Land Use Policy 71 (2018) 249–260

Contents lists available at ScienceDirect

Land Use Policy

journal homepage: www.elsevier.com/locate/landusepol

Agricultural advisory and financial services; farm level access, outreach and impact in a mixed cropping district of Punjab, Pakistan

Ehsan Elahi[a,b], Muhammad Abid[c,*], Liqin Zhang[b], Shams ul Haq[d], Jam Ghulam Murtaza Sahito[e]

[a] School of Business, Nanjing University of Information Science and Technology, Nanjing Shi, Pukou Qu, 210044, China
[b] College of Economics and Management, Department of Agricultural Economics, China Agricultural University, Beijing, 100083, China
[c] Centre for Climate Research and Development (CCRD), COMSATS Institute of Information Technology, Park Road, Chak Shahzad Islamabad, 45550, Pakistan
[d] Institute of Project and Regional Planning, Justus-Liebig-Universität Gießen, Gießen, Hesse, Germany
[e] Department of Agricultural Economics, Faculty of Agricultural Social Sciences, Sindh Agriculture University, Tando Jam, Pakistan

ARTICLE INFO

Keywords:
Agricultural advisory services
Agricultural financial services
Crop productivity
Pakistan

ABSTRACT

Current agricultural growth in most of the developing countries including Pakistan is stagnant due to huge gaps between actual and potential crop productivity. Better access to agricultural advisory and financial services may play an important role in enhancing crop productivity. Using a dataset of 240 farmers collected through face-to-face interviews in 48 villages of district Sargodha in Punjab, Pakistan, this study analyzes farmers' access to and use of farm advisory and financial services, its impact on wheat productivity and barriers to their access. The results of the study revealed that farmers rely more on informal sources for agricultural advisory and credit services than public or private sources. However, the quality of private advisory and credit services was reported better than other sources due to its easy availability and processing. Small land holdings, lack of education and high interest rates were some of the key barriers that restrict farmers' access to both services. Further, the study also found that majority of the farmers (accessors) use agricultural credit for non-farm activities for several reasons. Moreover, the study found significant differences in the wheat productivity for farmers who had simultaneous access to both services compared to those who have access to at least one or none of the services. The study findings showed that access to agricultural advisory services improves wheat productivity. However, productivity gains of using agricultural credit are mainly associated with its proper utilization for agricultural purposes. The study suggests enhancing the outreach and quality of public advisory services through hiring and training extension staff. Furthermore, misuse of agricultural credit and barriers that restrict farmers' access to advisory and credit services need to be eliminated through implementing effective policies and monitoring provided services.

1. Introduction

Like many other developing economies, agricultural sector in Pakistan continues to be a major source of income and livelihoods for more than half of the population. The sector predominantly consists of poor and resource-constrained smallholders, which accounts for three-fourths of the total farming community and are vulnerable to food shortage due to low income and productivity (Farooq, 2013). Though agriculture contributes a significant share to country's Gross Domestic Product (GDP) (21%), still it is quite low compared to its overall contribution to the labor market (44%) (Farooq, 2015). This is mainly due to surplus labor involved in agriculture and huge productivity gaps (USAID, 2010). According to an estimate, currently farmers in Pakistan are able to achieve only 30% of the potential crop yields (Prikhodko and Zrilyi, 2013). Current agricultural production and growth are not sufficient to meet the needs of rapidly growing country's population and it may worsen the food insecurity situation in near future if not managed properly (Sheikh et al., 2012; IFAD, 2014).

Low performance of agricultural sector in Pakistan may be attributed to various factors (Sheikh et al., 2012) ranging from environmental to technological to institutional and managerial (Akram et al., 2011). For instance, over the last two decades, environmental changes and related events such as flood, drought and water shortage have adversely affected the agricultural sector (Farooq, 2015). The extent of these environmental damages is very high in agricultural sector due to low adaptive capacity and lack of technological and institutional

* Corresponding author.
E-mail addresses: ehsanelahi@nuist.edu.cn, ehsanelahi784@gmail.com (E. Elahi), muhammad.abid@comsats.edu.pk, abiduaf@gmail.com (M. Abid), 2951025574@qq.com (L. Zhang), shms_lhq@yahoo.com (S. ul Haq), sahito@sau.edu.pk, jamabid@yahoo.com (J.G.M. Sahito).

https://doi.org/10.1016/j.landusepol.2017.12.006
Received 11 February 2016; Received in revised form 29 November 2017; Accepted 3 December 2017
Available online 21 December 2017

support at farm level (Schilling et al., 2013). Farmers have limited access to advanced technologies, improved inputs, soil and water conservation methods (technological gaps) (Burton et al., 2012). Further, lack of institutional support is another reason behind poor performance of agricultural sector in Pakistan (Abid et al., 2011). Above all, farmers' decision making on use of land and other resources is very important in attaining higher yields and it could be affected by level of access to information and institutional services (Fielke and Bardsley, 2014). Particularly, technological and management factors are interlinked, where former relates to the financial capacity of a farmer to buy certain technology and later is more related to knowledge and information on the use of certain technologies.

To meet the local food and livelihood demands, agricultural productivity needs to be enhanced. Environmental constraints could be managed through adapting to ongoing changes (Iqbal et al., 2016). The technological and managerial barriers could be managed through improved access to financial and informational services respectively. Easy access to agricultural financial services may enable farmers to achieve higher crop yields by adopting improve technologies (Khandker and Koolwal, 2015). While, improved advisory services may contribute to reduce management gaps by informing farmers about new technologies and practices to achieve maximum production using less inputs (Davis et al., 2012). Moreover, farm advisory services could also be used as a bridge between research and farmers through exchanging information on new tools and farm level constraints (Omanya et al., 2013).

Despite a huge investment globally on the provision of agricultural advisory and financial services (Aker, 2011), there is no consensus in the available empirical studies regarding the effectiveness of these services (Aker, 2011; Anderson and Feder, 2007). While many studies reported positive impacts of financial and advisory services on resource use efficiency (Abedullah et al., 2006), crop productivity (Tilman et al. (2002) and poverty reduction (Hasan et al., 2013), a number of studies contradicted these findings. For instance, Davidson et al. (2001) reported a failure of both public as well as private extension programs in providing benefits to wider farming communities. Abid et al. (2016a) also stated very limited farmers' access to and impact of agricultural advisory services in different regions of Punjab province, Pakistan.

The understanding of current level of access, outreach and usage of agricultural advisory and financial services is important to develop policies for agricultural development. There could be a number of socio-economic factors that may restrict the outreach and access to farm advisory and financial services (Abid et al., 2016a). Further, it is also important to know the reasons for the ineffectiveness of provided services at farm level. However, the studies (e.g. Khan, 2003; Davis et al., 2012) on investigating the reasons for failure of these services in enhancing crop productivity are rare in Pakistan. Against this backdrop, this study takes a case of wheat farmers in mixed cropping district of Punjab province, Pakistan and explores various aspects of farm advisory and credit services in relation to wheat productivity. The aim is further divided into four objectives: 1) to explore the current status of access and usage of farm advisory and financial services at farm level; 2) to investigate the barriers that restrict farmers' access to financial services; 3) to analyze the factors responsible for misuse of agricultural credit by farmers and 4) to assess the differences in wheat productivity between users and non-users of the farm advisory and financial services.

2. Agricultural extension and financial services in Punjab, Pakistan

2.1. Agricultural advisory services

The first ever agricultural advisory services in today's Pakistan were introduced by British in the early 20th century with the objectives to improve the agricultural activities and production in the region. Like in British regime, public agricultural extension in Pakistan has never been a federal government function and always provinces are held responsible for the provision of the services to farmers. Since the independence of Pakistan in 1947, several extension and rural development models have been tried to improve the agricultural productivity. Some of the significant programmes include Village Cooperative Movement (VCM), Village Agriculture and Industrial Development Programme (Village-AID), Basic Democracy System (BDS), Integrated Rural Development Programme (IRDP) and Training and Visit (T&V) programme. Unfortunately, most of these programmes failed to produce required results and were abandoned one after the other (Malik, 2003; Bashir et al., 2010).

Currently in Punjab, department of agriculture is responsible to provide public extension services to farmers through its directorate general of extension and adaptive research located in Lahore. Through its district and local staff, the directorate maintains its links with district governments and farmers in the respective regions (Riaz, 2003). At the district level, Executive District Officer Agriculture (EDOA) under District Coordination Officer (DCO) coordinates agricultural activities with other sister departments (Water Management, Livestock, Soil conservation and irrigation). Further, District officer agriculture (DOA) and office of the Deputy District Officers for Agriculture (DDOA) coordinate extension activities at district and sub-district level (*tehsil*) respectively. The fourth tier (*sub-tehsil*) also called *markaz* (center) is led by an agricultural officer (AO) who disseminates agricultural advisory services to farmers through its field assistants in their designated union councils (Shahbaz and Ata, 2014).

Public advisory services in Pakistan are unable to provide sufficient and satisfactory services to farmers to its full extent due to various constraints (Abid et al., 2016a). Mostly, the public advisory services are supply-driven and do not consider the actual current needs of farmers (Davidson et al., 2001). For example, current advisory services in Punjab do not take into consideration the ongoing challenges of climate change and related extreme events (Abid et al., 2016a). Further, shortage of trained extension workers and lack of subject specialists is another problem behind its poor performance and limited outreach. For instance, each extension worker in Punjab is supposed to provide advisory services to more than 1200 farmers and in some cases to more than 2000 farmers (Fig. 1). A Similar situation can be observed in our study district Sargodha, where this ratio goes to 1000. In addition, the advisory services are also supposed to be biased towards large and influential farmers due to lack of financial and logistic constraints. Another reason for poor extension service facilities is its lack of connection with other stakeholders (particularly research and academia) and sister departments (Burton et al., 2012).

In addition to public extension services, there are various private and non-governmental organizations (NGOs) that are working at local level to provide agricultural advisory services (Table A1). The services provided by private organizations ranged from on-field advisory services to field demonstrations, field days and farmer meetings and distribution of printed and online technical literature (Ali et al., 2011; Abbas et al., 2009; Riaz, 2003). In addition, some organizations (e.g. FFC and Ali Akbar) do also provide free of cost mobile soil and water testing facilities to farmers at their regional centers. However, the outreach and reliability of the services provided by most of these organizations are questionable as not all but many of those organizations provide advisory services to farmers with hidden or open agenda to promote and sell their products. Sometimes, farmers do not have access to most of the free of cost services provided by many private organizations due to lack of awareness or information (Abid et al., 2016b).

2.2. Agricultural financial services

Agricultural financial services may play a key role in the development of agriculture sector. However, the provision of agricultural financial services in rural areas is a key challenge in Pakistan, where majority of the rural households are either small or landless farmers and have very limited access to credit due to lack of guarantee or collateral