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The impact of agricultural information services on farm household outcomes in sub-saharan africa: A meta-analysis

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Abstract

Farmers in Sub-Saharan Africa (SSA) are highly vulnerable to climate variability and extreme weather events due to their reliance on rain-fed farming. Timely access to Agricultural Information Services (AIS) can enhance farmers' well-being and agricultural productivity by promoting the adoption of climate-smart agricultural practices, improving their ability to manage weather-related risks, and enabling the efficient use of inputs such as fertilisers and seeds. This study aims to synthesize the evidence on the impact of AIS on agricultural productivity and welfare of farmers in Sub-Saharan Africa. The evidence was obtained from published studies sourced from bibliographic databases such as Web of Science, Scopus, and CAB Abstracts, as well as grey literature from Google Scholar, ProQuest, and CGIAR's CGSpace. The search, carried out from December 15, 2024 to January 16, 2025, returned 18,287 references. Screening was performed using Rayyan.ai based on a detailed and structured inclusion and exclusion criteria. Data extracted from 65 studies revealed that majority of the evidence is concentrated in Eastern and Western-Africa, while relatively fewer studies have been conducted in Southern and Central-African regions. Agronomic information is the most frequently used type of AIS followed by weather and market information. The primary mode of AIS transfer to the farm household is through the digital platform. Most of the studies evaluated the effect of AIS on yield/productivity followed by income. Following the evidence atlas map, we are conducting the meta-analysis. The mean effect size we are computing using a robust variance estimation (RVE) meta-analytic approach which allows for multiple effect sizes from a single study will indicate the overall impact of AIS on productivity and farm household outcomes.

Keywords: Agricultural Information Services, Climate Information Services, Meta-Analysis , Productivity, Sub-Saharan Africa, Welfare