

Availability of Water and Agriculture in India

"Challenges and Action"

Abstract

India is the second largest producer of wheat and rice, India is 2nd world wide in farm output. The irrigation infrastructure includes the network of canals from rivers, ground water, well based systems, tanks and other rain water harvesting products for agriculture activities. India is not a water rich country and is further challenged due to negative impact of climate change. This has lead to a situation where there is no water no fodder and decline in farms produce. Emphasis should be given on water resources conservation through watershed development in suitable areas, the promotion of water conservation efforts has direct implications for water resources availability and agriculture. This paper reviews the current status of its usage in availability of water and agriculture in India challenges and action for development and sustainability

Keywords: Water Use Efficiency, Environment, Sustainability, Challenges, Action.

Introduction

Water is a critical input agriculture in nearly all its aspects having a determining effect on the eventual field. The increasing demand of water resources by India's burgeoning population and diminishing quality of existing water resources because of pollution and the additional requirements of serving India's spiraling industrial and agricultural growth have led to a situation where the consumption of water is rapidly increasing while the supply of fresh water remains more or less constant. Surveys showed most of urban cities falling water deficient. Water scarcity has make negative impacts on the environment, including lakes, rivers, wetlands, and other fresh water resources. Water overuse can cause water shortage, often occurs in areas of irrigation agricultural and harms the environment in several ways. Owing to poor water resource management system and climate change India faces a persistent water shortage. As per OECF environmental outlook 2050, India would face severe water constrains by 2050, Indian agriculture accounts for 90% water use due to fast track ground water depletion and poor irrigation systems.

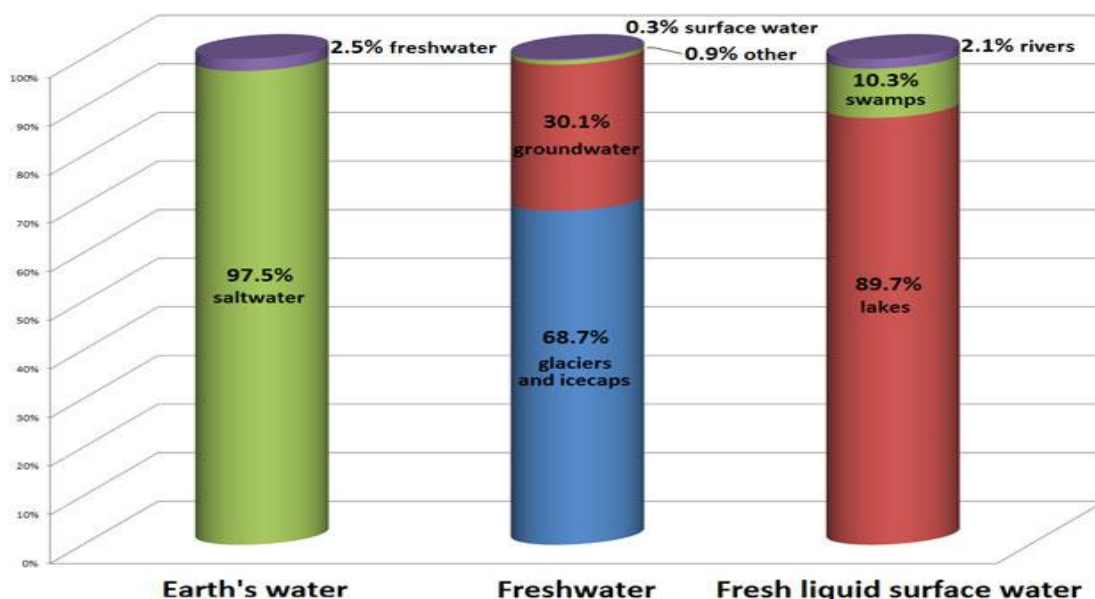
"Livestock products provide one third of the human protein intake, but also consume almost one third of the water used in agriculture globally (Herero et al., 2009)

"The earth, the land and the water are not an inheritance from our forefathers but on loan from our children. So, we have to handover to them at least as it was handed over to us" Mahatma Gandhi.

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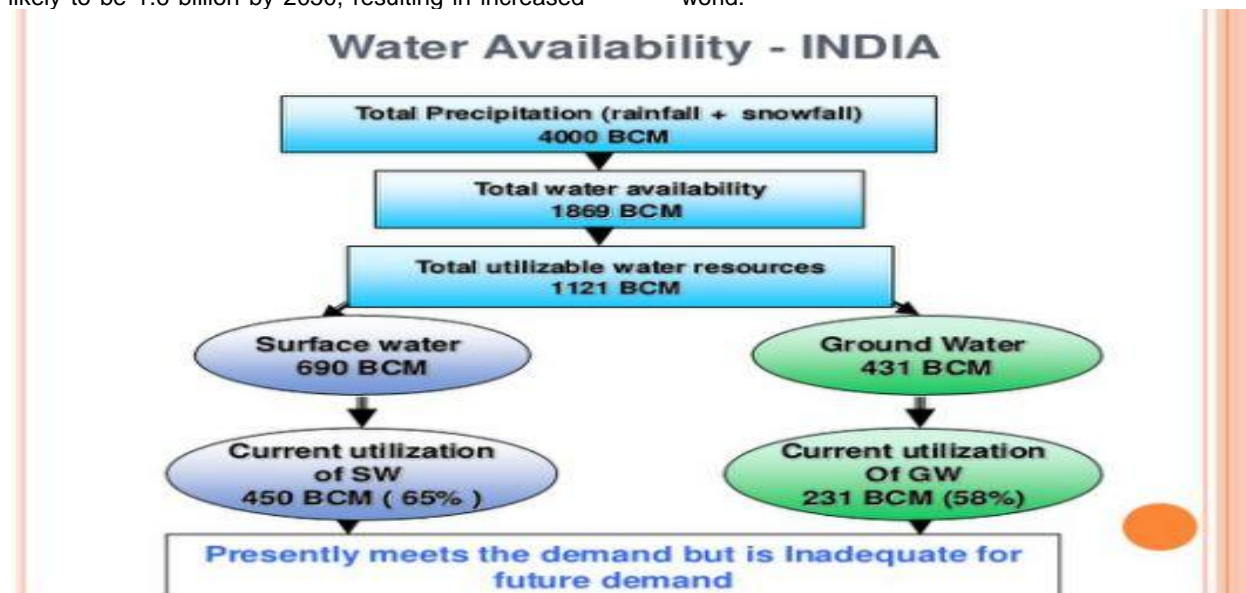
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Availability of Water for Agricultural Production

India is not a water rich country and is further challenged due to negative impact of climate change; Increase in population and changing lifestyles has increased demand of water for agriculture in both urban and rural areas. Indian has 18% of world population, having 4% of world's fresh water, out of which 80% is used in agriculture India receives and average of 4000 billion cubic meters of precipitation every year. India's annual rainfall is around 1183mm, out of which 75% is received in a short span of four months during monsoon. The population of India is likely to be 1.6 billion by 2050, resulting in increased

demand for water, food and energy. It is worth mentioning that climate change will have negative impact on agricultural productivity ranging from crop selection, time of cultivation, irrigation methods etc. The availability and demand for water resources in India show sizeable variations from one region to another. There is an inefficient and use of an distribution of water. Nearly 90% of the India population lives in areas with some form of water stressor food production deficit Ground water has been relatively abundant in most parts of India. India is among such most intensive farming regions the world.



According to Prime Minister Shri Narendra Modi address on the occasion of world environment day 2018 at Vigyan Bhawan "We also recognize the need to tackle the issue of water availability, which is becoming a major challenge in India. We have launched the Massive Namami Gange initiative. India

is primarily an agrarian country. Continued availability of water for agriculture is of importance. The Pradhan Mantri Krishi Sinchayee Yojana has been launched to ensure that no farm goes without water our motto is "More crop, Per drop."

In its broadest sense, water productivity is the net return for a unit of water used. Improvement of water productivity aims at producing more food, income, better livelihoods and ecosystem services with less water. There is considerable scope for improving water productivity for agriculture, livestock practices used to achieve this include water harvesting, supplemental irrigation, deficit irrigation, precision irrigation techniques and soil-water conservation practices. Practices not directly water productivity because of interactive effects such as those derived from improvements in better agriculture.

However, there are several reasons to be cautious about the scope and ease of achieving water productizing gains. Reuse of water that takes place within an irrigated area or a basin can compensate for the perceived losses at the field scale in terms of water quantity, though the water quality is likely to be affected. While agriculture has played an important role in increasing water productivity in the past, especially by improving the harvest index. More importantly, enabling conditions for farmers and water managers are required an understanding of the biophysical as well as the socioeconomic environments crossing scales between the field, farm and doab.

Conclusion

The article was designed to explore the present plight of migrant agriculture productivity by considering the water availability in India. As the world's population booms towards 1 billion by 2050, the demand for agricultural products—food, fiber and fodder—will rise dramatically, these demands will put even more strain on land, water, energy and other resources that are already stretched. There are a number of smart solutions that can be co-optimized and scaled-up in order to improve fields and meet growing food production demands with delivering energy and water efficiency. Agriculture is by far the largest consumer of freshwater. More than 70% freshwater is used by the agricultural sector. The challenges for the food production system is particularly made in India, in the context of its highly fragile water resources. As co-owners of water in a watershed, industries benefit from a reduced strain on

water resources from agriculture and improved availability for all with water livelihoods and as the focus of our water smart agriculture initiative aims to identify smart, innovative and scalable business solutions and facilitate their co-implementation and scaling up. Our India water tool supports the farming community by helping them make informed decisions and ensuring that they effectively address India's water sustainability challenges.

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