Aquatic Resource Management(ARM)

Problem background:

The main requirement of farming is water but it is currently not available for everyone, mainly those who're living away from water bodies. We've encountered this problem from farmers who are probably away from these sources and are unable to get sufficient water to their crops due to over usage of water by those who were living nearby. The justification of this problem can be given by providing every area with an equal amount of water from that actually provided(canals).

Need of the project:

Farmers who are in the lowland areas are facing severe water problems. If we consider the whole picture the ones who are living in highlands (or) near to water bodies will have maximum access to water as they will be the first one's to receive water from water bodies like rivers, canals…etc. They're actually using more water pumps to draw more water. Though this is beneficial to them, due to this the lowland areas won't get sufficient amounts of water and it will be difficult to cultivate those lands.

Project Objective:

Government is taking measures to provide water to villages in required amounts but due to lack of awareness it is not being used to its extent. Only highland areas get more water than the lowland areas. In order to overcome this problem we can use advancement of IOT in agriculture and also Real time systems. We want to direct the canal water into a pipe which is built using many valves inside it and the water flows through this pipe passing through each valve. Using this we can supply water to every village in an

equal manner. Valves regulate the water flow using measurement sensors. These measurement sensors will detect the amount of water that is to be provided and will control the valve whether to be opened or closed. Let us assume that we have 5 villages that are connected to the same canal and we've connected the canal to the pipe. Pipe consists of 2 valves at each village, one is for outflow of water to the respective village and the other valve is for the next village. First all valves are closed and when the water reaches the first sensor it activates the outlet valve and required water will pass through it and gets stored in the 1st village. With the completion of water passage by the help of the sensor the 1st outlet valve is closed and the 1st interconnected valve gets opened giving a way to the 2nd village outflow and this process continues till all the villages are provided with water. We should remember that during this process the succeeding interconnected valves and the opening valves are all closed.

Motivation for doing this project:

Farmers are the ones who will get highly benefited in this as they will get more access to water resources. In the land where they previously get 10 bags of yield now they will actually get 20-30 bags of yield. As yield is proportional to profit with increase in yield it will surely increase profits to farmers. Moreover the drought prone areas will also get water by this method. With this the water will be free from any kind of pollution.