

Current and Suggested the Cropping Pattern with Respect to the Water Security in Saudi Arabia

By

Khalid N. Alrwis
Adel Mohammed Qanem

Department of Agricultural Economics, College of Food and Agric. Sciences,
King Saud University, P. O. Box 2460, Riyadh 11451, Saudi Arabia.

Abstract

The main objective of this research is to study water resources' utilization in agriculture, and determine the suggested crop pattern taking into the account water security, and in comparison with current crop patterns in the Kingdom during the period (1995-1998).

The study uses mathematical and statistical analysis such as linear programming and sensitivity analysis for resource and revenue to the quantity of water for each unit of land (Hectare).

The study results found that the agricultural sector depends on ground water renewable and non- renewable by 66.54%, 33.46 respectively. The physical and revenue returns for the unit used water resources are different between traditional and specialized farms. Grains dominate the current cropping pattern, whereas fodder is second, then vegetables and fruits.

The gross margin of the quantity of water used in the suggested cropping pattern estimated to be 35473 millions of S.R., compared to 9824 millions of S.R in the suggested cropping pattern, which means that we could increase the gross margin of the quantity of water used by 261.1% if we use the suggested crop pattern. This

will result in surplus in land, water resources, and in fertilizers if the suggested cropping pattern is adopted.

The study recommends developing and protecting current water resources and pays more attention to water security by changing the cropping pattern to keep and develop the agriculture sector in the Kingdom of Saudi Arabia.