

PREFACE

One of the major challenges to rural development, especially in semi-arid regions of the Greater Horn of Africa (GHA) is how to sustain food production to meet the ever-increasing demand. The food insecurity situation is worsened by social disruptions such as civil wars, persistent droughts and water scarcity. Introduction of modern technologies, related to green revolution, such as conventional irrigation systems, has unfortunately not provided a sustainable solution. It has been argued that such big projects, though seem to perform considerably well in other parts of the world, cannot be justified economically at the rates of return that we are seeing for food production in the GHA. Environmental degradation emanating from such large projects complicates the matter even further. Thus the region continues to receive negative international media coverage, which more often than not, focus on human sufferings related to food shortage, civil unrest and related attributes. The international community has been spending a lot of resources in terms of humanitarian aid, food relief and refugees support.

However, it has been proved that many communities in this drought prone region have over the years developed coping mechanisms, which the external support agents have given little attention. It is against this background that the GHARP project was conceptualized and formulated. It is evident that most of the international interventions in the region are not sustainable, and hence the need to seek alternatives that are sensitive to rural livelihoods and knowledge. One of such interventions is improvement of the existing farming system—rainfed agriculture, by incorporating rainwater harvesting (RWH) technologies to supplement unreliable rainfall. Most of the agricultural production in Africa is rainfed, hence the entry point to improved food production and security. The dismal performance of past interventions is making many development partners to re-evaluate their future plans. RWH technologies and systems have been proven to be sustainable in many drier parts of the world.

Therefore, in an attempt to contribute to the search of sustainable options of addressing food insecurity and water scarcity in the GHA, the GHARP project was implemented. The main objective was to identify and evaluate a number of RWH technologies and systems in the GHA with the aim of promoting best practices in rainwater management in order to enhance food security and water availability. The book highlights some of the promising rainwater harvesting technologies and systems that could provide solutions to food production in Africa.

Moreover, the conditions under which the promising RWH technologies and systems perform well were evaluated. The book, therefore, provides not only the technologies *per se*, but factors that need to be considered to enhance their performance. This information is prerequisite in the promotion and adoption of any of the highlighted technology or system. After considering the factors and resources, the land-users will be in a position to make informed decisions. Similarly, other stakeholders such as governments and external support agencies will be able to base their decisions and policies on some of the information in this publication. However, the publication is not an end on itself, but compliments other available information. More research would suffice in the view of changing environments and adoption and adaptation of promising RWH technologies and systems. The book would also be useful to researchers, as background information, and institutions of higher learning. It is envisaged that the information provided in this book would go a long way in providing sustainable solutions to food insecurity and water scarcity in semi-arid regions of Africa.

Regional networking and collaboration is important in an attempt to address a regional problem. Hence regional experiences and perspectives captured in this publication are paramount in stakeholders' sensitization and awareness creation on promising RWH technologies and systems. The performances of these technologies in improving rural livelihoods are enough testimony of what they can achieve. Therefore various stakeholders, in particular land-users, development agencies, training institutions and policy makers, should find this publication useful.