Smart rainwater harvesting

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ABSTRACT

Smart rainwater harvesting is a system. This system will used for storing of rainwater and increasing water level of ground. We are facing very problem of water. So we need a system for saving of water. This system will use for saving of rainwater and increasing water level of ground.

1. INTRODUCTION

Smart Rainwater harvesting is a system. This system will use for storing of rainwater and increasing water level of ground. Rainwater will use for domestic work and in another work like agriculture and farming.

2. WHY THIS CHOOSEN

This system will be used for storing of rainwater as well increasing water level of ground. This water will be used for domestic purpose, etc. Today we are facing very problem of water. Water level of ground is decreasing. So we need of water. But on 70% surface of earth water is exist. But we can't use this water. This is very impure water. So we can't use this water. Rainwater can use for drinking of water and in another work. For storing of rainwater we need of a system. So this system will help us for storing of rainwater. So we need this system.

3. FUTURE SCOPE

Future scope of this system is very high. Because water problem is very high so we need of water in future. This system will help us for saving of water in future.

FUTURE

TIME
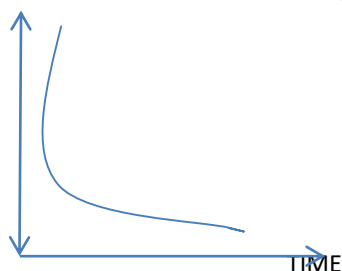
4. ADVANTAGE

* This system is very cheapest for installing.
* Future scope of this system is very.
* This system is not harmful for our body.
* Very easy storing of rainwater from this system.
*This system will not create any pollution.
* This system will increasing water level of ground.

5. DISADVANTAGE

* This system will take large area for installing.
* limited water can store from this system .
* We can't travel this system from one place to another.

5. MATERIAL

SOME MECHANCAL COMPONENT

5.1 WATER TANK

Water tank is important part of this system. The purpose of this system is storing of rainwater. Rainwater will store in water tank. Water tank should be large because more amount of water can store in large water tank. Amount of water depend upon size of water tank.

5.2 UPVC PIPE

Pipe is a medium for travelling of water. Quality of pipe should be better. When water will travel from this pipe then pressure of water will increased from pressure of water this pipe can be break so need better quality. The amount of water for travelling depends upon the size of pipe. The size of pipe should be 3 inch to 4 inch.
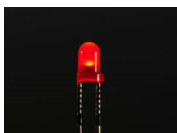
SOME ELECTRONICS COMPONENT

5.3 ARDUINO
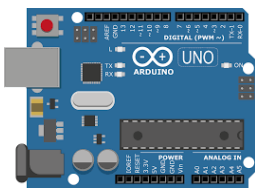
Arduino is controller. This will be used for receive the signal from sensor and take some decision. After receive the signal from sensor. It will send signal to led and alarm.

5.4 LED

Led will used for show the amount of water. That water will store in water tank.

5.5 WATER LEVEL SENSOR

Water sensor will used for sense the amount of water. That water will store in water tank.

5.6 WATER PUMP

Water pump will used for travelling of water from water tank.

5.7 SOLAR PANEL

Solar panel is used for recharge the battery and when raining will not exist then it will be used for operate the water pump and other component like arduino and sensor.

5.8 ALARM

Alarm will used for alert. When water will be fill in water tank.

5.9 BATTERY

Battery will use as a source for arduino and led and another electronics component.

5.10 FILTER

Filter will be used for remove impurity from rainwater.

SOFTWARE REQUIRE

Arduino programming will be from application software.

6. DESIGNING AND INTALLING

First of all we will need of all component for designing of this system and place where this system will be install. For designing of this system we will need sufficient size of water tank. Size of water tank depends upon the height and width of water tank.

In above figure horizontal line show the width of water tank and vertical line show the height of water tank.

(Size of water tank =H ✖ W)

Now this tank will install after installing of this tank. Pipe will connect from water tank to roof of home and building and now water pump will connect from water tank to pipe after connecting the water pump. Now water level sensor will connect inside of water tank to arduino and alarm will connect from arduino after this led will also connect from arduino. Now battery will connect from water pump, arduino, water level sensor, alarm, led and solar panel.

After connecting of all components it will ready for testing and verify process. In this system testing of arduino and water pump is very important. Before installing of system give some instruction from application software to arduino for measure amount of water and alerting of water. Testing of arduino will be by this process. When water tank will fill from water as well as water level sensor will sense the amount of water. After sense the level of water sensor will send signal to arduino then arduino send signal to led and then led will show amount of water in litre. After full of water sensor will send signal to arduino and then arduino will send signal to alarm then alarm will alert that tank have filled from water. This process will be for testing of some component.

When rainwater will fall on roof of home then this water will travel by pipe to water tank. This rainwater will be pure by filter and then this water will be store in water tank. Now in water tank water level sensor is connected. This water level sensor will sense the amount of water after sensing the water level of tank. This sensor will send signal to arduino and then arduino will receive this signal after receiving the signal arduino will send the signal to led and led will show water level of tank. When water tank will full from water then alarm will alert that water tank has filled from water. When water tank will full then this rainwater will increasing water level of ground. In this system two gate will connect one gate will connect pipe to water tank and second gate will connect pipe to ground. When water will flow from roof to water tank then first gate will be open and second gate will be closed. When water tank will full from then first gate will be closed and second will be open. This gate will be permit of water roof to inside of earth. This water will increasing water level of ground.

This is main advantage of this system. This system will increase the water level of ground as well as store the water for future use.
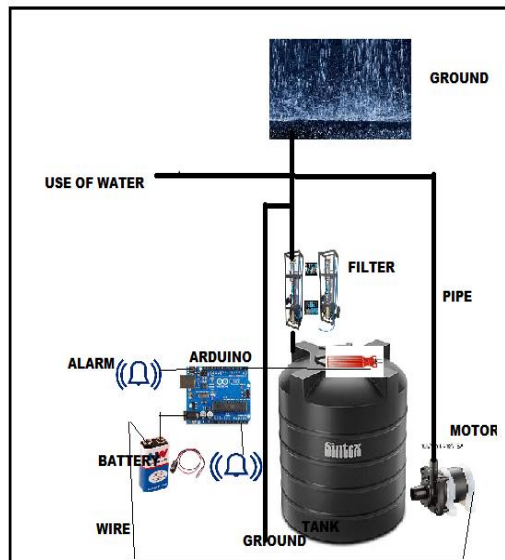
Figure: - INSTALLATION OF SYSTEM

7. CONCLUSSION

Rainwater harvesting a system which will be used for storing of rainwater as well as this system will increase the water level of ground. Because water level of ground is decreasing time to time so we are facing very problem of water so we need a system for saving of water. So this system will help us for saving of water.

8. REFERENCES

All material made by self.