which are characterized by seasonal region of rain fall or say seasonality of rainfall such as the region of monsoon climate. In the year 2008, Changual received continuous rainfall through out 7 days and finally the flood occurred.

6.2 Spell of extremely heavy rainfall: At the beginning of the rainy day, the people thought that it is a normal downpour, but the reality was different. With the march of day the magnitude of rainfall progressively increased and after 7 days the stagnant water started flow for they opposite direction of the slope and the 2nd October the area faced of devastation flood.

6.3 Siltation in internal drainage: The village changual have a internal drainage cannel starting from the Khirsor pond to the burning ground Bhodia Danga to the drain out the excessive water during rainy season. But year after year the cannel become silted and there was no such initiative steps to dredge the cannel. As a result of this during the year 2008 when the more amount of rain water came on it, then it become unable to tolerate such massive volume of water. So in conclusion we can draw a line that the siltation in internal drainage cannel felt a little bit for the formation of flood situation

6.4 Panachatra cannel embankment braking: the cannel embankment of Panachatra near to changual had been broken down during the rainy season by the pressure of water because some portion of this embankment was made by the sand bag. Thus when the massive amount of water came in the cannel, the capacity of the embankment crossed and huge amount of water mixed with the stagnant water by the NH 60 promotes the flood of dominant.

6.5 Leading role of NH 60: National Highway 60 or NH 60 is a National Highway of India that runs from the junction with NH 5 at Balasore to NH 2. It passes through Jaleswar, Dantan, Belda, Kharagpur, Salboni, Bishnupur, Bankura, Gangajalghati, Mejia and Raniganj.

Chandipur is 17 km (11 mi) from Balasore. The Sheoraphuli Kamarkundu Tarakeswar–Arambagh Road meets NH 60 at Bishnupur and the Durgapur–Bankura Road (State Highway 9) at Bankura. Total length of NH 60 is 305 km (190 mi) out of which 57 km (35 mi) is in Orissa and 248 km (154 mi) is in West Bengal.

NH 60 was constructed to developed the transport system and to cut down the traffic pressure in Kharagpur town but the construction of this road was such that it become a barrier in the flow of water as per the slope. As per the villagers opinion the engineers planed the road without keeping in mind the fact that how the water will be reduced in rainy season, if the road will have such a elevation. They also opine that there are not sufficient amount of culvert to release the massive amount of water. The difference between two culverts is near about 150 m. Thus in 2008, the rain water in addition to cannel breaking water logged by this gigantic road and the stagnant water swallowed the study area in the form of flood.

VII. SOCIO-ECONOMIC IMPACT OF FLOOD IN CHAGUAL:

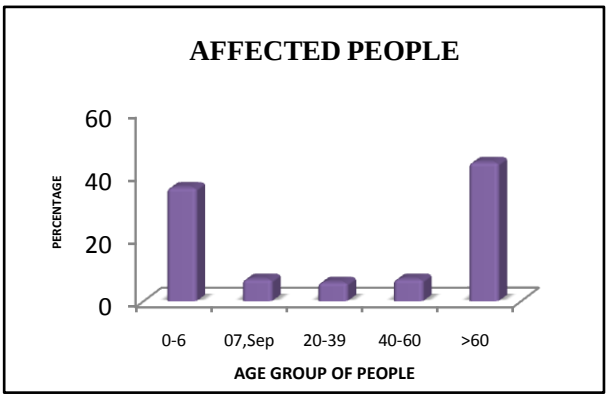
Flood have multipronged effects on human life. A more damaging their as their frequency intensity and magnitude increases with the passage of time. The most damaging effect of flood is the colonial loss, breakdown of communication, dislocation of transport system and disruption of essential services etc

7.1 Population Affected: The problem become much more highlighted when the people are much more affected. The people of Changual were both economic and social aspect due to this flood. Especially the small kids and children and the old person were feeling more panic then the youth, because they always suffered from insequently. Overall flood made the people of Changual helpless and hopeless.

Table -1: Population Affected

Age Group	Affected People (%)
0-6	36
7-20	7
20-39	6
40-60	7
>60	44
Total	100

Source: B.D.O Office, 2009

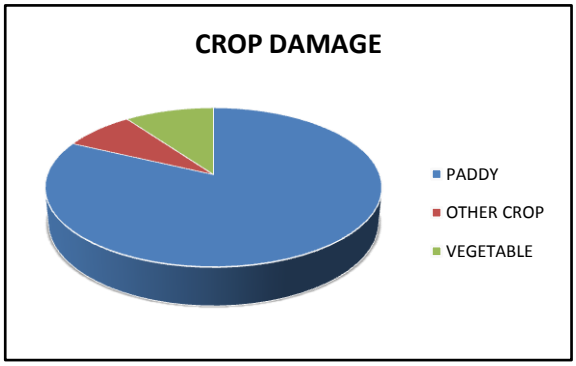


7.2 Crop Damage: Changual is especially based on rainy season cultivation. Paddy is the dominant crop here which is cultivated depending upon the monsoon rain in October 2008 when rain start just the eve of the flood, people thought that rain would help them in the cultivation. But reality was too different; the continuous rain becomes curse to them. By the continuous cats & dogs and the stagnation of water helped in retuning thus seeding of paddy side by side the vegetables which is generally grown to meets the house hold demand also spoiled by this flood.

Table-2: Crop Damages

Crop Type	Damage (%)
Paddy	82
Vegetable	10
Other Crop	8

Source: B.D.O Office, 2009

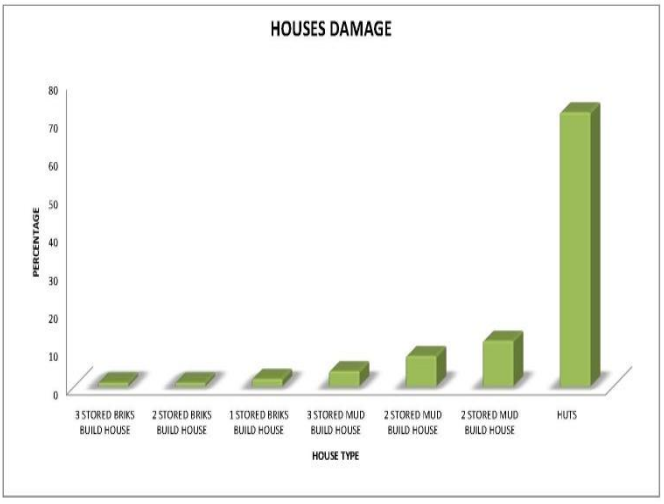


7.3 House Damage: the damage on account of speeding flow of water from the opposite direction of slope damaged various type of houses especially the mud build houses and the huts. The huts of two small villages Chotoara and Boroara are extremely damaged by this devastating flood. During flood this two scheduled tribe oriented village looking like the island in an ocean. Not only during flood, but also post flood period some houses also collapsed. As a result of this accident, the poor people, those who lived in the huts, thatched covered houses become homeless and took shelter in primary school, in different temple in some high elevated places etc.

Table -3: House Damage

House Type	Damage (%)
3 stored briks build	1
2 stored briks build	1
1 stored briks build	2
3 stored mud build	4
2 stored mud build	8
1 stored mud build	12
Huts	72

Source: B.D.O Office, 2009

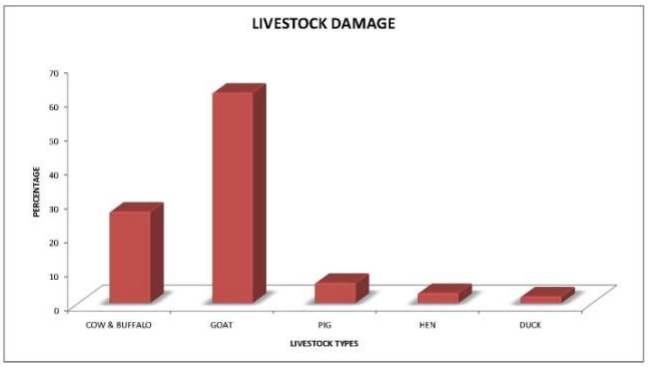


7.8 Livestock Damaged: As the owner of the houses become homeless, consequently their pets also lost their resident. During flood time few small calves, goat, also died and the owner provided their remaining alive pets in the high elevated places. During this time the man and pets live together without any discrimination. Most of the owner released there Ducks, Hens, Cock etc. After flood the cattle's also suffered by fooder due to the less production of straw and other paddy related fooder.

Table -4: Livestock Damage

Types of Livestock	Damage (%)
Cow & Buffalo	27
Goat	62
Pig	6
Hen	3
Duck	2

Source: B.D.O Office, 2009

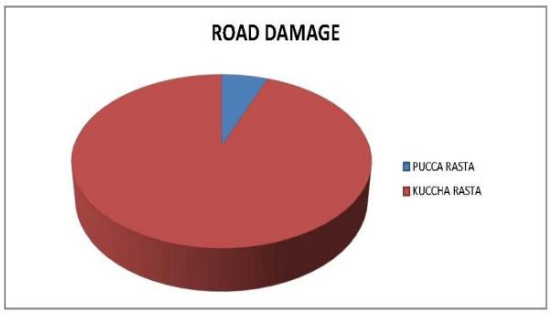


7.9 Communication Cut-Off: both of the modes of transport system (kutccha rasta & pukka rasta) were extensively effected by this flood. The water level was such in that period that in some places the water crossed the NH 60. Obviously the Jamna- Barbetia road was under the surface water level. It was quite difficult to identify the road from the water bodies. As a result of this situation the communication system was totally suspended. This situation leads to create the problem in provision of differential help.

Table -5: Damage of Road

Road Type	Damage (%)
Pucca Rasta	6
Kutcha Rasta	94

Source: B.D.O Office, 2009



7.10 Food Scarcity: as a result of this flood, the household storage become damaged, especially the dry paddy, rice, other vegetable item stored in the home. Thus the victim people become foodless and awaited for the Govt. Help them. Not only during flood, also after flood period people also struggled for food due to less production of paddy.

7.11 Economic Impact: due to this catastrophe the economic base of the inhabitant of Changual become very weak. In one hand they had lost their storage goods by the flowing of water, on the other hand the flood damaged the paddy cultivation. Simultaneously their houses also collapse.

7.12 Soil Erosion: this severe flood cause heavy rush of water and consequently do the work of erosion. Even in few areas, soil characteristics are change specially due to non-degradable matter also washed out by flood. Thus soil erosion leads to infertile the valuable cultivated land in the one hand and in the other hand it also create problem in internal drainage system which may become a potential cause of future flood.

7.13 Disease: flood mix-up wastes and waste water. Decomposition of organic matter on vast scale leaders to spread disease such as epidemic, viral infection, malaria and diarrhea on the flood effected area. it is a fact that generally those disease are spread during post flood period

7.14 Panic: this is an allied fact associated to most hazards. Most person having weak physique, old people, children, pregnant mother are basically suffered by this flood. And panic also work in their mind that may in future flood again spoil them and then what will they do?

Photos of Flood Affected Changual Village




VIII. RECOMMENDATION:

The prime recommendation for our study area is as follows -

- Negotiation is necessary with the transport development authority regarding the drainage problem.
- Internal drainage dredging is also necessary.
- Limit the onset hazard through preventive measures like a strong foundation for your house or a strong periphery wall.
- Learn to swimming.
- Keep sand bags stacked facing the direction of flow.
- The full care against infection, diseases, or even injuries.
- If your house is in danger, move out immediately
- Take recourse to soil conservation measures
- Take advice from concerned Govt. Department how to protect from recovering hazards.

IX. FUTURE PROSPECT AND CONCLUSION:

Finally the question comes regarding come existence of Changual, i.e. what should be the future prospect for the inhabitance of Changual. In the one hand they become the victim of flood in 2008, in the other hand, 2009, 2010 the villagers suffered a lot by the less rainfall. So, throughout 3 to 4 years, the people of this area are suffering by a massive food scarcity. The present scenario is different. Now the people are in doubt that – will their cultivable land be their? this situation arises because the establishment of various industrial manufacturing firms the newly establish firms exploit a massive amount of ground water by pump for their industrial use and now the entire region is suffering from drinking water problem. Now a dispute is going on regarding the capturing of cultivable land by the TIL (Tractor India Ltd.)

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