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Research Spillover: Quantification Methods and Recent Experiences in ICRISAT Groundnut Research

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Abstract

Sustained, well-targeted, and effectively used investments in R&D have improved agricultural productivity worldwide and thereby contributed to food security. In this context, research spillover effects refer to a situation in which a technology that is generated for a specific target region or product is also applicable to other locations or products that are not targeted during the research process. They are generally categorised in three groups: across location spillovers, across commodity spillovers and price spillover effects. The focus here will be the across-location spillovers which occur when a technology designed for a specific region is also applied in other regions. Efforts to quantify these effects have shown that their contribution to the overall impact can be substantial at times.

The consideration of these effects is especially important for international research institutions like the Consultative Group of Agricultural Research (CGIAR) centres. Against the background of their global mandate one has to carefully assess where to invest research funds in order to reach maximum impact. The thorough understanding and quantification of the spillover effects that emerged from past research is one important tool in this priority setting process.

Based on the methodology developed *e.g.* by Davis *et al.* (1987), this paper will enhance the measurement of potential agroclimatic homogenous spillover domains using example of the International Crops Research for the Semi-Arid Tropics (ICRISAT) groundnut research and variety release. Due to the regionalised structure of ICRISAT and other CGIAR centres, a special focus is set on the interlinkages among the African and Asian locations. Results show that the spillover potential is rather high based on agroclimatic similarities across the locations. Nevertheless, the actual spillover realisation is by far lower due to differences in market structure, governance factors and other socioeconomic factors. To overcome these bottlenecks through new innovations along the research continuum as well as along the commodity value chain is crucial in order to achieve higher impact from the funds invested and therefore increase the poverty reduction impact from ICRISAT research.

Keywords: Africa, agricultural research, Asia, budget allocation, international trade model, priority setting, spillover effects