

Keeping Urban and Rural Set up Safe - The Prime Responsibility of a State

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Abstract— *One of the prime responsibilities of a State, which in most cases should be tackled in a collective manner along with the neighbouring provinces with active participation, cooperation, coordination, financial support, as well as, directive from the Centre. Each year owing to incessant rains advancing especially at the peak of the rainy season, severe floods causing relentless sufferings to millions of hapless peoples from several Indian states have become an expected annual calamity. This year too the disaster struck in a unsurprising manner affecting millions in populated states of Uttar Pradesh, Uttara Khand, Uttaranchal, Bihar, Assam, West Bengal, Orissa, Andhra Pradesh as well as in Tamil Nadu and in the deep south in Kerala where the severity was maximum. Even the capital New Delhi and relatively dry states like Rajasthan and Gujarat were also affected by the calamity. For reducing the severe condition faced by millions of people from several Indian States, a plan must be chalked out by the Government in association with the planners, scientists, engineers, technologists involving management of land and water. The author, based on his earlier communication on the subject, suggests certain essential measures aiming to alleviate the severe condition faced by the nation.*

Keywords— *Urban, Rural, State responsibility.*

I. INTRODUCTION

India is blessed with immense natural advantages like significant geographical location, plentiful natural resources and wonderful setup of vast fertile land with several broad rivers passing through that are fed by plentiful rains and snow melt water. The fertile lands are distributed as plains and high lands that are intermittently covered with lush green forests. Towards the north, the country is protected by the mighty Himalayas while the southern peninsular region with its eastern and western fringes forming a continuous triangular border of shore line, guarded by the Arabian Sea, Bay of Bengal and the majestic Indian Ocean..

India's overall climatic condition throughout the year is congenial in greater part of the country, and tolerable in rest areas, with virtually no objectionable zone. In

comparison to many other countries having desert and dry condition, or in contrast, having extremely cold condition with frequent fall of snow, almost the entire India is enjoying bright and congenial situation in greater part of the year. Despite such favourable setup, it is the task of the administrators and men in power to keep the country in proper shape. While Israel, which is a desert-like country has been turned green and in China, Hoang Ho river, earlier known as 'sorrow of China', has been transformed in to joy of the land by people's determination and will, in India vast fertile lands in the rural sector, as well as cities are invaded by floods each year. We are spending each year enormous amount for rehabilitation of flood affected masses, for restoration of damaged structures and for construction of new structures.

Very recently several bridges in various parts of the country, including an important one in Kolkata collapsed for which full-fledged mud sledging along with attempt to find out the cause of the disaster was made. It may be noted that in case of Kolkata, Metro Railway which is passing through the vicinity of the area, may not be responsible for the happening since Metro is passing throughout the main areas of the city for decades without any record of causing disaster to the buildings and structures of the neighbouring regions. While attempting to dig out the valid cause of the misfortune, a root cause ingrained with the structure should also be counted as a possible reason. Several large two or three storied buildings have collapsed due to rain followed by water logging condition. The soil of the entire state of West Bengal, including Kolkata is soft. Incessant rains would be the source of a large quantum of water that would accumulate for several days in various parts of the city. This would cause soil of all structural features that are rooted in the zone to weaken, especially at their core level.

The most important task today for the environmentalists, engineers, geographers, geologists, physicians, economists, zoologists, botanists, as well as, social scientists, NGOs and political leaders associated with economic development, population management, ecology and various inter-disciplinary domains to act in a

conjoint war-footing manner aiming to face the next year's adversity.

II. DISCUSSION

To alleviate the disparity in regard to water distribution in wet and dry zones, Government has planned linking of rivers for achieving flood control and proportionate distribution of water throughout the country. While in respect of many rivers linking can indeed be accomplished, various aspects, like proper flushing of huge amount water, overall characteristic of flood management, expected changes in vast geographical areas which are directly and indirectly related to the proposed linking are to be carefully investigated by experts of various disciplines. River linking project has remained a controversial matter. In the present paper the author has put forward a proposal for river dredging, based on his earlier works which have been further updated, for recovering the severe damage caused due to incessant rain to the land and river system of the country. The proposal for river dredging projected in the paper is a massive task requiring huge amount of money

While linking if conducted without dredging of the river, flood from recurrent flood-affected areas may invade flood free zones. Hence, before considering river linking the most important agenda on river project should be river cleaning by means of extensive process of dredging aiming to enhance water holding capacity of the river basins. Similar task should also be implemented in case of all canals, rivulets, lakes and ponds which too in a combined manner can accommodate large amount of additional water during the rainy season and consequently add to flood control plan.

Around the rivers it is necessary to prepare low level or shallow canal-like depressions on having several flat level areas or steps on both sides of the river's deeper central part through which water can be drained off while the shallow flat areas on two sides can be used for irrigation, as well as, for accumulation of excess water during floods.

Protection Measures for Rivers

It is most urgent to clean up all Indian rivers including the tributaries by dredging. Dredging of Brahmaputra, Ganga, Yamuna, Koshi and other major rivers would require colossal resources in terms of money, machine and man power and should be taken up as continuous projects. These gigantic tasks are more complicated, larger and time consuming than river linking project and can only be achieved with large number of civil engineers, mechanical engineers and experts of various other branches, working. Large number of dredgers would be required for

undertaking dredging in major rivers of India. To reduce water content or temporarily drying up in some parts of the rivers additional deep and sufficiently broad (depending upon the local situation) canals or inland waterways, running parallel or by the side of the rivers can be drawn. To facilitate diversion of water to suitable areas, additional canals, attached with lock system, can be connected with the rivers, wherever possible. River water, particularly, during the summer and dry periods, can be diverted to the parallel canals so as to thoroughly clean and deepen the river bed and increase the capacity of the basins.

Erosion of banks of Brahmaputra and several other important rivers and their tributaries is another major menace during the rainy season. This can be controlled by broadening and deepening the basins at convenient places, aiming to accommodate extra water that rushes out at great speed causing the damage. Additionally it would also be necessary to place large stone blocks in selected vulnerable points which would reduce the speed of the incoming water. Plantation of thick bushes with deep roots, which can firmly hold the soil, can substantially resist bank erosion.

Protection of Land

Protection of land is intimately associated with water and river management and systematic plantation in a wide scale. The programme of plantation must be pursued in a more vigorous and meaningful manner. Much before the modern concept of tree plantation for protection of environment was mooted, Rabindranath Tagore visualized the importance of tree plantation and introduced 'Briksharopan Utsav' or tree plantation ceremony in Sreeniketan, adjoining Santiniketan, which the poet designed for rural development hundred years back. India has vast natural land with rich fertile top soil suitable for agriculture and plantation almost throughout the country which does not require extra-ordinary efforts for cultivation. For crop production of diverse types and farming, environment-friendly fertilizer, soil conditioner, compost and pesticide can be derived from the plentiful natural sources for which further attention and intensification is needed.

Remarks

River dredging projects are long term colossal tasks that require huge amount of money, manpower and other resources. Yet, river dredging project is too important to keep the condition of the state safe and, hence, should be immediately taken up. River project guarantees job opportunities in a massive scale to all sections of peoples

and promises to turn overall condition of the state, particularly during rainy season safe by eradicating frequent onslaught of flood. If flood fury can be managed, recurring woes to crores of Indian citizens can be wiped out, at the same time saving the huge amount spent each year in some parts of the country for rehabilitation of flood victims and associate expenditure, like repair and restore the houses, roads, bridges railway lines, and river banks.

REFERENCES

- [1] Sen Subhasis, 2005a Beach Extension, Restructuring of Adjacent Shelves and Plantation – Measres for Combating Coastal Hazards, Int. Conf. on Coastal Hazards, organized by IGC SASTRA Deemed University, Thanjavur, Feb. 9-11, 2005, Abst. P. 29.
- [2] Sen Subhasis, 2005, Eco-friendly Initiatives for Disaster Management and Environmental Protection, In, Global Eco Meet, Sustainable Land Use and Waste Management, Abstract, Swadeshi Science Movement, Kerala, February 22 – 23, 2005.