

A large, bold, green letter 'G' followed by a colon, set against a black square background. The background of the entire slide features a close-up, slightly blurred image of green wheat stalks.

## **REQUEST FOR INFORMATION**

For stakeholders involved in the application of artificial intelligence (AI) and automation processes within agri-food systems in Lower and Middle Income Countries

## REQUEST FOR INFORMATION

Genesis Analytics, in partnership with the Bill and Melinda Gates Foundation (BMGF) and the United States Agency for International Development (USAID), is issuing a Request for Information for stakeholders involved in the application of artificial intelligence (AI) and automation processes within agri-food systems in the Lower and Middle Income Countries (LMICs).

### PROJECT OVERVIEW

**AI and automation technologies are rewiring agri-food systems, which could generate transformative impacts in emerging economies for over 500 million smallholder farmers and their communities.**<sup>1</sup> Agriculture comprises the backbone of economic production in LMICs. Uptake of AI and automation in agri-food systems has the potential to help producers and nations alike accelerate their development progress by improving on-farm efficiency, facilitating financial flows and enhancing supply chain and ecosystem management.

**These improvements to the agriculture sector allow for economies of scale, tailored information and development objectives to be achieved more efficiently.** For example, automated fertilization, irrigation and disease diagnostics are improving crop and livestock yields. Produce from these improved yields can more easily reach markets through automated buyer-seller matching platforms, and blockchain-enabled smart contracts can facilitate more efficient, transparent purchases. As such, the application of these technologies offer a mechanism for achieving employment and economic growth, food security and climate resilience.

**However, there is notable downside risk that could arise owing to biased algorithms, absence of local perspectives, labor-displacement and lower-resourced environments due to scarce data, which requires consideration.** Concerns about the employment and inclusion consequences of AI and automation justifiably exist. Improvements in efficiency can come at the cost of job creation, and the adoption of frontier technologies can make agriculture value chains less inclusive for women, small-scale producers, and other marginalized groups. These trade-offs are not always clear, and vary across particular technology applications, geographies and value chain components. As such, a nuanced, context-specific analysis of these trade-offs is critical to make sense of this complexity.

**Genesis Analytics is supporting the BMGF and USAID to analyze the current and emergent state of AI and automation in agri-food systems.** This analysis is focused on Lower and Middle Income Countries, taking note of the challenges and opportunities which agriculture development stakeholders need to be aware of. The output generated will equip agricultural development stakeholders to navigate the tradeoffs of applying AI and automation to build inclusive agri-food systems, now and in the future.

### RFI OBJECTIVES

Genesis Analytics is issuing this Request for Information for individuals and organizations with experience in implementing AI and automation applications in agri-food systems.

**Stakeholders are requested to complete this [short questionnaire](#) to provide details of their experience and indicate how they may be involved in this initiative.** Genesis may reach out to specific respondents for more information or to attend joint solutions workshops.

In doing so, Genesis seeks to ascertain a deeper understanding of:

- Examples of AI and automation applications and their implementation across value chains in agri-food systems, which considers food products that originate from crops, fish and crustaceans, and/or livestock.

<sup>1</sup> Forbes. 2020. Full Article available [here](#).

- The trends around AI and automation applications and their adoption in agriculture value chains, including refining, processing or other value additive activities that relate to the creation of food or other agricultural products for end-consumers, and how these are likely to evolve; and
- The considerations, implications and tradeoffs of adoption and failure to adopt AI and automation for small-scale producers developing agricultural goods at a limited scale, specific to employment and inclusive economic development. Small-scale producers are the focus of this study but are not necessarily the final consumers of this report.