

## 1. INTRODUCTION

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### 1.1 Project Background and Aims

The Jordan Badia Research and Development Programme (BDRP) was established in 1992 as a collaborative venture between the Jordanian Higher Council for Science and Technology (HCST) and the British Royal Geographical Society (RGS). The aim of the programme is:

" the sustainable development of the desertified Badia environment and the improvement of the standard of living of the inhabitants... under management systems which conserve the natural resources so that production levels will be sustainable in the long term." (RGS, 1992)

As most of this vast arid area has an average annual rainfall of only 50 to 150 mm, sustainable development requires a lasting supply of water of suitable quality for domestic supplies, livestock and irrigation. Water scarcity has traditionally restricted development in the badia, and could be a limiting factor in the future. Evaluation of water resources and development of appropriate water supplies therefore forms an important theme in the Geomorphology and Physical Resources component of the BDRP. However, care is essential to avoid over-abstraction because

" the exploitation of most groundwater aquifers beyond their safe yield is causing depletion and salination of the water and this practice should be stopped before permanent and irreversible damage occurs". (HCST, 1993)

The Badia Research and Development Programme has identified the northeastern Badia region as a pilot study area, as shown by Figure 1. Most of the area lies within the northern half of the Azraq Basin, but it also extends into parts of the Sirhan Basin in the south and Hammad Basin along the eastern margin.

### 1.2 Scope and Objectives of the report

This report summarises the work done on water resources by the Badia Programme from its inception in 1992 until October 1995. It also includes a review of the main conclusions arising from this work and other water resource studies in the same area. In addition to presentation of the progress made by the BDRP researchers, the objective of the report is to highlight the critical gaps in the existing database, and to make recommendations for future research to investigate the areas of uncertainty. Great emphasis is placed on the need for cooperation and exchange of data between different projects and organisations working in the same area, to maximise output and avoid duplication. The second aim of the report is to anticipate the implementation of the development phase of the programme, by presenting some initial recommendations on the sustainable development of water resources in the project area.