

Public Water Source Over Absorption Limiter

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Abstract

The aim of our project is to limit the over absorption of public water source. Water depended industries such as package drinking water, beverage industries, food industries, etc. These industries are completely depended on public water sources so our proposed project is to limit the over absorption by gathering data from that industries by using water flow sensor that data is transferred through IOT. That transferred data is received in the control center if any deviation in the limit of received data the appropriate measures to be taken. The measures to be switch off the motor using the relay circuit.

Keywords— package drinking water, over absorption, IOT, public water sources

I. INTRODUCTION

“We can’t imagine; One day lending money for water only free source other than air”. And also we had question in our mind that “Where is our backbone? Because especially in Tamil Nadu agriculture is routine and inexistent activity one upon a time but now it is ridiculous. Research gives that one of the resources, which is water become uncommon and inaccessible. Science tells that water is renewable one, but now a day’s quiet reducible.

In Tamilnadu is fully dependent on monsoon, but the rate of monsoon is highly variable as same as load flow analysis. State gets nearly 45% of northeast monsoon and 35% of southeast monsoon and remaining 20% from seasonal.

In last few decades leads water demand due to the huge amount of per capita consumption and the rate of population growth. Making use of the water in proper manner and not to be a sophisticated one. And various organization, NGO’s, government awareness program and social media are continuously creating awareness among the people. But not concentrating on large utilizes and water depended industries. India contains 17% of world population but only 4% of world fresh water.

II. WATER RELATED ISSUES

Nowadays world fix a limit to everything, this carryout as to wealthy future life. If anything continuously sophisticate leads to exploitation. Overexploitation of the water leads to over drafting.

Over exploitati on of the ground water leads to salt intrusion, drop in ground water level, deteriorating water quality.

Ultimately the objective of our proposed project to evicting water related issue. Various water related problem arises in Tamilnadu but the major issues leads to arising of this project is to thamirabarani issue. According to TOI says 30 lakhs liters are absorbed by water depended industries present in the thamirabarani delta. Among these 40% is wasted due to the treatment process and various issue and public strikes are arises against the water dependent industries. They were struggling by a slogan we need not to cultivate water bottles we want to cultivate green leaves that’s our one and only job and make the Tamilnadu as green state. Farmers are affected more by these industries.

“For a sustainable development of our country sustainable water is important”

“Different types of industries are depend on different source of water and produce differently polluted water waste”

III. SENARIO OF WATER DEPENDED INDUSTRIES

Water is an only free of cost resources other than the air, for that reason only the water depended industries increasing their numbers and their bore wells, as well as they absorbing the water as exceeding manner that may cause over drafting or depletion. According to the TIO, there are 961 units in India among them 350 packaged water industries are in Chennai and surrounding. From our revising of standards by an standard providing organization they only concentrating on quality of water but they not prescribing limit for water absorption and day by day the depth of the water bore well are also increasing. Increasing the number of use of bore wells in industries causes over exploitation. Various water issues related articles says that new technologies to be enabling in industries to better management of water resource

IV. PROPOSED PROJECT

For the above concern everything or every process in our world to be a limited manner. Yes, of course that is the best way so our proposal should be a limiting one by means of monitoring the absorption data of industries and sending them through IOT and

the control measures to be taken in the management center.

V. FLOW CHART AND ALGORITHM

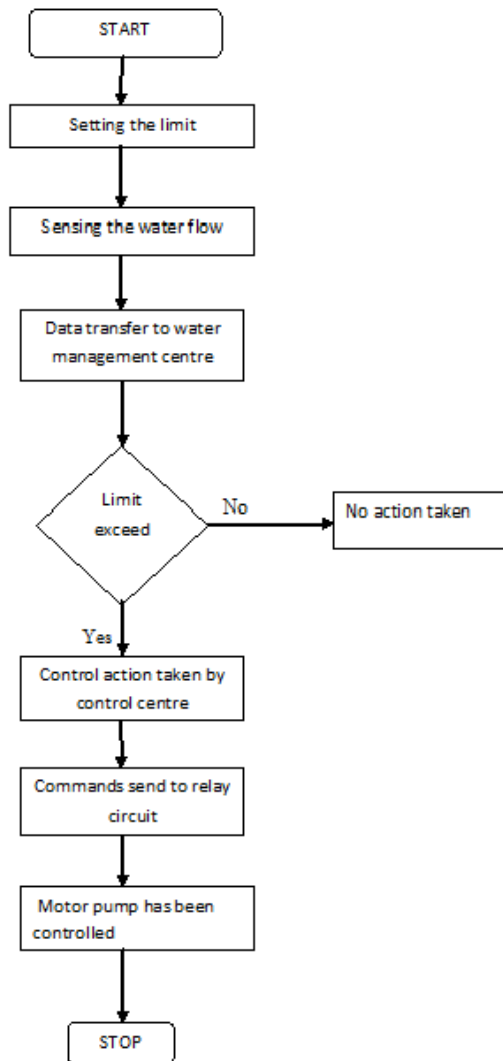


Figure: 1

Step1: Water absorption data of any industry is get using water flow sensor.

Step2: That pulsating output is converted into numerical data using AT mega Micro controller.

Step3: Numerical data is transmitted through ESP8266 wireless fidelity module.

Step4: That data is get by login the www.thingspeak website using corresponding AIP key.

Step5: The webpage that shows the sensor data if any deviation in limit appropriate measures to be taken.

VI. DATA GATHERING

The water utilization data of various industries is gathered by using water flow sensor and the data processing micro controller of each industry.

A. Flow Sensor

Water flow sensor works on the Hall Effect principle. It consists of a plastic valve body, a water rotor, and a hall-effect sensor. When water flows through the rotor, rotor rolls. Its speed changes with different rate of flow shown in figure 2. The hall-effect sensor output is an analog pulse signal. The pulse signal is a simple square wave with the voltage magnitude of 5v TTL. That output pulses are quite easy to convert into numerical values by using the formula

$$\text{Flow rate in (L/min)} = \text{Pulse frequency (Hz)} / 7.5$$

The rate of water flow could be measured by using varying pulse rate. And the total pulses per liter are 450 pulses.

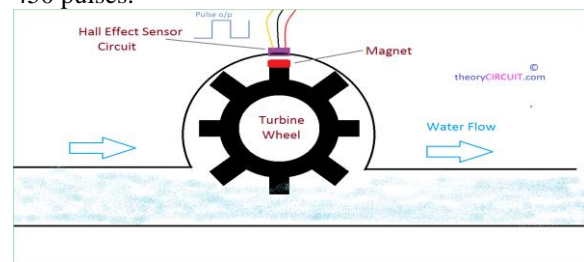


Figure: 2

B. Microcontroller

The square pulses from the water flow sensor is need to convert a digital value by using processing device is called Arduino which is a 16bit micro controller development board shown in figure: 3. By developing the Arduino sketch using the above formula we can able to convert analog into digital in the micro controller DAC. An obtained numerical value is displayed in a LCD (16/2) for monitoring the data in the industry. And also the data is transferred through IOT.



Figure: 3

VII. DATA TRANSFERRING

The numerical value from the controller is made to transmit through IOT to a water management centre. In our proposed project, we are using ESP8266 WIFI module as an IOT kit.

A. esp8266

For its simple design, low cost and easy to work with it we choose ESP8266 shown in figure: 4. In ESP8266 has a 32bit tensilica micro controller with 64kb memory and it has an operating voltage of 3.5V and current rating of 80mA. We are using

ESP8266 as a data transmitting purpose only, there is no processing. Arduino gives data as well as gets controlling action from ESP8266 by using receiver and transmitter pin. ESP8266 communicate with the external world. It has 3 mode of operation 1.Access point 2.station and 3.Both,. By using these above modes of operation we can use it what way we want!

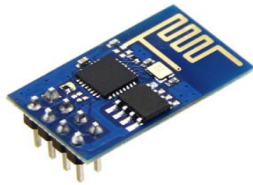


Figure: 4

VIII. CONTROL MEASURES

By creating an account in www.thingspeak.com. We can get the data whatever sends from ESP8266 WIFI module. Monitoring the water flow data of various industries in a single screen is also possible by using the login shown in figure: 5. that monitoring area is called as water management centre. When the deviation in the prescribed limit.

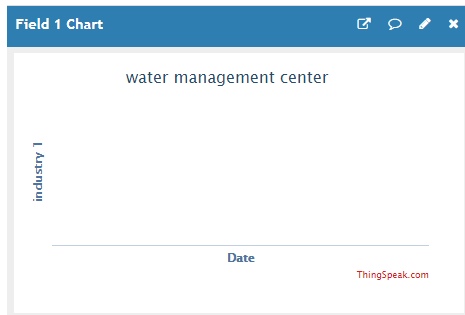


Figure: 5

The absorption of water in the particular industries is stopped by giving the signal to an ESP8266 WIFI module. That module communicates with the Arduino and finally Arduino interrupt the supply of the motor by using relay arrangement shown in figure: 6.



Figure: 6

IX. CONCLUSION

“Be alert before lending money for the free source”

Issues due to water is keep on increasing, the only way the solution to them is need to stabilize the source as sustainable one. Making sustainable is not an easy thing but limiting is the only possible way. The above proposed project installation is same as energy meter in homes, industries and various residents. Energy meter is difficult to disconnect and doing any changes likewise we install our project and monitoring an absorption data of various industries. IOT is an only solution to lot of issues in current scenario. Limitation value of the any industries is a changing one, depending on availability of public water source nearer where they installed. We need to consider water dependent industries also for their profitable business. This is the right time to implement this project in our country, comes under safe zone in water source availability.

“Farmers anticipate lot of solution from engineers”. Our proposed project will meet out.

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