

Introduction

In Africa, where the majority of farmers are still smallholders with one to three hectares (ha), small-scale private irrigation schemes (SPRI)¹ are likely to bring higher returns per hectare than government-led schemes, as observed in Zimbabwe (Rukuni 1997). SPRI allows irrigation schedules to be adjusted in accord with crop needs, providing the right amount of water at the right time to farmers (Dauda et al. 2009), and compensating for localized problems of erratic rainfall (Phillip et al. 2009). SPRI thus offers flexibility for African farmers, who are, generally, highly constrained in managing their production schedules. Such flexibility is one of the critical factors missing in the large-scale public sector irrigation schemes in Nigeria.²

In Nigeria, SPRI benefits farmers in a variety of ways. It usually leads to higher profitability of various crops (Yaro 2004). It also benefits farmers (including female farmers) by producing more food crops in the “slack” period of rain fed agriculture (Ogunjimi and Adekalu 2002). SPRI enables households to irrigate garden vegetables, water livestock, and undertake microenterprises (Westby et al. 2005). And with relatively favorable market conditions, particularly in urban areas, irrigation technologies should be widely adopted as they become available. Overall, SPRI has been the major driving force behind the expansion of irrigated land in Nigeria, as in many other sub-Saharan African (SSA) countries. Because of these factors and because the total irrigated land in Nigeria is still well below its potential, effective public support is needed to promote farmers’ investment in SPRI.

Effective public support, however, must be based on a detailed understanding of the nature of farmers’ demand for SPRI and the specific constraints they face. Only by understanding the complex and diverse nature of farmers’ demand for agricultural technologies in Nigeria can the proper policies and support mechanisms be put in place that provide farmers with the resources to meet their production challenges. However, it is difficult to identify all the knowledge gaps for each of the diverse issues affecting farmers’ demand for irrigation technology in SSA countries, as existing studies are limited. In general, irrigation studies on Nigeria only suggest the knowledge gaps relevant to the specific issues studied and/or are limited to specific geographic locations and irrigation technologies. Studies that do identify knowledge gaps have focused on a relatively general set of issues and are not specific to a particular country nor capture enough details.. Similarly, many studies using irrigation-related data only provide national empirical information and do not capture the diversity in irrigation practices nor factors affecting such practices within the country.

This review provides information on the major knowledge gaps related to the demand for irrigation technology in Nigeria and the constraints farmers face. It assesses the nature and breadth of empirical knowledge in Nigeria on factors potentially affecting farmers’ demand for irrigation with a specific focus on the general set of factors that are perceived to have an effect on farmers’ demand for irrigation in SSA; and two of these factors, which have been studied in

¹ Small-scale private irrigation (SPRI) can be defined as irrigation on small plots under the control of farmers, using technology they can effectively operate and maintain (Purcell 1997).

² Most of the irrigation done by RBDA (River Basin Development Authority) involves only basin irrigation, in which water is drawn from the main rivers by means of giant pumping engines (located at the bank of each river), and is pumped into the main canal, where it is distributed by gravity to the cropping zones. The zones are plotted out into units of 10 ha, and further divided into 0.5ha that are then allocated to participant farmers on an annual basis (Urama and Mwendera 2005).The most restricting problem of the large scale irrigation project is that farmers are required to follow the strict rotation of public irrigation schemes.