

**THE IMPACT OF THE GREAT MAN MADE RIVER PROJECT ON
LIBYA'S AGRICULTURAL ACTIVITIES AND THE ENVIRONMENT**

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This project report is dedicated to my beloved
Parents

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ABSTRACT

Libya is a dry country with very limited water resources. As the population of Libya increases, so does its demand for water. The search for oil in the 1950s and 60s led to the discovery of vast amount of 'fossil' water in aquifers underneath Libya's southern deserts. In 1984, the Libyan government started the largest civil engineering project ever undertaken in the world that was scheduled to complete within twenty years. The project, popularly known as the Great Man Made River Project (GMMRP), when fully completed can supply a total of 6,500,000m³ of freshwater per day to most northern Libya cities bordering the Mediterranean Sea. Eighty percent of this water is allocated for agricultural activities while the remaining is for municipal and industrial purposes. The impact of the availability of this water on the agriculture activities is tremendous and so is the projected consequences on the environment. In light of this, this study, through a questionnaire survey, tries to identify such impact on the agriculture town of Abu Sheiba. Findings from the questionery survey indicate that while the impact of the GMMRP project on agriculture activities are very significant so are the concern of the people on its environmental impacts.

ABSTRAK

Libya merupakan sebuah negara padang pasir yang mempunyai sumber air yang terhad. Selari dengan peningkatan bilangan penduduk, permintann air juga meningkat. Aktiviti carigali minyak dalam dekad 50an dan 60an telah membawa kepada penemuan sumber air bawah tanah yang banyak di bawah padang pasir di selatan Libya. Dalam tahun 1984, kerajaan Libya telah memulakan satu projek kejuruteraan awam yang terbesar pernah dilakukan yang dijangkan berlanjutan selama dua puluh tahun. Project yang dikenali sebagai *The Great Man Made River Project (GMMRP)* ini bertujuan untuk membekalkan air bawah tanah dari selatan ke utara Libya. Ia berkemampuan untuk membekalkan sebanyak 6,500,000m³ air per hari kepada bandar-bandar utama Libya yang bersempadan dengan Laut Mediterranean. Lapan puluh peratus daripada air ini adalah untuk tujuan pertanian manakala selebihnya untuk tujuan munisipal dan perindustrian. Kesan bekalan air baru ini ke atas aktiviti pertanian adalah besar dan begitu juga kesan jangkaan keatas alam sekitar. Dalam perspektif ini, kajian ini dilaksanakan untuk mengenalpasti kesan-kesan ini keatas kegiatan pertanian dan alam sekitar di Bandar Abu Sheiba, sebuah kawasan pertanian di utara Libya. Penemuan-penemuan daripada hasil solaselidik menunjukkan kesan GMMRP keatas akativiti pertanian di situ adalah besar dan begitu juga kebimbangan penduduk tentang kesan lanjutan keatas alam sekitarnya.

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LIST OF ABBREVIATION

GMMRP	-	Great Man Made River Project
SPSS	-	Statistical Package for the Social Sciences
IHP	-	International Hydrological Programme
UNESCO	-	United Nations Educational, Scientific and Cultural Organization

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Increasing populations and industrial and agricultural development worldwide are placing much greater demand on groundwater supplies (Robert and Albert, 1989). Because it has practically no renewable water resources, Libya is one of the countries that rely heavily on groundwater to satisfy its ever-increasing water needs with minor contributions from springs, wades, and surface runoff (Abu fayed and El-Ghuel, 2001). Over 80% of Libya's population resides along a thin strip of its 1900-km-long Mediterranean coast, which also contains most of the country's agricultural farms and major industrial units. In recent years a rapid increase in population and water consumption rates for domestic, industrial and agricultural purposes have had a significant impact on the country's water resources — mostly ground aquifers — which suffered serious depletion and deterioration.

The above situation combined with severe droughts and uneven population distribution has prompted a search for new and unconventional sources of water (Bandar and Walid, 2000). Different options were considered to address this problem, which include the use of each option, importing water by ships, desalination of seawater, or laying a pipeline from Europe. As a result of this, the Libyan's authorities has paid a major attention to the idea of transferring water from the huge aquifers at the south to the north residential areas, which is known latter as the Great Man-Made River Project.

This research is an academic endeavour intending to investigate the environmental impact of the Great Man Made River project. The aim of this study is then to examine related problems that provide a basis for this research. For the purpose of this study, therefore, an agriculture town of Abu Shieba has been selected as a study area. The impact of the GMMRP on the agricultural activities of the town and the consequence environmental impacts of these agricultural activities are the focus of this study.

1.2 Statement of the Problem

The background of the study has provided an overview to the problem of our interest. In recognizing that, there is an obvious need for a study on the impact of the GMMRP on the agriculture activities and the environment. Thus, the central problem statement of this study is to realize a better understanding of the total environmental impact of the Great Man Made River Project through expansion of agriculture activities.

1.3 Purpose of the Study

The purpose of this study is to understand the impact of the GMMRP on the agriculture activities at a small town in Libya and also to understand its eventual impact on the environment. By understanding how the project has changed the agricultural sector of the town in terms of its size, fertilizer and pesticide uses, etc, it is hoped that the environmental impact of environmental by these agricultural activities will be better understood.

1.4 Objectives of the study

The following objectives have been identified in the effort to achieve the purpose of this study.

1. To quantify the impact of the GMMR project on the agricultural sector of the study area.
2. To study the changes those take place within the agricultural practice at the study area.
3. To access the environmental impact that is a consequence to these changes.

1.5 Research Questions

The primary purpose of this study is to understand the Great Man Made River project and the underlying dimensions central to its agricultural environmental impact. In this inquiry the research questions have to serve two purposes. The first is to focus the study by showing the relationship of the research questions to the study's purpose. The second purpose is to guide the examination in how to conduct a qualitative and quantitative study by revealing the relationships to research methodology. The research methodology that will be chosen to address the research questions is the case study approach based on questionnaire instruments as primary data source. This will supported by company documents from relevant governmental authorities and a review of project literature as a secondary data

Given that this study aims to examine the agriculture environmental impact of the Great Man Made River project; the answers to the following question were sought to illustrate this interest:

1. What is the environmental impact of the Great Man Made River project as the consequences of its impact on agricultural activities?

1.6 Significance of the Study

This study is significant because it proposes a research on one aspect at environmental impact of great man made river project. Impacts from the GMMR project are many and come in various form. This study however, is significant for its attempt to look at the environmental impacts of changes in towns agricultural activities as a result of the GMMR project. Knowing the environmental impacts of these changes would offer some ideas on how to minimize or mitigate them.

1.7 Scope of the Study

Environmental impacts of the changes to the agricultural activities brought about by the project can be numerous and wide ranging. This study however, focuses only on the following;

1. The impacts of the project on the scale of the agricultural activities of a selected town, i. e the study area at Abu Sheiba.
2. The impacts of the changes on the availability and prices of agricultural products.
3. The impacts of the projects on the practices of water usage and fertilizer and pesticides application within the study area.

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