Analysis of Water, Supply System of Water and Water Conservation in Agricultural Sector

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Abstract: With the population growth & social and economic development, water wastage is becoming a serious issue worldwide. Especially in the agriculture sector the wastage of water is increasing day by day and it cannot be ignored, as the agriculture is the important part of the Indian economy. Research concludes that almost more than 2/3 of the water from the earth's river, lake and aquifers are used for irrigation in the agricultural area. This wastage of water in this field is the biggest problem now-a-days. Through there are more developed irrigation system in agricultural sector, the wastage of water cannot be control. According to the survey done there is a need of making some changes in the irrigation method or inventing modern irrigation technique for saving the wastage of water in the agricultural sector.
Index Terms - Component, formatting, style, styling, insert.

Introduction:
Irrigation helps to grow agricultural crops, maintain landscapes, and distract the distributed soil in dry areas and when there is less than average rainfall. Irrigation also has other uses in production, including frost protection, defeating weed extensions in grain fields and preventing soil combination. The purpose of irrigation is to supply adequate amount of water for agricultural crops, although there is more usage of water than the water required for the plant and vice versa, this lead to the problem of water wastage in agricultural field and the more usage of water in this field can harm the crops too. Humans draw to irrigate much more water than the amount which the planet is able to provide. Sprinkling for irrigation uses, in many zones there is increase in the water capacity of water flows, rainfalls and reneuatition of nature reserves. Due to this wastage of water, whenever there is delay in arrival of rainfall, people face the problem of water scarcity. When you are calculating the water requirements it is very important that all future needs are considered. The wastage of water varies depending on the different types of land and the crops that are cultivated. Upgrading water infrastructures is an expensive and time consuming activity. According to the needs of the common citizen and the farmers, it is vital that new techniques for saving the water should be introduced.

LITERATURE SURVEY:

Dan bai in his research paper he suggested the "optimal planning mathematical model" for the purpose of saving water in the agricultural field. In this paper using some mathematical equations he suggested that the plants get more water than the actual water required for the plants. He also stated that agriculture water saving irrigation can be obtained based on the agriculture water resources using this module.

Yinhong Kang in his research paper he proposed the water saving module in agricultural area called "Soil-Water-Atmosphere-Plant" (SWAP). This module works on the concept of the soil i.e. the amount of water required for the different types of soils in different atmospheres.

In his paper gourav kumar uses the technique of automatic irrigation based on the electric sensor. He concluded that this system delivers water to the area where the water is needed according to the capacity of the plant i.e. water required for the plant.

Dataset Description:

The dataset has been taken from the survey done in the local area and it consists of 10 attributes. We got more than 350+ responses for this survey. This survey was share on the social media to know exact problem of water wastage in the agricultural sector. When the people were asked question about the need for inventing water saver in the agricultural field more than 70% people said, "yes there is need of water saver in the agricultural field". More questions were asked such as does they have personal water source, is there wastage of water in their agricultural area, etc. And the reply to these questions was given by the farmers and the citizens from the local area.
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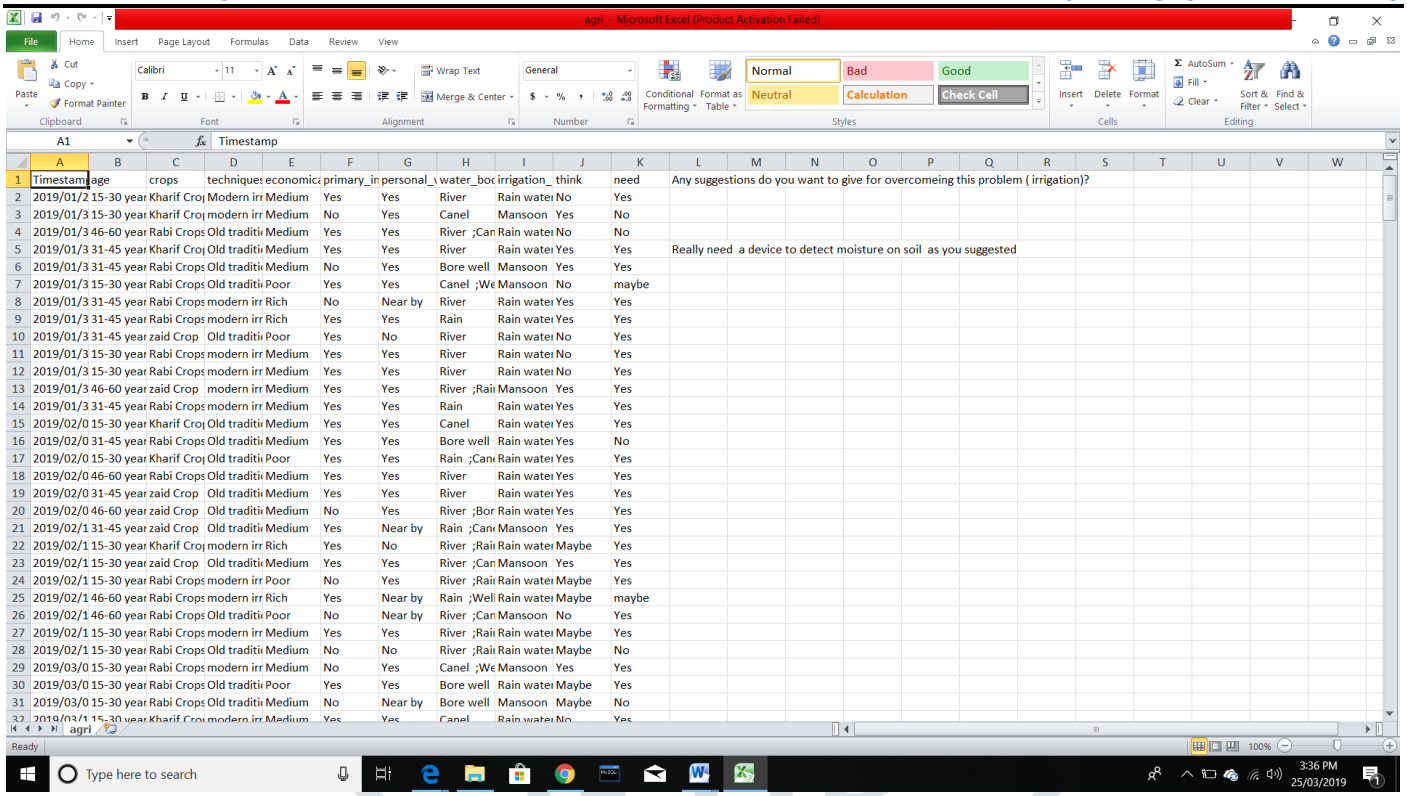

Timestamp	age	crops	techniques	economica	primary_in	personal_v	water_boc	irrigation_	think	need	Any suggestions do you want to give for overcomeing this problem (irrigation)?
2019/01/2	15-30 year	Kharif Cro	Modern irr	Medium	Yes	Yes	River	Rain wate	No	Yes	
2019/01/3	15-30 year	Kharif Cro	modern irr	Medium	No	Yes	Canel	Mansoon	Yes	No	
2019/01/3	46-60 year	Rabi Crops	Old traditi	Medium	Yes	Yes	River ;Can	Rain wate	No	No	
2019/01/3	31-45 year	Kharif Cro	Old traditi	Medium	Yes	Yes	River	Rain wate	Yes	Yes	Really need a device to detect moisture on soil as you suggested
2019/01/3	31-45 year	Rabi Crops	Old traditi	Medium	No	Yes	Bore well	Mansoon	Yes	Yes	
2019/01/3	15-30 year	Rabi Crops	Old traditi	Poor	Yes	Yes	Canel ;We	Mansoon	No	maybe	
2019/01/3	31-45 year	Rabi Crops	modern irr	Rich	No	Near by	River	Rain wate	Yes	Yes	
2019/01/3	31-45 year	Rabi Crops	modern irr	Rich	Yes	Yes	Rain	Rain wate	Yes	Yes	
2019/01/3	31-45 year	zaid Crop	Old traditi	Poor	Yes	No	River	Rain wate	No	Yes	
2019/01/3	15-30 year	Rabi Crops	modern irr	Medium	Yes	Yes	River	Rain wate	No	Yes	
2019/01/3	15-30 year	Rabi Crops	modern irr	Medium	Yes	Yes	River	Rain wate	No	Yes	
2019/01/3	46-60 year	zaid Crop	modern irr	Medium	Yes	Yes	River ;Rai	Mansoon	Yes	Yes	
2019/01/3	31-45 year	Rabi Crops	modern irr	Medium	Yes	Yes	Rain	Rain wate	Yes	Yes	
2019/02/0	15-30 year	Kharif Cro	Old traditi	Medium	Yes	Yes	Canel	Rain wate	Yes	Yes	
2019/02/0	31-45 year	Rabi Crops	Old traditi	Medium	Yes	Yes	Bore well	Rain wate	Yes	No	
2019/02/0	15-30 year	Kharif Cro	Old traditi	Poor	Yes	Yes	Rain ;Can	Rain wate	Yes	Yes	
2019/02/0	46-60 year	Rabi Crops	Old traditi	Medium	Yes	Yes	River	Rain wate	Yes	Yes	
2019/02/0	31-45 year	zaid Crop	Old traditi	Medium	Yes	Yes	River	Rain wate	Yes	Yes	
2019/02/0	46-60 year	zaid Crop	Old traditi	Medium	No	Yes	River ;Bor	Rain wate	Yes	Yes	
2019/02/1	31-45 year	zaid Crop	Old traditi	Medium	Yes	Near by	Rain ;Can	Mansoon	Yes	Yes	
2019/02/1	15-30 year	Kharif Cro	modern irr	Rich	Yes	No	River ;Rai	Rain wate	Maybe	Yes	
2019/02/1	15-30 year	zaid Crop	Old traditi	Medium	Yes	Yes	River ;Can	Mansoon	Yes	Yes	
2019/02/1	15-30 year	Rabi Crops	modern irr	Poor	No	Yes	River ;Rai	Rain wate	Maybe	Yes	
2019/02/1	46-60 year	Rabi Crops	modern irr	Rich	Yes	Near by	Rain ;Wel	Rain wate	Maybe	maybe	
2019/02/1	46-60 year	Rabi Crops	Old traditi	Poor	No	Near by	River ;Can	Mansoon	No	Yes	
2019/02/1	15-30 year	Rabi Crops	modern irr	Medium	Yes	Yes	River ;Rai	Rain wate	Maybe	Yes	
2019/02/1	15-30 year	Rabi Crops	Old traditi	Medium	No	No	River ;Rai	Rain wate	Maybe	No	
2019/03/0	15-30 year	Rabi Crops	modern irr	Medium	No	Yes	Canel ;We	Mansoon	Yes	Yes	
2019/03/0	15-30 year	Rabi Crops	Old traditi	Poor	Yes	Yes	Bore well	Rain wate	Maybe	Yes	
2019/03/0	15-30 year	Rabi Crops	Old traditi	Medium	No	Near by	Bore well	Mansoon	Maybe	No	
2019/03/1	15-30 year	Kharif Cro	modern irr	Medium	Yes	Yes	Canel	Rain wate	No	Yes	

Data Visualization:

Data visualization is the graphical representation of information and data. By using visual elements like charts, graphs, and maps, data visualization tools provide an accessible way to see and understand trends, outliers, and patterns in data.

1. Histogram:

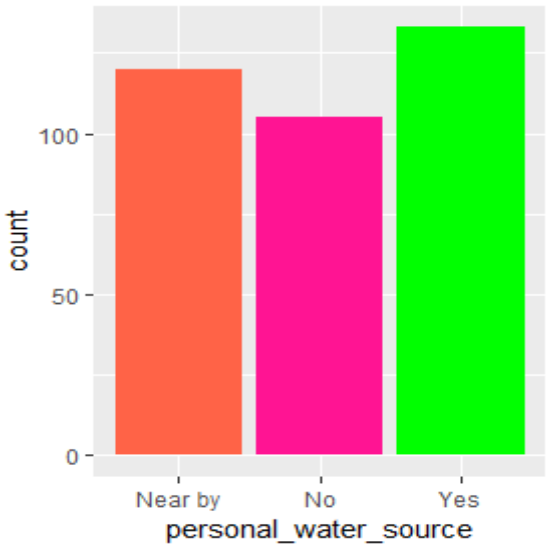

Fig (1)

The above graph tells us about the number people having personal water resources. The graph states that maximum number of people is having personal water sources and less number of people are using nearby sources.

2. Pie chart

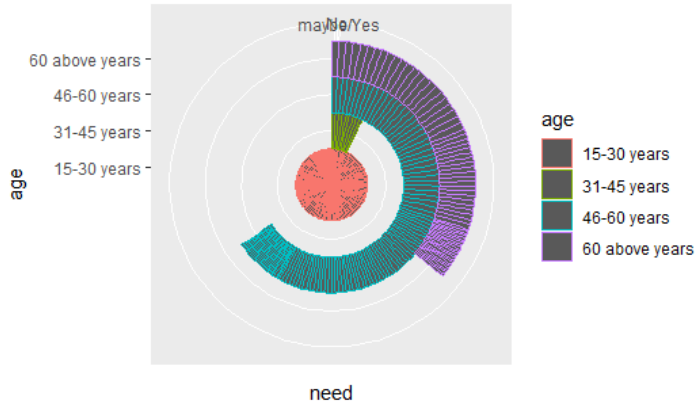

Fig (2)

The following pie chart explains us that the age group from 31 to 45 years people tells us that there is need of the sensor for saving the water in agricultural field. As they are having the experience in this field.

3. Bar graph:

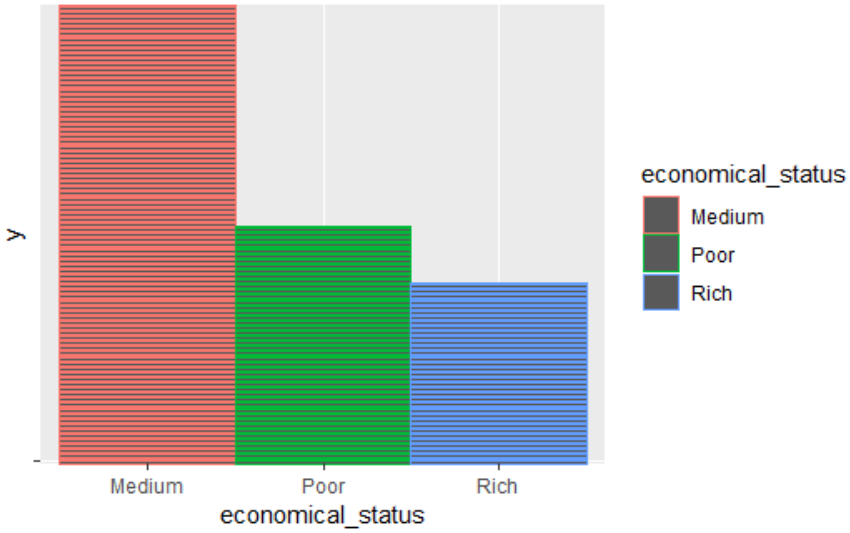

Fig (3)

The following graph tells us that the people having medium economical status are doing more farming and we can conclude that the product that will manufactured for this solution should be of medium budget.

4. Plot

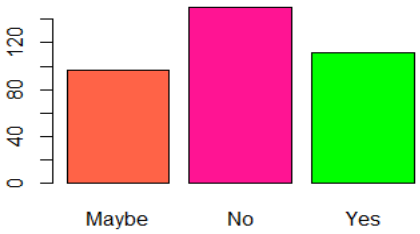

Fig (4)

The following plot explains that the more number of people are saying that there is wastage of water in the agricultural field (yes+maybe).

5. Jitter plot:

Fig (5)

This graph says that the age group between 15 to 30 years people has awareness of the water consumption and the age groups above 60 years are less aware of water consumption.

OBSERVATION:

The researcher has observed the knowledge and details of different age groups, and different profession, people and the water supply and its requirements. The researcher has clearly observed that peoples (people participated in survey) are not aware of the water supply and the main reason behind the water shortage. People are aware of water shortage but not aware of the unnecessary water supply in non-water needed areas. Some land areas do need more water and some doesn't need water at even normal level. And by observing this all reviews of the peoples the researcher has mainly observed that there is lack of knowledge of the water supply and lack of awareness about land and soil in the respect to water needed.

PROPOSE SYSTEM:

As we came to know that there is lot of water wastage in the agricultural field this wastage of water should be stopped as soon as possible. we all know that the crop get more water than they need, no one has the idea that how much water does some plants need for example mango tree need 230 liters water per day. But mango tree gets more than 230 liters of water per day. This leads to the wastage of water, and it is harmful for the plant too. This wastage of water can be stopped by applying the sensor to water body or to the water connection i.e. how much liters of water does a specific plant or crop needs should be set in that sensor, after reaching water need of plant the water supply will automatically stop due to the sensor connected to the water body.

CONCLUSION:

The researcher has observed the knowledge and details of different age groups, and different profession, people and the water supply and its requirements. The researcher has clearly observed that peoples (people participated in survey) are not aware of the water supply and the main reason behind the water shortage. People are aware of water shortage but not aware of the unnecessary water supply in non-water needed areas. Some land areas do need more water and some doesn't need water at even normal level. And by observing this all reviews of the peoples the researcher has mainly observed that there is lack of knowledge of the water supply and lack of awareness about land and soil in the respect to water needed.

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