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PROPOSAL FOR ANTI-FLOOD RESERVOIR IN CHALAKUDY

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Abstract

The recent extreme flooding of Kerala demonstrated the limitations of current flood rescue measures. As the memories of flood fade behind, we must think of safety precautions to be taken in case a flood occurs in future, so that we can control its adverse effects to a great extend. Chalakudy was one among the most severely affected areas of Thrissur district during the flood. The major towns, cities and other areas including the villages beside the river where under water during this pandemic, which not only ruin the homes, but also the major transportation systems through the entire district, hospitals and all other areas. This was mainly due to the overflow of Chalakudy river. Hundreds of people from the area had to be evacuated and stayed in relief camps for multiple months because of the adverse effects of flood. As the young Civil Engineers of tomorrow, we believe that there is a need for developing an effective solution for this problem which is necessary to help this area from future flooding. An "Anti-Flood Reservoir" is a flood control setup that include a series of underground storage tanks connected in a particular fashion to drive out the surplus water from a flooded region. The diversion of extra water to a reservoir tank is one of the proven solutions existing now, our study focusses on implementing this viable solution in the Chalakudy river area.

The major part of our study involves the study of the theoretical background from various literatures, identification of severely flood affected region in Thrissur district (Chalakudy), followed by data collection from Chalakudy Municipal Office, Academy of Climatic Change Education and Research-KAU, from expert Government authorities and Department of Soil Survey and Soil Conservation. Some among the collected flood maps are shown in fig.1.

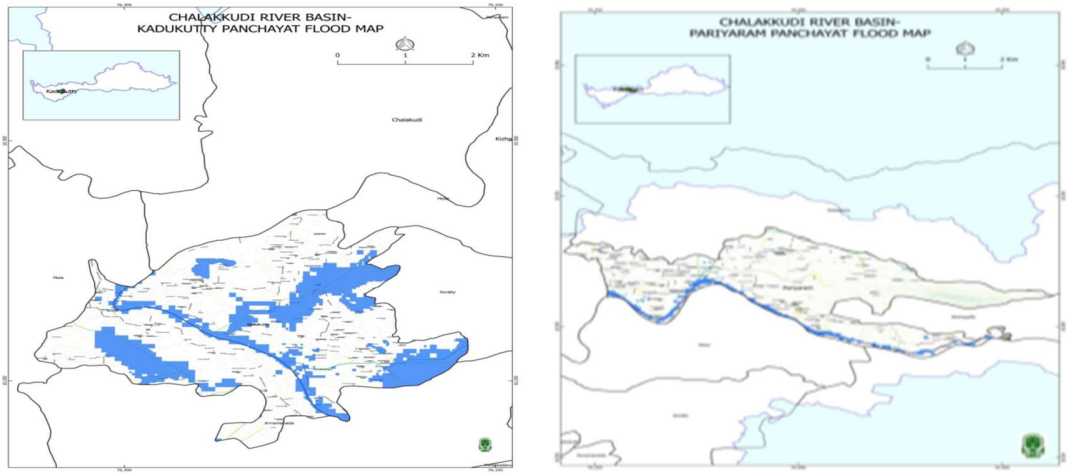

Fig.1 Flood maps of Kadukutty and Pariyaram panchayats of Chalakudy river basin

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From analyzing the flood maps and by conducting reconnaissance survey, we calculated the volume of flood water in the region selected. We came to a conclusion that 10 tanks, each of capacity 10 lakh litres placed at an interval of 100m can accommodate these flood water of the region. Reservoir and related components are analyzed and designed using IS 456:2000 and IS 3370: 2021 codal provisions. The implementation of this project will reduce the intensity of flooding in the Chalakudy region in future and thus protect the life and property of people due to this flooding issues.

Keywords: Kerala flood, Chalakudy river area, Anti-flood reservoir, IS 3370: 2021 edition codal provisions

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