IOSR Journal Of Humanities And Social Science (IOSR-JHSS)
Volume 24, Issue 1, Ser. 7 (January. 2019) 83-85
e-ISSN: 2279-0837, p-ISSN: 2279-0845.
www.iosrjournals.org

A Geographical analysis of Resource potentials and Development of Aurangabad Bihar

Dr.Sarvesh kumar
P.G Department of Geography Magadh University Bodh Gaya Bihar

ABSTRACT: *The marginal alluvial plain of Ganga Basin possesses diverse geomorphological and hydrogeological conditions. The tracts of South Bihar Plains (SBP) adjoining the Jharkhand state comprise mixed conditions of exposed hard rocks, exposed weathered zones and hard rocks covered with thin veneer of alluvium. In these environments, it is often hard to meet the irrigation demand for agriculture. The work focuses on an area covering the Aurangabad district in the South Bihar Plains. The district possesses a moderately thick alluvium (100-150 m) in the northern tracts in the blocks such as Goh, Hanspura, Barun, Daudnagar and Obra. Shallow tube wells in these areas yield enough water for irrigation. However, in the southern tracts covering blocks such as Deo, Madanpur, Rafiganj, Nabinagar and Kutumba, the private shallow tube wells in the thin alluvium overlying the hard rock do not yield that much of water for irrigation. In these tracts, deep tube wells tapping fracture zones in the hard rock are required for the purpose. In these tracts, people heavily depend on the flow of local small streams and other surface water bodies for irrigation. Large diameter dug wells and ponds can be revived and newly constructed for irrigation. It is important to maintain the flow in the streams during non-monsoon periods. Artificial recharge to groundwater can play significant role in augmenting the flow in the streams during the period.*

KEYWORDS: *Geomorphological, hard rocks, irrigation, environments, groundwater*

I. INTRODUCTION

Bihar state, located in the Middle Ganga Plain, possesses a geographical area of 94163 Km2 , 89% of which is covered by alluvium and the rest 11% by hilly tracts adjoining to the Jharkhand state at south. The state is endowed with fertile soil and abundant resources of both the surface as well as groundwater in its majority parts. It is predominantly an agrarian economy with around 90 percent of the state population, living in the rural areas and depending on the agriculture for their livelihood. Despite of plenty of water resources in the state, an irrigation potential of only 52% of the net sown area have been created and the agriculture has remained primly dependent on monsoon. In 2009-10, canals (major and minor) provided 27.47% and tube wells provided 61.39% of total irrigation (Econ. Survey 2010-11). The districts lying in North Bihar Plains and few on the adjoining to the southern bank of Ganga River possess high scope of groundwater irrigation. However, the districts in the marginal plains, such as Kaimur, Aurangabad, Munger, Lakhisarai, Banka, Nawada, Gaya, Bhagalpur and Sheikhpura suffer from limited groundwater resources for irrigation. In general, people are unable to bear the cost of drilling in the hard rock to get water for irrigation. Though, the Sone canal system from Indrapuri barrage (Fig 1) has benefited parts of Rohtas, Bhojpur, Aurangabad, Arwal and Jehanabad, irrigation of major parts of the South Bihar Plains is met from groundwater and surface water resources such as rivers, ponds and other water bodies. In many cases, people have to transport water through delivery pipes to distances as much as few hundred meters and often this is beyond the financial reach of poor farmers. The present work focuses on a part of the southern marginal plains of Ganga basin, covering the Aurangabad district of Bihar state. It deals with systematic hydrogeological survey of the district coupled with geomorphologic and stratigraphic studies. The study aims at generating hydrogeological data set and through their interpretation, it tries to postulate the ways of meeting groundwater demand. It delineates the poor groundwater quality areas and the areas suitable for artificial recharge to augment the groundwater reserve.

LOCATION OF STUDY AREA

The district with a geographical area of 3389 Km2 between the longitudes of 840 00’- 840 45’ E and latitudes of 240 30’ -250 15’ N is located in the South Bihar Plains (SBP) and constitute a part of the marginal alluvial plains of Ganga Basin (Fig 1). The Sone River forms the western boundary of the district and at the southern boundary lays the Chhotanagpur Granitic Gneissic Complex (CGGC) of Jharkhnad state, which forms a part of the peninsular India. The district is bounded in the north and the east by the Arwal district and the Gaya district respectively.

ADMINISTRATIVE SET-UP

Aurangabad is one of the 38 districts in Bihar. It is one of the 5 districts of Magadh division. The head quarter of the district is Aurangabad. The district has two sub-divisions namely Aurangabad and Daudnagar and 11 blocks, namely Madanpur, Kutumbba, Daudnagar, Aurangabad, Barun, Obra, Deo, Nabinagar, Haspura, Goh and Rafiganj (Table 1). There is total 224 Gram Panchayats covering 1712 villages in the district.

DEMOGRAPHY

In 2011, Aurangabad had population of 2,511,243 (Population Census 2011) of which male and female were 1,310,867 and 1,200,376 respectively. The rural population constitutes ~90% of the total population (Table 2). There was change of 24.75 percent in the population compared to population as per 2001. The initial provisional data suggest a density of 760 in 2011 compared to 609 of 2001. Average literacy rate of Aurangabad in 2011 were 72.77. With regards to Sex Ratio in Aurangabad, it stood at 916 per 1000 male compared.

WATER USE HABITS

People of Aurangabad district depend on groundwater for their drinking need, except few urban areas, which get the water supply from nearby rivers; i. e. a part of the drinking need of Aurangabad town is met from the Batane River due to lack of any potential aquifer beneath the town. Earlier, people used to depend on dug wells/dug-cum-bore wells to tap groundwater. Minor Irrigation Census of 1993-94 for the state of Bihar reported 9056 of such groundwater abstraction structures to exist in the district. However, the use of such structures is in a decline phase and the MI Census of 2000 reports only 4759 of such structures. Hand/machine driven tube wells fitted with hand pumps have been popular in the district due to shallow water level in major parts. As mentioned earlier, only the Sone River along the western boundary and the Punpun River along the central parts of the district bear little flow during the lean period and all the other small streams go dry. Thus, surface water is scarce in the district. The barrage on Sone River at Indrapuri has been a boon for the district and people depend on supply of water from it for irrigation. Available surface water in streams and ponds are also used for irrigation during the dry periods, when groundwater level goes deeper (described later).

Plate 1: Rich rice cultivation in Aurangabad district during the summer.

Agriculture and Irrigation

Practices During field visits the status of agriculture and the irrigation facilities were observed. The people of the district depend on agriculture for their livelihood and sustenance. Rice and wheat are the staple crops. Besides, mustard, vegetables and dal are richly cultivated, specifically in the southern parts of the district. Enquiries were made to the local farmers regarding the sources of irrigation and the cropping pattern. Only the northwestern parts of the district covering the blocks such as Barun, Obra, Daudnagar, Goh and Hanspura, get East Sone Canal water (Plate 2. a & b) for irrigation. Though, there is a culture of triple harvesting a year in the district, in many parts people fail to achieve this due to lack of irrigation facilities.

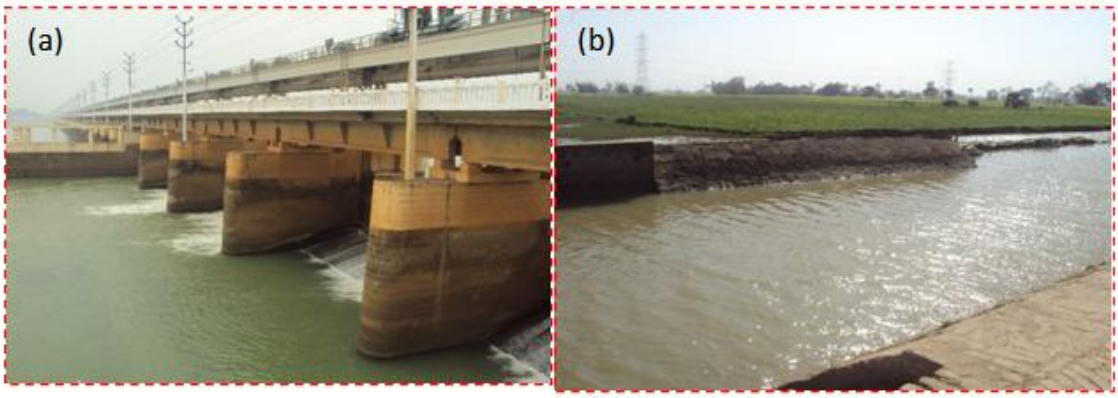

Plate 2: (a) Photo of barrage on Sone River at Indrapuri. The Eastern Canal System from barrage provides irrigation water in parts of western South Bihar Plains. (b) Canal water in Aurangabad and irrigation for winter paddy and Dal crops.

REFERRENCES

[1]. Banghar, A.R., 1991. Mechanism solution of Nepal–Bihar earthquake of August 20, 1988. Journal of the Geological Society of India 37, 25– 30.
[2]. CGWB, 2009.a. Ground Water Exploration Report. Ministry of Water Resources. Government of India. Central Ground Water Board, Mid-Eastern Region, Patna.
[3]. CGWB, 2009.b. Dynamic Ground Water Resources in Bihar. Ministry of Water Resources. Government of India. Central Ground Water Board, Mid-Eastern Region, Patna.
[4]. Economic Survey, 2010-11. Finance Department. Government of Bihar.
[5]. GSI., 2000. Eastern Nepal Himalaya and Indo-Gangetic Plains of Bihar. In: Narula, P.L., Acharyya, S.K., Banerjee, J. (Eds.), Seismotectonics Atlas of India and Its Environs. Geological Survey of India, pp. 26–27.