Chapter 1
Introduction

BACKGROUND

Investment in agricultural water development in sub-Saharan Africa has declined in the past two decades. The main reason for this decline is thought to be the consequence of concerns over the disappointing performance of past investments in terms of: (i) returns to investment; and (ii) sustainability. However, the production problem remains. Rainfed agricultural production in sub-Saharan Africa is still highly volatile and only the interseasonal and interannual management of water offers a means of buffering regional production shortfalls. Beyond this, the concentration of inputs around irrigated production offers a means to service specific export-market demand. Sustained investment in both rainfed and irrigated production is necessary, but approaches and patterns of investment will have to innovate in order to overcome the disappointments of the past. The analysis attempts to quantify how much of this production shortfall could be met by irrigated production and is based on projections derived from the analysis prepared for *World agriculture towards 2015/2030: an FAO perspective* (FAO, 2003).

Five international organizations – the African Development Bank, FAO, International Fund for Agricultural Development (IFAD), International Water Management Institute (IWMI) and the World Bank – have agreed to collaborate in a joint review of experience in agricultural water development in the region to date in order to identify generic lessons for application in strategies and programmes of future support to the sector. The primary intention is that the initiative will enable the five agencies concerned to improve the quality of their assistance to governments but it is also intended to have a catalytic effect on associated bilateral donors. The review is to be carried out by means of a series of desk and case studies, the results of which will be validated at a regional stakeholder consultation.

The range of the study comprises a set of component studies that will form the basis of a Synthesis report (Volume I) to be compiled by a designated working group representing the five organizations. The component studies cover the following areas:

Volume II	Regional demand for products of irrigation agriculture.
Volume III	Irrigation development and planning and implementation.
Volume IV	Analysis of irrigation investment performance and costs.
Volume V	Private sector participation.
Volume VI	Environmental and health impacts.
Volume VII	Assessment of food supply and demand using a 'Watersim' model.
Volume VIII	Poverty reduction.
Volume IX	Water-livestock-crop production.

This document is concerned with the first component study (Volume II), responsibility for which was assigned to FAO.

STRUCTURE OF REPORT

Chapter 2 of this report establishes some regional parameters for irrigated production and is intended to show that confirming demand for irrigation development is a much more complicated affair than merely matching natural and human resources potential with food self-sufficiency targets. Therefore, this study has had to adopt a much broader to irrigated production. Chapter 3 provides information on data sources and

methodologies. Chapter 4 presents the baseline obtaining in the period 1997–99. It presents a statistical analysis of the demand, supply and scope for increased irrigated production, expressed *inter alia* in terms of: (i) self-sufficiency ratios (SSRs) for a range of commodity groups; (ii) water and land resources; (iii) current irrigation; and (iv) reported yields under irrigation for a wide range of crops and locations. Chapter 5 continues the discussion from Chapter 4 and sets the scene for the remainder of the document by examining the impacts of irrigation in terms of the potential marketing and processing advantages and social benefits afforded by it. It also sounds a note of caution with respect to rainfed farmers and the victims of ill-conceived institutional arrangements and the "hidden" environmental costs of poorly planned or managed irrigation. Chapter 6 examines the issue of yield growth and the implications for the natural resource base. Chapter 7 reviews relevant international agreements before presenting an analysis of the broad market prospects for the main cropping groups. It then focuses on the scope for regional and intraregional trade in maize, wheat and rice, which are considered to be the crops for which an irrigation-oriented approach to increased production may be justified. However, it does also point to the need for higher value second crops if the investments are to become profitable. Finally, Chapter 7 makes a plea for an appropriate irrigation sector response. Chapter 8 presents the key conclusions and recommendations.