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HUMAN ADAPTATION AND ADJUSTMENT IN *CHARS* (RIVERINE ISLANDS) OF MURSHIDABAD DISTRICT, WEST BENGAL, INDIA

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ABSTRACT

Human adjustment is the act of balance with the daily requirements to the adverse surroundings. The ways people adjust are the processes they acclimatize to survive in unfavourable conditions. For this purpose Khamar Diar (J.L. No. 071) mouza of Bhagwangola II block and Shibnagar (J.L. No. 055) mouza of Raninagar II representing stable char and unstable char land have been chosen. Primary field survey has been done using face to face and key information method. Inferential statistics is used to analyse the data and study the significant variable. Comparison shows that variables like Monsoon Duration (days), Land Ownership, Protection of soil anthropogenic, Household wall material, Household roof material, Kitchen pattern, Means of Transportation, Change in location, Source of income vary in stable and unstable chars.

KEYWORDS:*Human adaptation , Riverine Islands , Human adjustment , information method. Inferential statistics .*

INTRODUCTION :

Human adaptation is the process of evolution of man to retain in hostile conditions with their own wit to sustain survival. Human Adjustment is human beings behavioural processes swing between their daily need and the obstruction of their surroundings. It is a balance between needs and meets. Adjustment is complete when the need and ends begins to be fulfilled. The adverse conditions retains until thereby adjusted. Adjustments are purposefully adapted that have the effect of reducing losses. In this paper victims in lieu of using brick, concrete, or any other durable house building materials, they opt for hay, jute-stick, thatch, polythene, bamboo, wood, and tin sheets. Acceptance of loss is taken for granted which may be economic, social, legal, and cultural requirements etc. that people have arranged to bear with. Traditional coping strategies are not the same throughout and varies with time, thus the coping abilities vary too. Even coping ability and traditional coping methods can be unsuccessful and unproductive if scale of the flooding exceeds (Clark Gurnizo, 1992). Hence these are complex process, linked to socio-economic variables that have a

contribution in improving people's adaptability (Singh et al., 2015).

The Ganga-Padma river has shifted its course and been a subject change. Being a braided river many *chars* (riverine islands) have been formed which is inhabited by *char* dwellers. The shifting course of river and seasonal inundation has been a menace for them. They suffer hard and adjust themselves with the changing scenario. The main objective of the study is look into the adjustment measures and their adaptation techniques while coping with adversities in the *chars*. The paper also aims to make a comparative analysis of adjustment instable and unstable *chars*.

MATERIALS AND METHODS

Primary data collected by means of a structured questionnaire applied on 135 randomly selected individual affected individuals using face to face survey has been used. For the study 80 households have been choosen from Khamar Diar (J.L. No. 071) *mouza* of Bhagwangola II block representing stable *char* land and 55 households have been selected from Shibnagar (J.L. No. 055) *mouza* of Raninagar II block confirming unstable *char* land (Fig. 1). To identify the differences in adaptation and adjustment process of the people of stable and unstable char areas inferential statistics have been used in the study.

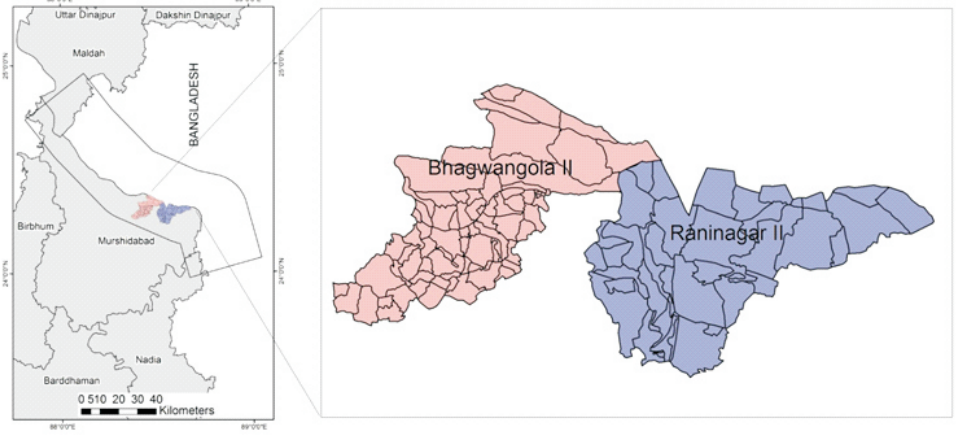

Fig. 1 Location map of sample sites

RESULTS AND DISCUSSION

The study found significant differences in terms of adaptation and adjustment process of stable and unstable *char* area. Table 1 summarizes the human adaptation process in the char areas.

Monsoon Duration (days)

Significant value ($p < 0.01$) exists in both stable and unstable chars. 43.6% of respondents in unstable *chars* stated about their displacement during inundation days exceeding one months. 48.3% stable *chars* respondents stated about their displacement one months in inundation days. Inundated vary from below one month to above one month depending upon the elevation of land.

Presence of Flood Camps

Concrete and school buildings are used for purpose. 91.3% of respondents from stable chars shift to flood camps. In unstable *char* flood camp are away buildings.

Land Ownership

Due to frequent shifting many land owners have given their land in rent to the staying back residents. People follow seasonal shifting, come to their own land during post-monsoon. Hence, significant variation has been experienced ($p < 0.01$) in between the stable and unstable *chars.*

Fuel Stocking

Dunk cakes, dung sticks, use of jute sticks twigs etc., bark , wood stocking is common in *char* areas.

Protection of soil by anthropogenic ways

Intensive cropping, multiple-strip cropping, is practised in stable *char* parts as per respondents. In the unstable *chars* kitchen gardening is practised. A significant value of this variable $p < 0.01$ exists in both stable and unstable chars.

Household wall material

In unstable *chars* brick and sometimes earthen materials, hay wall, bamboo pulp, jute stick etc. is also found. More durable material is found in stable regions. Significant value ($p < 0.01$) exists in both stable and unstable *chars.*

Household floor material

Earthen materials are general in both stable and unstable *chars*. Other than bricks, stone chips accompanied with mud are also seen.

Household roof material

Turpolin roofs, tiles, hay and corgated tin is also used for roofing purpose. Significant differences are seen between people of stable and unstable *char* lands in terms of roof materials.

Kitchen pattern

Raised platform for cooking is seen in unstable *chars*. Mud furness (56.3%) is seen in stable chars. Significant value ($p < 0.01$) exists in both stable and unstable chars the change of materials is observed with situations.

Means of Transportation

Dingi (32.7%), boats and walking is common haves among unstable *chars.* Significant value ($p < 0.01$) exists in both stable and unstable chars.

Change in location

Most of the people of unstable chars have at least shifted once (40%) or twice in their life-time. Many have shifted more. Significant value ($p < 0.01$) exists in both stable and unstable *chars.* Short distance migration is due to the hope to regain access to depositional land that remains as a reason to wander (Zaman, 1987). The dwellers undergo settlement, displacement, re-settlement, re-displacement pattern (Mukherjee, 2011).

Acceptance of loss

Most of people are familiar to loss as they have acknowledged this truth and set up their life style accordingly. Significant value ($p < 0.01$) exists in both stable and unstable *chars.*

Source of income

In stable *chars* agriculture is the main occupation. Some depend on livestock ranching. Few people migrate to earn. Significant value ($p < 0.01$) exists in both stable and unstable *chars*

Source of income of female

Women do other jobs like *beedi* bundling, *zari kari*, basket making etc. Involvement in other activities earns back economic aid to the family.

Out of 14 variables that taken during the study of human adaptation and adjustment, the variables like flood shelter, fuel stocking, household floor material, and source of female employment do not bear any significant association of the varying community response rather they polarised over a specific community group.

Table 1. Adjustment process of respondents

	Stable (n=80)	Percentage	Unstable (n=55)	Percentage
* *Monsoon Duration (days)*				
below 1 month	32	40	10	18.2
1 month	39	48.8	21	38.2
above 1 month	9	11.3	24	43.6
χ^2= 19.791 (p <0.01, df=2)				
Presence of Flood Camps				
Yes	73	91.3	42	76.36
No	7	8.8	13	23.64
χ^2= 5.723 (p= 0.017, df=1)				
* *Land Ownership*				
Tenant	21	26.3	35	63.6
Own	59	73.8	20	36.4
χ^2= 18.767 (p <0.01, df=1)				
Fuel Stocking				
Dung cake	15	18.8	11	20
Dung stick	40	50.0	14	25.5
Jute Stick	11	13.8	15	27.3
Dry bark	14	17.5	15	27.3
χ^2= 9.479 (p= 0.024, df=3)				
* *Protection of soil anthropogenic*				
Multiple strip cropping	28	35	21	38.2
Kitchen gardening	17	21.3	26	47.3
Intensive cultivation	35	43.8	8	14.5
χ^2=15.748 (p <0.01, df=2)				
* *Household wall material*				
Earthen material	32	40	15	27.3
Bamboo pulp	12	15	13	23.6
Brick cement	18	23	0	0.0
jute sticks	7	9	11	20.0
hay wall	11	14	16	29.1
χ^2= 22.133 (p <0.01, df=4)				
Household floor material				
Earthen material	43	53.8	38	69.1
Brick	17	21.3	5	9.1
stone chips and mud	17	21.3	11	20.0
Cementing	3	3.8	1	1.8
χ^2= 4.670 (p= 0.198, df=3)				
Household roof material				
Corgated tin	15	18.8	8	14.5
Tali	27	33.8	6	10.9
Dry paddy stem	20	25.0	26	47.3
Turpolin	18	22.5	15	27.3
χ^2= 12.343 (p< 0.01, df=3)				

* *Kitchen pattern*				
Mud furnes	45	56.3	16	29.1
Portable mud stove	11	13.8	21	38.2
Raised stove	24	30	18	32.7
χ^2= 13.606 (p <0.01, df=2)				
* *Means of Transportation*				
Pedestrian	44	55	21	38.2
Bull cart	19	23.8	10	18.2
Bicycle	6	7.5	0	0.0
Dingi	7	8.8	18	32.7
Van	4	5	3	5.5
Boat	0	0	3	5.5
χ^2= 21.005 (p <0.01, df=5)				
* *Change in location*				
Never	38	47.5	4	7.3
One time	32	40	22	40.0
Two times	9	11.3	5	9.1
Three times	0	0	17	30.9
Many times	1	1.3	7	12.7
χ^2= 49.072 (p <0.01, df=4)				
Acceptance of loss				
Partially	46	57.5	26	47.3
Fully	34	42.5	29	52.7
χ^2= 1.370 (p= 0.242, df=1)				
* *Source of income*				
Agriculture	34	42.5	10	18.2
Livestock ranching	5	6.3	23	41.8
Fishing	12	15	16	29.1
Agriculture and Livestock	23	28.8	6	10.9
Others	6	7.5	0	0.0
χ^2=37.868 (p <0.01, df=4)				
Source of income of female				
Beedi bundling	34	42.5	22	40
Basket Making	6	7.5	7	12.7
Zari kari	15	18.8	11	20
Agricultural labourer	3	3.8	8	14.5
χ^2=4.634 (p= 0.201, df=3)				

Source: Compiled by author

* Significant at less than 1 percent level

CONCLUSION

The measures are diversified with wider range of alternatives that act as potential strategies to cope with adversities. The people of unstable *char* endure more hardship than the stable counterpart and so dealing with harsh conditions makes them to think of new dimensions in coping strategies. The unique alteration is loss bearing as most of the *char* dwellers predict to loss. Though majority of the *char* dwellers are well-know of the fact that there is an likely inundation during and post monsoon, they remain to continue their living in the *chars* of stay and bear the adversities (Islam, 1974). Adjustment is an adaptive system ensuing in reduction of worry (Golant, 1971).These families are poor and have no other better option than sticking to their place of stay and suffer. Proper zonation with implied measurement can help to modify strategies and deal with adversities.

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