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A SURVEY OF AGRICULTURE LAND DROUGHT IMPACTS AND DROUGHT MONITORING

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ABSTRACT

In many countries, drought is that the natural hazard that causes the best agronomic impacts. When continual droughts, farmers generally learn from expertise and implement changes in management to scale back their future drought risks and impacts. This paper aims to know how irrigated agriculture during a damp climate has been suffering from past droughts. When examining recent drought episodes from Associate in Nursing agroclimatic perspective, info from an internet survey was combined with proof from semi structured interviews with farmers to assess: drought risk perceptions, impacts of past drought events, management methods at totally different scales and responses to future risks. Interviews with the water administrative unit were conjointly conducted to explore their attitudes and decision-making processes throughout drought events.

The results highlight however agricultural drought management methods evolve over time, together with however specific aspects have helped to reduce future drought risks. The importance of adopting a vertically integrated drought management approach among the farming sector together with a much better understanding of past drought impacts and management choices is shown to be crucial for up higher cognitive process throughout future drought events.

Keywords: Adaption, Drought Management, Agriculturist, Water Resources.

I. INTRODUCTION

Drought, one among the foremost complex environmental catastrophes, continuously has an impact on the remainder of the planet [1]. It occurs naturally altogether climatic areas, like pluvial and arid areas, and causes many economic, environmental, and social costs round the world [1-4].In recent decades, drought has been one among the most expensive natural disasters that has created major challenges in water resource management. The worst and most damaging drought periods within the last 50 years [6]. During this 3-year period, water shortage in additional than 270 cities fell right down to below the juncture, and as a result, thousands of villages lost their beverage , surface water flow decreased to 55%, and tanks were forced to act with minimal capacity for water transfer due to low input flow and heat[6-7]. So, during this era, the country faced differing types of droughts, like meteorological, hydrological, agricultural, social, and economic droughts simultaneously. Drought prediction may be a major concern for water managers, farmers, and other final users because it limits their decisions. Since droughts have slowly begun, it's possible to present temporal forecasts so as to require measures and develop policies to scale back the consequences of droughts [8-10].

II. LITERATURE SURVEY

Anjum Awasthi and Reddy[11] proposed a sensible agriculture also referred to as precision agriculture allows farmers to maximise yield using minimal resources like water, fertilizer and seeds. By deploying sensors and mapping fields farmers can begin to understand their crops at a micro scale, conserve resources and reduce impact within the environment. Advances in device technology has conjointly tested useful to the agricultural trade through its application for baseball diamond soil analysis.

Arunaet al [12] planned the beaux arts style to observe the crops. During this implementation model we used Arduino UNO board, Sensors and ESP8266Wi-Fi module as an embedded device for sensing and storing the information in to cloud.

Barshe and Chitre [13] proposed the widespread of Internet within the last 20 years brought countless benefits to citizens and organizations round the world. Arguably the foremost important benefit was the power to

consume and produce data and services in real time. Recently, the web of Things is promising to bring a similar edges to everyday objects, giving U.S. the way to increase our perception and our ability to modify the surroundings around U.S.

Farooq [14] For ceaselessly increasing demand of food requirements, it's vital to speedy improvement in production of food technology. Agriculture in just the source to supply this. This is often the important think about human societies to growing and dynamic demand in food production. Agriculture plays a crucial role in economy and development.

Xia et al [15] proposed A automatic irrigation technique using wireless sensor network i.e. Zig-bee and internet technology. The thought was developed for improve irrigation system and reduced cost of irrigation water. Sensors are placed in farm and sensecontinuously and collect the information. This info hold on at center monitor and conjointly passes to information assortment interface then transmits to the wireless device node. Using this, system was management mechanically exploitation web.

Muthupandian [16] A survey on IOT based mostly digital agriculture observance system and Their impact on optimum ZigBee and GSM based sensible device network for agriculture was used for mensuration environmental parameter like temperature, wetness and wetness of the soil. This is ARM processor based technology which works as a base station, which collects data from sensor node and transmitted to monitoring system in wireless. This technology uses internet protocol for data storage and monitoring.

Rekha and Muthuselvi [17] Thermal imaging is employed for irrigation within the crop field. There is no would like for modifications among the surface temperatures once thermal imaging technique is used which can be a noncontact and nonintrusive technique water stress, gas exchange, evapotranspiration rate stomatal electrical phenomenon. As a results of this the cover temperature will increase. The stomata begin to shut and transpires thus the plants starts heating order to measure stomatal electrical phenomenon, plant temperature and evapotranspiration rate by crucial stomatal responses, thermal remote sensing is used.

Suchitra and Ramkrishnan [18] the foremost objective of this paper is to vogue associate IoT (Internet of Things) primarily based Temperature and wetness observance system for an agricultural surroundings. Monitoring agricultural surroundings for temperature, wetness and soil wetness beside alternative factors is important for a healthy and rich cause, that improves the productivity of farmers by exploitation technology driven farming.

Patilet al [19] A system exploitation sensors that monitor totally different conditions of surroundings like water level, humidity, temperature etc., the world condition is shipped to the farmer via mobile text messages and email from the specialists. With this method device node failure and energy potency ar managed.

Parameswaran and Sivaprasath, [20] within the field section, numerous devices ar deployed within the field like temperature sensor, wetness device. The data collected from these sensors ar connected to the PIC microcontroller. The PIC microcontroller 16F877A is one among the fore most common micro controllers among the trade. it's user convenient and easier to handle. The committal to writing or programming of this controller is in addition simple. it's used in security, remote sensors, home appliances and industrial automations.

III. DROUGHT PERCEPTION

Drought may be a well-known climate-related natural hazard and is reported because the most expensive. Consistent with the National Drought Mitigation Center (NDMC), drought can generally be defined as a deficiency of precipitation over Associate in Nursing extended amount of your time that leads to a water shortage. A universal definition of drought has not been prescribed, making it difficult for policymakers to develop drought plans and allocate funds to drought-stricken areas. Unlike tornadoes or tropical systems, the start and end of droughts are sometimes hard to work out .Also unlike other climate-related natural hazards, droughts are usually long in duration and should cover an outsized region. The physical boundaries of areas suffering from drought are also sometimes vague [21].

IV. DROUGHT IMPACTS AND VULNERABILITY

Although drought is an extremely costly climate-related natural hazard, little or no has been done to research the impacts of drought for various regions. Drought often creates a posh set of convoluted impacts which will be either direct or indirect. A drought impact assessment may help to determine areas of drought vulnerability, also as subsequent vulnerability reduction strategies; however, only a few state drought plans have vulnerability analyses incorporated into them. Factors to think about when identifying drought vulnerability are variation of precipitation, water supply-and-demand balance, water use patterns, and preparedness. The NDMC has identified three steps that ought to be followed to work out a region's drought vulnerability: 1) identification of drought impacts and trends over time, 2) ranking of serious drought impacts, and 3) investigation of underlying causes of drought impacts [21].

V. DROUGHT PLANNING

The drought planning initiative has been placed upon state governments. While a majority of states have implemented drought plans, the sort of plan implemented varies from state to state. Most states have drought plans that emphasize response meaning the plan focuses on addressing drought-related issues during and after a drought. There are several states that have implemented plans emphasizing mitigation that are more focused on taking preventive measures to attenuate impacts before a drought occurs[21].

VI. CONCLUSION

A comprehensive discussion on the role of drought indices for global climate change assessment is provided during this article. Drought is a serious challenges in all countries. Droughts along with water mismanagement especially in agriculture sector threats the local sustainable development. To deal with this emerging problem some adaptation policies and measures was recommended by local public institutions. These measures were designed and selected according to the reported problems of agricultural sector. Farmers have different reactions to the same propositions. In some districts they accept them and in some districts they reject them. Assessing the social acceptance of drought management measures can help the planners and decision makers while designing and formulating policies for better drought adaptation measures and community resilience [22].

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