

PATIALA FLOODS : WHERE LIES THE SOLUTION ?

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ABSTRACT: It is surprising to note that even after taming almost all the rivers and adopting various flood control measures the highly developed state of Punjab is subject to frequent floods. The devastations associated with floods are directly related with their level and duration instead of the extent of area under floods, which are further associated with rainfall characteristics and man made obstructions not only at local level but at regional scale. The present study is addressed to the July 1993 floods of Punjab particularly experienced by Patiala city and its environs.

INTRODUCTION:

Punjab has witnessed devastative floods in July 1993. It is true that the floods affected normal life in thirteen out of fourteen districts and fury of floods was experienced by 4471 villages and approximately 44 towns of the state but Patiala city as well as district were the worst disrupted areas, therefore, deserve to be given special attention. Here, Patiala Nadi is the main source of floods and associated miseries.

RATIALA NADI:

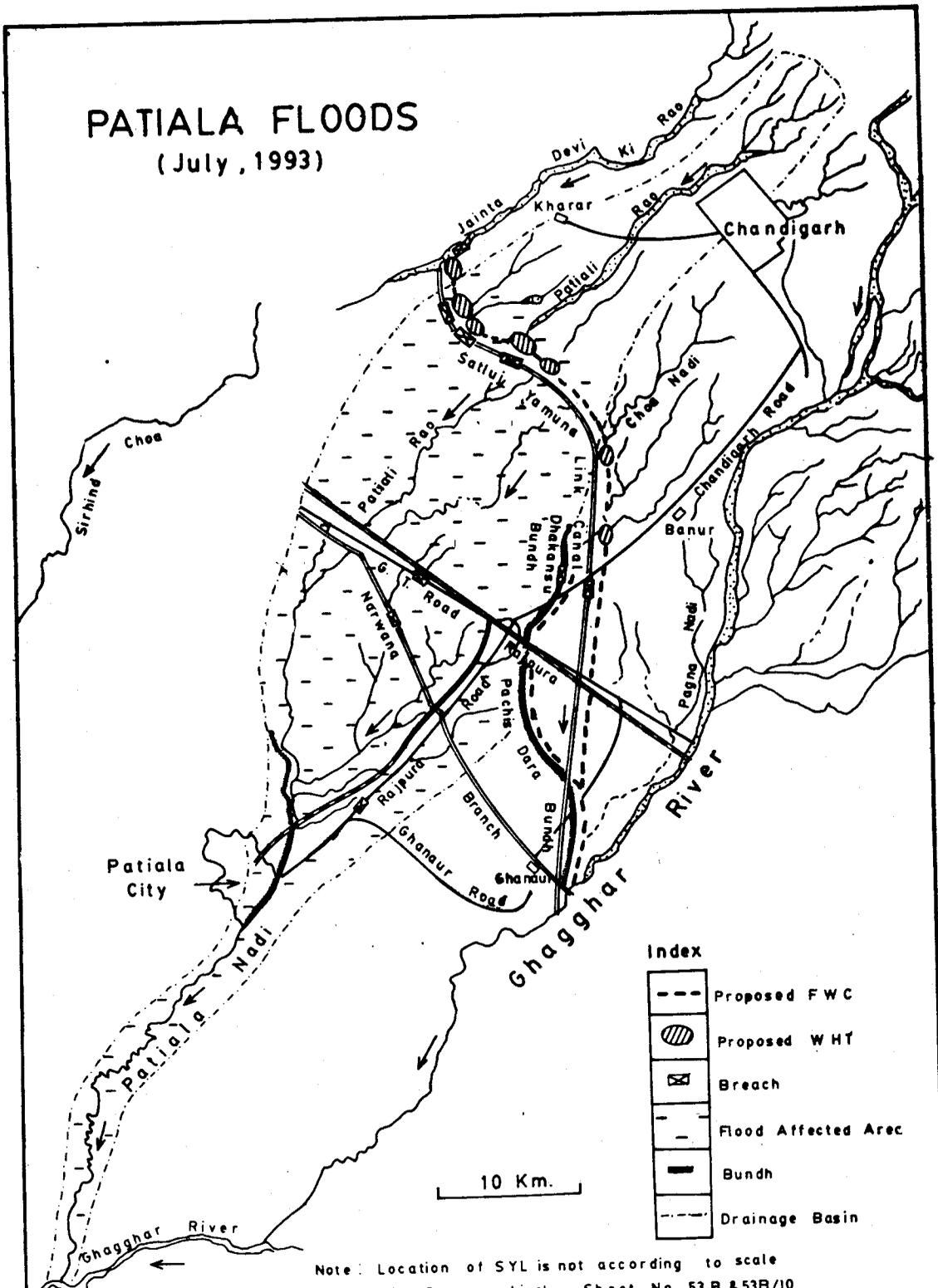
Patiala Nadi (map 1) also known as Patiali Rao, in its upper reaches, at present originates from an alluvial fan constructed by Patiali Rao. Patiali Rao which rises from Shiwalik hills from a height of 601 metres near Basawal in Harayana had a continuous valley of about 120 kilometres upto Ghagghar river during historical past. It is due to break of slope that Patiali Rao sheds all the sediments brought by

it from Shiwalik hills. As a consequence, a depositional plain is constructed and the channel disappears after bifurcation. After its reappearance the Nadi collects water not only from its original channel upstream but of several other torrents which gradually disappear in this region. A number of small torrents from an area located south of G.T. Road also join the Nadi before it reaches Patiala city. Thus, starting from Shiwalik hills to Patiala city, the Nadi collects water from more than 800 sq. km. of area.

RECENT FLOOD:

Being located in low-lying area, Patiala city is subject to frequent floods and it has experienced as many as thirteen floods since 1983. Recently, the city has experienced most severe flood of its history for three days i.e. 11th to 13th July 1993. About 70 percent of its area and more than 80 percent of its population were affected by flood as the Nadi recorded the

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highest flood level (22.2 feet). About 90 percent of flood affected area was under 5 to 8 feet of water while there were some localities where flood level was recorded more than 10 feet. The devastations associated with flood are directly related with the level of flood and its duration.

It is argued that people have constructed houses in the low-lying areas which has added to the miseries associated with flood. It cannot be denied that there are some unauthorized constructions in the low-lying areas which have aggravated the situation. But, what about urban estate phase-1 and phase-2 and housing board colonies located in these estates, where the government itself has sold the plots and constructed houses. Similarly, Sewa Singh Thikriwala Nagar (planned by the improvement trust) and polytechnic for women are not the creations of the people. Likewise, D.C.W. (Diesel Component Works) and its residential colonies, Thaper Engineering College and its residential area and Punjabi University, Patiala are not the unauthorized constructions. Simi-

larly, the localities within the walled city cannot be stated as unauthorized.

In fact, barring the surroundings of kila Mubarik, no area is safe in Patiala city. It depends upon where the different bundhs, the roads and the canals are breached or which of these are high and strong enough to stand the thrust of water or its diversion by the people. For example, had there not been Hansli (a pucca drain constructed to carry water in the tank of Gurdwara Dukniwaran located along Nabha road) high and pucca enough to check the flow of water towards south, all the localities located between Nabha road and Patiala - Bathinda railway line would have been submerged under water. Similarly, Safabadi gate and adjoining localities have been saved by military personnel who immediately plugged the breach which occurred in the Rajpura road near Paul Service Station. Likewise, the cantonment, aviation club, defence colony and adjoining localities upto Lower Mall road were saved by protecting BML (Bhakra Main Line Canal).

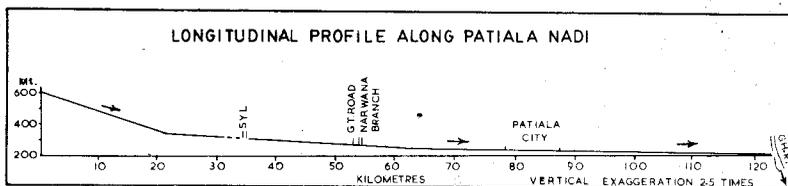


FIG 1

PROTECTIVE MEASURES:

i) At Local Level:

Making defence bundh on the Nadi high and pucca, desilting the Nadi, digging it deeper and wider, keeping the Nadi clean, checking the encroachments and unauthorized constructions are some of the measures suggested by the people and being considered by the government to check floods.

Making the defence bundh on the Nadi high and pucca is no solution to the problem. Such

measures, if protect some areas from flood also enhance flood proneness of others. The method may have been more practical had there not been expansion of the city across the bundh. There are very important localities like urban estate phase-1 and phase-2, housing board colonies, I.T.B.P. (Indo-Tibetan Border Police) official - cum - residential complex, Punjabi University, Patiala and Hira Bagh across the bundh. All these localities have recorded 3 to 9 feet water inspite of the fact that there were 35 breaches in both the bundhs on Choti Nadi

and Bari Nadi. Had there not been any breach in the bundhs these localities may have been washed away. Can government ignore these localities? Are these not a part of the city? Are these unauthorized constructions towards which the government has no responsibility? Not only these localities but the fate of large number of villages is also attached with this bundh.

Secondly, desiltation of the Nadi and making it deeper and wider if carried out only around the Patiala city may not be of much help because we cannot improve the stream efficiency by making any segment of the valley deeper and wider, without taking into account the down stream profile of the valley. What appears from map 1, is that down stream valley of the Nadi is very narrow and due to very little gradient (fig. 1) the Nadi has become sinuous leading to decline in stream efficiency. Therefore, if we want to improve the situation, then, the process of making the Nadi deeper, wider, and straight should be carried out atleast from G.T. Road to Ghagghar river. Partial desiltation i.e. around Patiala city if carried out will convert the Nadi into a dirty water lake which will have its own consequences.

Thirdly, unauthorized constructions and encroachments particularly in the bed of the valley have certainly aggravated the flood problem. Such growths can easily be checked by refusing electric connections.

Fourthly, the sewer water and industrial effluents should not be discharged in the Nadi i.e. Nadi should be kept dry at least upto Dakala bridge to keep it free from weeds, shrubs and plankton which impede the regular flow of water particularly when these get stuck into the bridges and thus aggravate the problem of flood. It can easily be done by making a separate pucca drain for sewer etc. before it falls down in the Nadi some where downstream from Dakala bridge.

Fifthly, before constructing any road, canal, drain or a continuous long wall in and around Patiala city, its impact as barrier to drainage must be studied in detail. For example, raising of Ghanaur road near Bahadurgarh resulted in three breaches in Patiala-Rajpura road, while construction of Northern By-pass and T.T.B.P. complex wall were instrumental in changing the direction of flow and increasing the level and extent of flood by obstructing free flow of water.

Sixthly, round-the-clock patrolling should be carried on along the BML and Narwana branch during rainy seasons.

ii) At Regional Level:

Nobody is convinced with the argument that the exceptionally severe flood of July 1993, when the Nadi has recorded highest flood level in its history was a natural calamity. Something unnatural has happened in the catchment area because after a gap of 35 years (since 1953 when the city was flooded), the Nadi has become so active that it created havoc in 1988 and again in 1993. SYL (Sutlej - Yamuna Link) commonly known as 'Killer Canal' was instrumental in causing 1988 floods and this time also it has played a very destructive role as water breached in from three places (near villages Dharak, Choti Chuni and Machhli Bari) and breached out just across the Rajpura-Chandigarh road from where it rushed towards south and after breaching Dhakansu Bundh, G.T. Road, Narwana branch, Pachisdara, and Patiala-Rajpura road it joined Patiala Nadi and created destructions in Patiala city and down stream rural areas (map 1).

The breaches in the SYL have occurred due to faulty design of SYL (across the slope) and the out-lets provided for the seasonal streams over it. Occurrence of such breaches even in future cannot be ruled out if proper arrangement is not

made. What is suggested is that a chain of adequate Water Harvesting Tanks (WHT) should be constructed for each seasonal stream in the north of SYL. All these tanks should be connected with a Flood Water Canal (FWC) which should run along the SYL upto Ghagghar river. The water can also be diverted along Dhakansu and Pachisdara bundhs after working out its feasibility and strengthening of these bundhs (map 1) but it will be worthwhile to go for both the alternatives to meet the eventualities like that of 1993, because nothing is costlier than the recurring loss of human lives and properties due to floods and effusion of funds for rehabilitation thereafter. The WHT should be provided with flood gates to release excess water in the FWC. Emergency gates should also be provided towards already constructed out-lets on the SYL. This measure along with the local steps suggested above, if adopted will not only save all the villages which used to get flooded every year after the construction of SYL but also protect Patiala district from floods. Moreover, the WHT will

provide irrigation, improve sub-soil recharge and enhance the possibilities for aquaculture in the foot-hill tract where water table is very deep and agricultural economy is relatively backward. Further improvements are possible by linking FWC with SYL or any other canal to fill the WHT during lean period to make irrigation and other activities a round-the-year phenomenon. However, to check sedimentation in the tanks proper measures like afforestation, check dams etc. have to be taken up in the catchment area of these torrents.

It is true that memories of the people are short lived but this time the wound is very deep and it will take long time to get healed. People cannot be satisfied by aerial survey and distribution of relief packets. They are worried about their future because frequency as well as intensity of floods have increased. They have high hopes on the government to mitigate their sufferings and fears thereof. They are looking towards having some permanent solution of the problem so that they should not get scared at the mere sight of clouds.

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