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URBANISATION, AQUATIC ANIMAL AND FLOODS IN INDIA

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ABSTRACT

One of the most common and recurrent natural disasters in the world is flood. The economic damage and casualties brought on by the flood have burdened the economy more than any other natural disaster because of its recurrent prevalence. India has consistently experienced numerous floods, which have resulted in significant financial, human and aquatic habitat losses. India suffered a whopping USD 79.5 billion (UN) economic loss due to climate-related disasters in the last 20 years, according to a UN report which highlights the impact of extreme weather events on the global economy. It has been discovered that flood incidents are rising quite quickly. Climate change, cloud bursts, tsunamis, inadequate river management, silting, etc. are many potential causes, but the destruction is getting worse for both lives and economies. India's disaster management policies and programs are very structured and well-organized, but more efficiency is needed in their administration and execution. Floods caused greater economic and human losses during the past ten years than any other calamity.

KEYWORDS : Floods, UN, Natural calamities, Economic losses

INTRODUCTION

Mumbai in 2005 Chennai in 2015 Kerala in 2018 Hyderabad in 2020 and Bengaluru in 2022, and in this year, Delhi is drowning the same story repeats year after year and as a result India loses billions of dollars. Climate change has impacted the hilly region more than any other region in these three major ways. Due to rising temperatures, rains are more severe and in less time. Melting glaciers increase the level of rivers, and reckless development on the banks of rivers causes disaster in the long run. If we see about Bihar and Assam, there are floods almost every year, but no improvement is visible. Urban flooding is India's biggest recurring man-made disaster which causes a loss of billions of dollars to the Indian economy. Literally, a loss of billions of dollars! The Asian Development Bank has said, more than 50% of India's climate-related disasters are only because of floods. From 1990 to 2017, the loss because of flood-related damages was 54.63 billion dollars. The Kerala floods in 2018 caused a loss of 4.25 billion dollars. The Tamil Nādu floods in 2015 caused a loss of 50,000 to 1,00,000 crores. This was the costliest natural disaster of 2015. The Hyderabad floods in 2020 caused a loss of 670 crores. The Mumbai floods in 2005 caused a loss of 5 lakh crores. (NDMA) People's houses are washed away, diseases spread, and productivity loss occurs, that means climate change impacts not just the environment but also our economy as well as on our economy. We have noticed that monsoon patterns have gone even more haywire. Scientists are saying that rains will be more irregular in the future. The floods are just not caused by natural calamities but due to excessive urbanisation also, due to rapid development the natural drainage system in which the water would flow in normal scenario gets totally changed but we know water makes its own path and whoever comes in its path gets thrown away like a pack of cards. And the same is happening everywhere the houses which gets destroyed in the floods comes in the natural path of the drainage system. The natural drainage system is altered with artificial drainage system which is a long connection of

sewers which are ultimately discharged into small rivers and the small rivers merges into the big rivers. In normal condition in natural drainage system the water would get absorbed in the soil with passage of time and less amount of water would get into the small rivers which would not increase the level of river water. But in the modern era urbanisation is directly proportional to the concrete so it is even impossible to imagine the development without concrete and due to the use of concrete the artificial drainage system is not able to percolate water into the ground and ultimately all the water gets into the river and increases its level.

OBJECTIVES

To study the cause and effects of floods in India which includes it social, economical and ecological aspects and also to find out effective ways to reduce chances of floods in our country.

MATERIALS AND METHEDOLOGIES

We selected the area in Bokaro steel city to perform the experiment, there was no rain for last two days in the experiment space. We have selected two spaces of length and breadth of 2ft each and of height 0.2ft. One of the space is fully covered with concrete to stimulate it like a drain. While the other was not covered with any kind of material. Then we filled both the space with water till full.

RESULT

The water in concrete filled space was as it was but in the other space water percolate to the ground within 20 minutes. So, with this experiment we can conclude that if we just provided enough surface area for water to just get absorbed in ground to ultimately increase the water table it will do the same which would help to reduce the immense pressure in the drains.

DISSCUSSION

The fact that flooding is natural in this situation is crucial. Floods are not a brand-new idea. Since ancient times, rivers like the Ganga and the Brahmaputra have flooded, bringing with them fertile silt. (Ghosh, 2023) River banks are very productive because of this. So, what is the issue? Unplanned growth is the issue and the cause of flooding. India must develop, but it will only be sustainable if it is done so with careful planning, which is a proven truth. Modern cities are entirely made of concrete, and the natural drainage systems have been completed. Due to overcrowding, slums develop on the banks of rivers and streams, and people exclusively dispose of their trash there. Waste causes blockage and contamination, and the polluted water ends up in our oceans. The outcome is a clogged river. When it rains, the river level rises as a result of this waste, and water seeps into people's homes. Slum areas require awareness since they suffer the most from a lack of hygiene. We build our cities in a way that benefits us in the short term while harming the environment in the long run. But we overlook the fact that we must foot the money for this. In the past, there were open spaces and soil in the cities that used to absorb rainwater. However, there is no surface to absorb this water in the concrete jungle, so it keeps piling on the road. The vast root system of trees allows them to absorb water and transfer it to the ground. In trees, the system is intricate. In order to meet their demands, trees take their fair share of water from a given region and then transfer it to other trees through their roots. We have now removed trees from our cities and surrounded the remaining trees with concrete. The municipality frequently removes tree roots when building roadways, which causes trees to lose their balance and collapse due to winds. In areas with trees, 10 inches of rain are absorbed per hour. In open areas, only 4 inches can be absorbed. When there are strong downpours, open terrain floods, and the soil is carried away by the water. Even contaminated groundwater is cleaned by trees. Despite having so many advantages, our community only has concrete and water during the rainy season; there are no open spaces or trees. We are also actually engulfing our ponds and lakes, which serve as a reservoir for the city's unexpected rainfall, due to enormous development. We are reclaiming all the ponds and lakes to build large residential spaces. This is a pretty limited way of thinking, which is why our cities experience one man made tragedy every year.

Effects on aquatic animal

Floods quickly convert terrestrial ecosystems into aquatic habitats, enabling aquatic animals to wander into unexpected areas. Animals that live on land often do less well during floods. Some people might be able to sense impending flooding and move to higher, dry ground. Others just don't have the chance or skill to act

evasively in time. This can include creatures like wombats, platypus, and echidnas that have dependent young in burrows.

Many insects, bats, and birds can fly, so they might be able to get away. But the size and impact of weather systems that cause floods will also have an impact on how successful they are. For instance, many birds became soaked because they were unable to flee the intense rain and find refuge. Birds may suffer from exposure and are more likely to be attacked by predators like foxes and feral cats if they are too fatigued to fly.

Invasive species that are not acclimated to the river's cycles can be outcompeted by local fish stocks thanks to small seasonal floods. Small fish can be raised in the sediment that floods dump on riverbeds. Aquatic food webs can be supported by nutrients carried by floodwater by increasing productivity.

Over 40% of all species depend on wetlands, making them a crucial component of the ecosystem. They serve as a carbon sink, a flood buffer, and a water filter. One of the biggest and most significant wetland habitats on the planet is the Okavango Delta in Botswana, which is also a UNESCO World Heritage Site. Rainfall from Angola's highlands far to the north is captured by the river. At the height of the dry season, this results in a flood pulse that replenishes the wetlands, creating a verdant oasis in the Kalahari Desert.

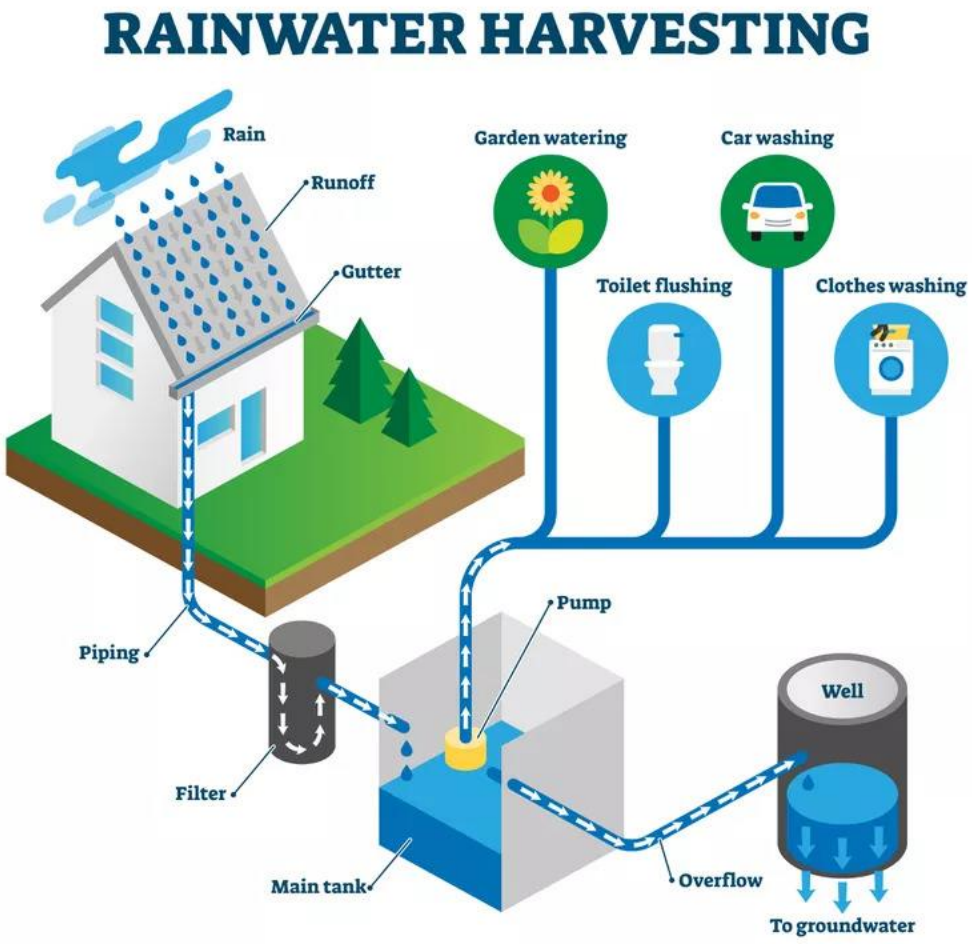
Floods are a natural occurrence, and the ecosystems they influence are severely impacted by both their good and negative effects. Floods can be harmful to people and the environment, but they also promote biodiversity and are necessary for many ecosystems to function. No matter how you feel about floods, there is no denying that life would be drastically different without them.

(S.K. Das1)

CONCLUSION

As we have seen floods not just only brings economical losses but also brings social and ecological losses which can't be compensated with redevelopment, we have to fix the root causes so the floods can't damage our ecosystem. Rainwater harvesting is the initial solution. You must have noticed that while India experiences frequent rain and flooding during some months, there isn't even enough water to drink during the other months. Rainwater collecting provides a solution to the issue of water not being able to be absorbed by the soil in our concrete jungle. Rainwater harvesting is the process of catching rainwater and letting it stay in the ground's soil. Underground recharge pits are constructed for this. So that the water can enter the earth and be used later, a pipe is installed by excavating the ground. As a result, the groundwater is replenished and water does not enter the road. The process is simple. You will have to dig a pit where water can collect, then stones will have to be filled in that pit so that the water does not attract mosquitoes, then this pit will have to be connected to the rooftop with a pipe so that the water goes directly from the rooftop to this pit. In this way, the water that collects in the pit will be slowly absorbed into the ground. Rain gardens are an additional remedy. These gardens are built at a modest elevation below the normal road level so that water can flow through them, where it is filtered and transformed into groundwater. Because of this, the water will instead seep into the ground and become groundwater, which will continue to benefit us all year long. They are referred to as rain gardens. Rain gardens can be constructed almost anyplace and can absorb 30% more water than a conventional garden.

(Vartan, 2022)



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