Project Neer
Final round presentation#

Dams, the temples of modern India, help in controlling floods, generation of hydroelectricity, irrigation, water supply etc... But do we know how the dams have an impact on the environment? Good morning to one and all present here. In this presentation of project Neer – Environmental impacts of dams; we are going to present before you, the various impacts of dams on environment using data, models, pictures, case studies etc… We have chosen this topic so that we can go deep into the topic, and research in detail that might answer questions on how exactly the dams affect environment and what are the consequences of the impacts.

Dam is a barrier that breaks the flow of rivers. It regulates the flow of water in the rivers which is used for controlling floods, generating hydroelectricity, efficient water supply, irrigation, Navigation, recreation etc.. However by the construction of dam's aquatic life is affected, improper sedimentation occurs in the reservoir, problems like salination arise, people are displaced from the nearby areas and submerging of vegetation takes place.

The negative impacts of dams on the environment –

- **Improper sedimentation**
- **Submerge of vegetation**
- **Decrease in aquatic life population**
- **Land degradation**
- **Natural calamities**
- **Diseases**
- **Climate change are the few negative impacts of dams on environment.**

- **Improper sedimentation**

  By the construction of dams, the flow of river is blocked. The river carries the sediments all through its flow, and deposits it in the plains. However by the construction of dams this flow of river is restricted and so the river is unable to carry the sediments further in the river downstream. These sediments as a result of blockage accumulate here in the reservoir of the dam. This accumulation of sediments in the reservoir has various impacts. Firstly the flood plains downstream do not get the required sediments and so it leads to problems like land degradation. Secondly this improper sedimentation in the reservoirs affects aquatic life.

- **Submerging of vegetation**
  By the construction of dams, the vegetation around it gets submerged. The flora and fauna nearby may get trapped leading to anaerobic respiration. For example: 39,134 HA. Of land was submerged by the construction of Sardar Sarovar dam on Narmada River.

- **Decrease in aquatic life population**
  The aquatic life is affected the most by the construction of dams.
  The dam acts as a barrier to aquatic life. The migratory route of many aquatic lives is restricted by the construction of dams and so the egg laying zone of the fishes living in the stream ecosystem.
  The upstream fish movement aiming ovulation and feeding is prevented and thus fish population decreases.
  Aquatic fauna can also be affected while passing through the flood gates or pumps.
  By the construction of dams, effects like over transfer of food and increase in salt density can raise water lichens which can change the water living species.

The Sardar Sarovar dam built on river Narmada is the best example to study. The dam's main aim is to control the water supply, irrigation and hydroelectricity. However by the construction of this dam: 13,394 HA. Of land was submerged. 237 villages and 1,14,925 people were affected. It also affected many species of flora and fauna.

- **Land Degradation**

  This is the river which is fragmented by the dam. Due to this improper sedimentation takes place and so these flood plains of the river downstream are deprived of the silt resulting in the degradation of nearby land.

- **Natural calamities**

  Huge dams and extra water pressure place extra pressure and fluctuation on geological plates which increase the seismic activities and so the chances of earthquakes and floods increase.

- **Impacts on human life (Diseases)**

  The chances of epidemics increase due to the stationary waters in the reservoirs. The micro flora created; act as vectors for the transmission of diseases.

Dams however not have only negative impacts. There are many impacts of the dams on the environment as well as for humans.

Due to the change in atmospheric system there are many new species that are introduced in that particular area.

Hydroelectricity that is the electricity generated from water is the major positive point of building dams. A total of 34680.76 Megawatt of hydroelectricity is generated by dams in India. 19% of worlds electricity is generated by dams.

Dams help to regulate the flow of water, check the river and hence control floods. They also help in efficient supply of water for uses of the people like irrigation. Inland navigation, recreation, tourism etc… are also the major advantages of dams.

The following pie chart shows the various uses of dams.

These are some interesting facts and figures related to dams.

For further research on the topic of dams we had visited the Koyna dam on the 30th of November 2013.

The koyna dam is located on the Koyna River in Koyna nagar, Satara district of Maharashtra which is around 3 to 4 hours from Pune. The main aim of building the dam in 1964 was to control the flooding caused by the river Koyna in the monsoons, for hydroelectricity generation and irrigation in nearby areas.

We reached Koyna dam at around 11 am in the morning. We got the opportunity to go on to the top of the dam and next to its gates after taking a special permission and pass from the Koyna dam office. Mr V.N Kamble an officer of koyna dam helped us arrange all the things necessary to go inside the dam. After a lot of procedures and checks we could go on the top of dam with the help of a local guide.

The Shivaji Sagar Lake or the reservoir of Koyna dam is 65 KM. long with the water around 80 m deep. The dam has 20 generators. Around 560 megawatt power is generated by the dam. The dam has a catchment area of around 892 sq. km. The dam has 6 doors. The length of dam is 807 m. The Koyna dam has a lot of benefits life hydroelectricity, flood control etc..

We acquired a lot of information on the dam from the people there. Next to the dam there is an auditorium in which we got more information. There was a small video presentation arranged in the hall. We took videos from there.

All the information that is taken is from the interaction with the people there. Since it was a government restricted area, we could not record it or take videos from the dam site.

So dams have many impacts on the environment, both positive as well as negative. On one side dams provide a large number of benefits like hydroelectricity, Recreation and on the other side they affect the natural flow of rivers, the aquatic life.

From this project we could answer all the questions we had in our mind related to impacts of dams and their consequences. The challenges we faced during the course of this project were many. There was so much to research on, so many dams and their impacts. We have tried to simplify the understanding of the topic by including case studies, making models, charts etc… We would like to thank all the people who have helped us during the course of this project. We hope we were able to present our topic in the best possible way.

THANK YOU