

Research Article

CONSEQUENCES OF DROUGHT AND PROPER MANAGEMENT PRACTICES TO COUNTER WITH IRAN

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ABSTRACT

Offset the decline in agricultural production due to shortage of water is possible through multiple avenues including that it can raise the efficiency of irrigation, development of production management systems mentioned. In recent years studies showed that drought has reduced the quality of surface water resources as rising consumption and withdrawals and discharges of pollutants and reduce the quality of agricultural drainage, atmospheric data, geographical and agricultural shows. Drought creates many economic and social problems and affect different parts of people's lives on society and the specific purpose of training can be done in different ways drought and crisis management be involved. As a result, agricultural water management during drought should be tried modern and innovative programs to improve water efficiency in agriculture, Modification, application usage patterns of drought indicators. Due to drought and water productivity in agriculture are considered professionals and beneficiaries. Finally, to deal with drought, many years in the future should be used for short-term and long-term strategic.

Keywords: drought, management, optimal use and Education

INTRODUCTION

Basically, producing agricultural crops is dependent on two major factors 1 - value and cost effectiveness of such work force, quality and quantity of agricultural inputs, planting time type of seed 2 climatic conditions such as the amount and frequency of rainfall and temperature tensions. The first factor is usually in periods of long-term changes because production costs are somewhat fixed for a year until another is gradual and continuous. However, climatic conditions and other factors such as annual rainfall and its distribution have changed during the months and years. The main cause of climate change in a quantitative and qualitative difference in performance between the various crops. Water impact on the performance of each plant is different. Grain yield, forage crops, sugar beets, fruits, each affected by the amount of water that can be placed Major agricultural development in our country has been focused on increasing grain yield of crops has had a major role in the total development. So grain response to water use efficiency and amount of water Drought is a word that has different with the dry and in the entire climate such a situation is possible. Lack of rain in a long-term period so that the cause of this lack of soil moisture and water will reduce causing social and economic developments Environmental stresses and ecosystems, many plants and animals and the environment exerts Influence of drought on agricultural crops or forest and causing to be dry the soil. Destroy crops and pastures and livestock Hydrological drought the water table is low. Dubai fountains and rivers and lakes water level was low and the plants are under stress The country had a plan for dealing with drought Programs were based on appropriate actions and knowingly Drought damage varied Damage which includes economic, social, and is a mental health In most parts of Iran, all the water needed for plants and animals in the agricultural sector with irrigation is provided According to the seasonal drought that has caused depletion of underground water resources and reach a critical stage. It is essential most use of water in preparing with help of modern technology is the source of water with the implementation of effective and efficient methods of irrigation water was distributed.

Drought Effects on Water quality

During the last three years of drought in the country has reduced surface water quality So that water resources quality has been destroyed Resulting in a discharge of pollutants, particularly has been in

Research Article

agricultural drainage (Afkhami, 2005). It is necessary to reduce the pollutant source pollution, pesticides and fertilizers in agriculture is one of them be reduced That is suggested, modified cropping patterns and irrigation Enforce laws and regulations to reduce harmful pesticides and fertilizers implemented by regulatory To reduce pollution from wastewater discharges in rivers And ground water wells and drains water fields are required As well as advanced technique and high-efficiency irrigation techniques And reduce water pollution from agricultural return and will recommend. Currently the best way to manage water in times of drought According to the research conducted in the country of Iran in agricultural sector the use of modern irrigation systems (Nader, 2008):

- 1 - Trickle irrigation System
- 2 - Sprinkler irrigation system
- 3 - Surface irrigation modernization including irrigation pipe valve

Trickle irrigation a modern irrigation methods evolved under pressure in which water drops Emitters used by the plants and trees and water consumption is minimized. Among the benefits to be included as drip irrigation

- Saving water consumption
 - Increase the consumption of the product
 - Lack of water in the fruit and leaf and stem growth, which however fall ill and does not damage the plant.
 - Simple irrigation and reduce manpower in irrigation
 - Wind is ineffective waste water droplets
 - Add millet and other agricultural inputs by irrigation system efficiently.
 - Growth Problems and have not increased density of weed and no money to spend, for controlling
- 8 - The product is effective in increasing the quality and the quality

Hydro or Irrigation Pipe Valve

One of the methods the use of modern irrigation techniques that eliminates some of the weaknesses surface and flood irrigation, valve is used and doing irrigation pipe valve is easy to use r irrigation pipes. To combat weeds and prevent soil erosion and excessive water evaporation Farm More than 70 percent of the water use efficiency increases.

Sprinkler Irrigation

In This way, water pressure inside the pipe network flows then from output of the embedded network as droplets came out. Benefits of this approach include:

- Saving Water
 - Irrigation steep terrain
 - Possibility to reduce irrigation water
 - Irrigation in different weather conditions and for various plants
 - With this method we can reduce the flow of surface water and soil erosion
 - Reduce manpower
 - Lack of harassment in the implementation of other agricultural operations
- 8-from freezing in land and prevent the heat around the plant

Executive Ways Tackle Drought

To implement coping with drought three approaches to the design Used simultaneously:

- In a long-term remedy

The set of decisions taken to avoid damage to the environment which help identify the causes of environmental degradation and gave a positive outlook. These provisions must be made with public participation and international cooperation.

- In the medium term drought management (risk management): First, search for appropriate behavior and follow a plan to reduce the devastating effects of drought. The measures include:
 - Nutrition cultivated plants with good drought conditions
 - Further generalizing drought insurance for crops
 - Genetic adaptation to drought conditions

Research Article

- Adapted crop plants resistant to drought
- Association Insurance Fund and the income of farmers dealing with events such as droughts
- Formation of Disaster Management (Management of short-term:

For short-term services in less time when drought and least cost planning authorities should constantly prepare for logistics supply during drought without haste and panicky. The basic steps of disaster management are as follows:

- Financial assistance to the victims out of the hardships and difficulties of life
- Providing facilities and equipment for cultivation and production of drugs for vets
- On time and prepared to deal with human and animal diseases caused by drought
- Purchase and supply of surplus animals for Dam darn
- Supply of feed and fodder for Dam darn

Non-potable water can be used in time of drought that was unused Strategies for reuse of these waters did which includes: use of artificial recharge from groundwater, Consumption on agriculture Industrial uses for recreational use (Hussein, 2008).

- Artificial recharge to ground water, Waste water can be transferred artificially after settling into groundwater and aquifer water loss prevented.
- Agricultural use, Can be Considering that the sewage water for green space around cities use In many parts of the country due to lack of water in the dry lands And due to consecutive droughts As water reuse treated wastewater used for agricultural purposes.
- Industrial uses, most industrial factories have high water consumption, with the changes in the production process and save water, wastewater, and use. The wastewater of industrial Factory re-uses again to save water and be justified in economic terms.

Water Consumption in Recreational Regions

After the purification of waste water can be used for water supply somewhat artificial lakes for boating and swimming, parks and green space irrigation use.

Optimal Use of Management of Water in Agriculture

New technologies such as pipes, valve Or hydroflom that principles of flood irrigation has been partially successful. If you use flood irrigation, wasting water occurred and why it is not recommended but with little cost Irrigation method can be corrected that cost is effective and the amount of 25-28% of the avoided this irrigation method and cost will be compatible with all fields Benefits pipe valve can be noted the following:

- The cost of maintaining affordable
- Need to take care Hostels If the cutting off water
- The transfer of the pests and prevent weed seeds of farm
- The movement of water with maximum time efficiency
- To prevent the erosion of soil and water
- Crop yield until somewhat is increased

It is also one of the ways of water management consumption And reduce waste water Using technology to water storage method Small water tanks or pits Water in the bottom Furrows and prevent runoff Soil surface This will increase water infiltration and of flowing on track and avoid wasting water Using tillage systems and irrigation Furrows blocked by atmospheric boundary method Or repository tillage By groove section (Amin, 2009).

Role of Training for Drought Management

Looking at the geographical position of Iran on the dry belt Drought earth with a third of the average annual precipitation than the global average And evapotranspiration Position, ranking eleventh in natural disaster-prone countries Event 31 Of natural ills 40 natural disasters in our country, it is noted that Authorities should pay special attention to this section. Survey hints Representatives in Islamic Council Most of these notes are for damages, including damages caused by the drought. Drought Management is a comprehensive management Drought Control system in order to reduce it includes should have the flexibility to drought and not government whole burden and role of people they must be felt with the

Research Article

training. Efforts to educate and train people Management and planning for the transfer of knowledge and technical expertise of the Day to combat the drought must be done by the government. The role of education in the time fields of work capacity increases drought Training creating healthy communities is associated with a healthy economy (Hassan, 2002). Educational facilities should be readily available to the people to make their Talents and transmission and spread the knowledge to combat drought. These advantages include the ability of individuals to exercise their talents in the industry have made it possible for employment opportunities, and social and cultural connections are created.

Pasture Management Strategies for a Model in Drought Conditions

- Determine the biological drought pasture plants based on calendar and quantity of rainfall
- Monitoring the changes in terms of production and survival of plants in rangelands
- Determining homogeneous ecological zones Rangelands
- Determine the appropriate method of developing drought resistant crop species, ranges from a monitoring project
- The use of agricultural wastes for animal fodder in drought style
 - Determine the criteria to reduce livestock in drought conditions.

Suggestions for Dealing with Drought and Implementation of New Methods

- Strengthening and applying scientific principles to agriculture weather
- The drought in different regions to evaluate the strategies and drought problems
- Planning and implementation of conservation programs and to rationalize water use in the country
- Reduction in rain fed areas where the drought is most severe in the face
- Creation of facilities for local communities to maintain local power
- Support to non-governmental forces to combat drought
- declared crisp and clear politicians in the government formed a water users
- Preparation of program beneficiaries and experts in order to promote education and Methods Global and innovative technologies regarding water efficiency
- Provide appropriate facilities for the proper implementation of irrigation farmers Toes government
- To promote and develop the use of modern irrigation methods

REFERENCES

- ABARE Farm Business (2003)**. Drought. Available:
<http://www.abareconomics.com/pages/insight/drought.htm>.
- Afkhami M (2005)**. Provide program management and operation of the Karun River - an essential dose levels. Ph.D. Dissertation Islamic Azad University, Tehran Science & Research 162.
- Babeli Yazdi (1999)**. Mirror will rains in the time droughts. *Journal of Geography Climate* **54** autumn 187-186.
- Hassan El-Banna Osman (2002)**. Evolution of surface irrigation using gated pipe techniques in filed crops and old horticultural farm, Agricultural Engineering Research Institute, Egypt 88-96.
- Hussein Zare N (2008)**. Water Quality Changes in Khuzestan province Pathology Conference of Khuzestan Water Transmission national interests **10** 118-126.
- Jamshidi AR (2009)**. Increase water infiltration and reduce runoff of soil on the farm with the strap slot machines. A meeting area where branch of sustainable management **3** 631- 639.
- Nader M (2008)**. The use of surface irrigation pipe valve. *Iranian Agricultural Economics Conference Proceedings* **1** 108-119.
- Najafi Baha (2007)**. Food Policy, *Journal of the Iranian Economy* 100- 105.
- Shrama KR (2002)**. An overview of irrigation management transfer in Nepal. International Commission on irrigation and Drainage, Eighteen Congress Montreal 54-62.