

## The Role of Private-Sector R&D in Agricultural and Allied Activities Innovation

### Introduction:

The efforts to improve agricultural R&D require the public and private sector to address several critical challenges. R&D cycles need to be accelerated to further the widespread adoption of promising innovations - particularly in low-income countries such as India - as a precursor to improving outputs. The lag between successful R&D efforts and the widespread adoption of agricultural innovations have tended to be long; at least 15 to 25 years before peak impacts. In the USA for hybrid corn, the total adoption cycle from early research to commercial adoption took over 40 years—or arguably longer. Another challenge is that many of the most promising agricultural innovations are capital-intensive, and agriculture has historically been dominated by small businesses with low profitability and limited access to capital.

### Intervention:

In developed countries, some of the promising initiatives to overcome these challenges are:

- Consolidation in agriculture to boost efficiency
- More widespread use of crop insurance providing farmers with more financial security
- Improving access to credit.

At present, in higher-income countries, 1.99% of agricultural GDP is spent on agricultural insurance, but that falls to 0.29% in upper-middle-income countries, 0.16% in lower-middle income countries, and 0.01% in low-income countries.

The government can foster an attractive environment for venture capital funds and corporate ventures focusing on agricultural innovation, and help ensure that the investments being made by the private sector can make a greater impact, by taking the following steps:

- Support agricultural extension efforts to disseminate knowledge about new technologies and techniques and to demonstrate their business case. Publicly funded agricultural extension has been a key historical link between agricultural R&D and farmers in high-income countries. Government and multi-national organizations should prioritize implementing such programmes.
- Streamline regulation to reduce lag times, provide targeted tax relief to enhance farmers' incomes and financial security, and offer preferential access to land and market support for promising agricultural techniques and technologies as a result of the R&D efforts.
- Create public-private partnerships, which government can use to leverage public-sector investment, enhance private sector involvement in agriculture infrastructure, and fill gaps in the delivery and adoption of innovation by public- and private-sector entities acting independently.

*Source: The Global Innovation Index (2017), World Intellectual Property Organization (WIPO)*