

Agriculture Water Conservation in Afghanistan

Prepared by: Rafiullah Rahmani Aug 8 2019

Abstract

Afghanistan is a land locked country with 32.2 million population and total area of 65.2 million hectare, while 2.1 million hectare area is irrigated despite having 3.2 million hectares of arable land. Water is the most important element of life that plays a vital rule in socio economic development and preservation of safe environment. About 80% of people rely on agriculture in Afghanistan. As population increases and demand for food rises, there is need to supplement water use for agriculture production. In order to meet growing demand of agricultural production and bring more land under irrigation, it is essential to conserve water, modernize the irrigation system, manage the water and initiate high efficiency irrigation systems.

Introduction

According to FAO, the economy of Afghanistan relied on agriculture and about 80% of people depends on agriculture income. Therefore, water means food for the people.

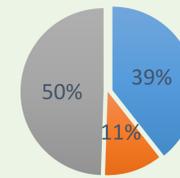


Figure 1

Available Water Resources

- Total internal renewable surface water resources (IRSWR) is an estimated 37.5 km³ /year
- Total internal renewable groundwater resources (IRGWR) an estimated 10.65 km³ /year
- Total internal renewable water resources (IRWR) to 47.15 km³ /year

Available Water Resources



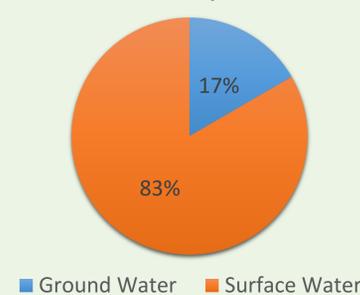
- Total internal renewable surface water resources (IRSWR)
- Total internal renewable groundwater resources (IRGWR)

Water Use

Total Water Use by Sector



Water Use by Source



Smart Irrigation System



High Efficiency Irrigation System



Figure 3

Water Conservation Methods

- Precipitation water harvesting (reservoirs, dams, plantation in watershed)
- Effective use of ground water
- Application of High efficiency Irrigation systems (Sprinkler, Drip and Smart system)
- Better Irrigation Practices (minimizing losses due to evaporation, runoff or subsurface drainage)

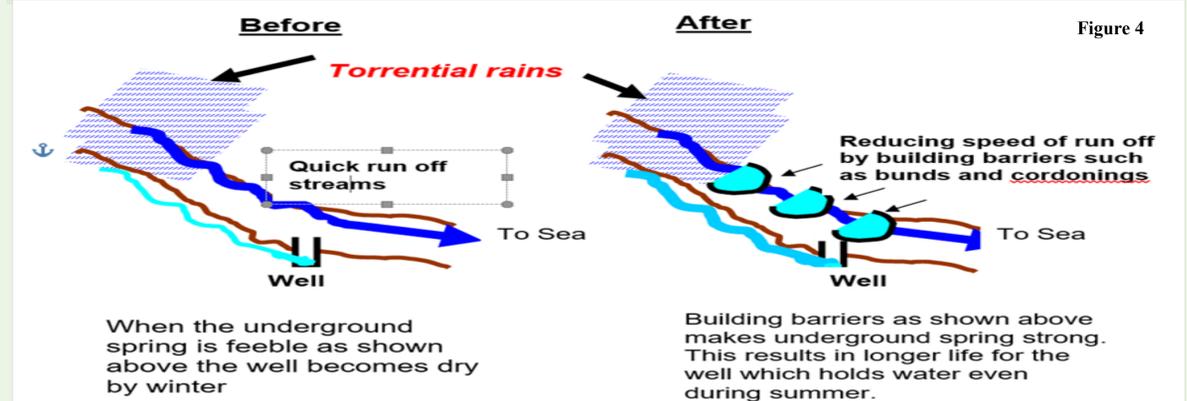


Figure 4

Conclusion

- In order to have a sustainable water management system, it is necessary that the Afghan Government consider Integrated Water Resources Management Approach.
- Development of national water management policy.
- Awareness and capacity building workshops for Rain water harvesting throughout the country.
- Transfer the water management to subsidies and Water User associations
- Development of complete information system that have all necessary information relevant to water management.

Water Conservation

A general definition of water conservation is:

- To reduce water losses and wastage.
- Efficient use of water.
- Saving water by using less of it; the care, preservation, protection, and wise use of water.

References

- Afghanistan country profile (2012). Washington, D.C.: Central Intelligence Agency. <http://hdl.loc.gov/loc.gmd/g7630.e003731v>
- Aini, A. (2007). Water conservation in Afghanistan. *Journal of Developments in Sustainable Agriculture*
- Riddle, B. (2019). Water conservation. *Science Scope*, 43(1), 76-79. <https://search.proquest.com/docview/2259302137>
- Draft (2018). (6th ed.) Oxford University Press. <http://www.oxfordreference.com/view/10.1093/acref/9780198789741.001.0001/acref-9780198789741-e-1103>
- UNFAO, Rome 2017, Water for Sustainable Food and Agriculture
- M.Kumari, & J.Sing January 2015, Article: Water conservation: Strategies and solutions <https://www.researchgate.net/publication/312525328>
- Central Static Organization of Afghanistan <http://cso.gov.af/en/page/demography-and-socile-statistics/demograph-statistics/3897111>
- <https://www.mfa.gov.af/fa/about-afghanistan/country-profile.html>
- Figure 1: <https://images.app.goo.gl/s6TbiU7AxPujme7>
- Figure 2: <https://images.app.goo.gl/4oZBuSomXsCLA3uc6>
- Figure 3: <https://images.app.goo.gl/BWSKyjpbMbfTv7Nw5>
- Figure 4: <https://images.app.goo.gl/34a4WrXR6gxqddQ16>