



## HOLISTIC APPROACH FOR SUSTAINABLE DEVELOPMENT IN SEMI ARID REGIONS, CASE STUDY, ALKIMMA WATERSHED YEMEN

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The agricultural Terraces in Yemen were thousands years ago the base of economic and social inhabitation in mountain highlands which express about 60% of the area of Yemen. Recently the people began to leave this regions because of the degradation of the terraces in this research we studied the reasons of terraces degradation and we will focus on water erosion. In Addition to study other reasons of terraces degradation either natural or by human activities That will through the study of Alkimma watershed Hajjah Governorate as representative of northern highlands. The general objective of this research is to assist the land recourse status in agricultural terraces in the studied watershed and assign the ways of its sustainable development. Its locates in Alkimma watershed – Kuhlan Affar in western north of the capital Sana'a the area of this watershed. 1200 Hectares. The watershed distinguished intensive agricultural activity. The agricultural terraces spread in the all area of the watershed. The study area located between 1600 and 2700 above sea surface. I have chosen this location because it includes the problem that we studied in the research. We have done approach for field work in two parts. The First is study of erodibility of soil by take irregular samples in all kinds of agricultural terraces; which was divided into three categories: Good terraces slightly degraded and heavily degraded. In each sample we examined the soil in field and we take sample from the surface and sub surface class to analyze the physical and chemical properties in the laboratory. in addition to describe the status of Erosion and to register the length, width and depth of terrace. And describe the status of vegetation around the sample. The second part is we called out social and economic questionnaire for the farmers to know the agricultural activities and another reasons for terraces Degradation. In this Research we have used air photos (Scale 1:30000) and topographic Maps (1:100.000 and 1:50.000) In addition to GPS and digital camera and the special tools to take soil samples. The initial results which we had obtained from the analyses of the questionnaire Clearfield that there are some other reasons of terraces degradation such as the low fertility, the low income and low production, roads and migration. Also we have made some maps for analyze, soil degradation and physiographic maps and we analyze the samples to know the soil readability. According to those results we will make scientific recommendations to make strategy for sustainable development we can generalize on the similar regions in the country.

**Key word:** Terraces, erosion, degradation, watershed, sustainability.

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