ACTION FOR ECONOMIC REFORMS

Digital Data to Pivot Agriculture Programs: The Case of Salcedo and Irosin

AER POLICY PAPERS

No. 2023 - 03

Digital Data to Pivot Agriculture Programs: The Case of Salcedo and Irosin

BY

Hannah A. Hipe and Jay A. Carizo

COPY & STYLE EDITORS

Laurence Go
Jessica Reyes-Cantos
Bing Camacho

LAY-OUT ARTIST

Erica Jane Navelgas

This policy paper is produced by Action for Economic Reforms (AER) with the support of the American people through the United States Agency for International Development (USAID) through the COLLABDev partnership project. The Coalescing Organizations towards Locally Led Actions to Boost Development (COLLABDev) Project aims to champion human-centered, data-driven development in the Philippines by using data-informed and technology-enabled participatory decision making to address issues in local development. AER works with 10 LGUs across Luzon, Visayas, and Mindanao to design tech-powered cities and municipalities ready for the data revolution.

ACTION FOR ECONOMIC REFORMS

Action for Economic Reforms, Inc.
West Trade Center, 132 West Avenue, Quezon City
Tel. Nos.: (632)842-65626; (0995)716-6014; (0999)489-2242
Email: collabdev@aer.ph; aer@aer.ph
Website: www.aer.ph/collabdev

Context and Background

In the Philippines, agriculture remains a vital sector, employing 24.27% of the labor force.[1] However, it contributes only 8.9% to the national gross national product (GDP)[2], reflecting inefficiencies, outdated practices and lingering issues that have not been addressed for a long time. For these, the country has become less and less food-sufficient and food secure and more import-dependent in agricultural products.

The national trend is mirrored at the local level. The municipality of Salcedo in Eastern Samar, for instance, with 69.77% of its 11,600 hectares (has.) devoted to agriculture contributes a mere 8.99% to local government revenue[3]–an indication that the sector is not creating enough economic value to uplift 44.9% of its people from poverty in 2018. Similar challenges are also faced by the municipality of Irosin, Sorsogon, that has a slightly lower poverty incidence (32.6%) and a higher proportion of its population (46%) that depends on agriculture.

Agricultural production, however, is not based on data-driven approaches not only because of the lack of availability and access to data and information but also because of farmers' practices. Most plant either because of tradition (nakasanayan), by copying from others (gaya-gaya), or over-reliance on the available seeds or other agricultural inputs supplied by the local government units (LGUs) or the Department of Agriculture (DA). As a result, there are instances when an oversupply of what are supposedly high value crops (HVCs) pull down prices to unprofitable levels for farmers. Further, the lack of evidence-based data leads to wrong decisions, that is, farmers plant what is not suitable to their soil and climate that eventually creates a cycle of unproductivity and debt.

To break this cycle, Irosin and Salcedo participated in the Coalescing Organizations towards Locally Led Actions to Boost Development (COLLABDev) Project, a partnership initiative of the Action for Economic Reforms (AER) and the United States Agency for International Development (USAID) that aims to promote human-centered, data-driven development in the Philippines. Through the COLLABDev Project, local coalitions were formed and strengthened, their data capacities enhanced, and LGUs as well as partners were trained on data-informed policy-making for local development.

	IROSIN, SORSOGON	SALCEDO, EASTERN SAMAR
Income Class	Second	Fifth
Agricultural Land	11,715 has. (79% of total land area)	8,093 has. (69.77% of total land area)
Major crops	Coconut, Palay	Coconut, banana, root crops
Employed in the Agriculture Sector	46%	41%

[1] Philippines: agriculture industry employee share 2022 | Statista

[2] Rivera, Danessa. 2013. Agriculture sector remains lowest GDP contributor | Philstar.com

[3] Salcedo Agricultural Productivity (Linking Farmers to Markets), 18 April 2022.

Data-Driven Agricultural Development

The experiences in both Irosin and Salcedo showed that the adoption of digital data-driven approaches gave a clearer picture of their agricultural sector's situation that encouraged them to pivot their plans and programs through enhanced efficiency to increased productivity and achieve sustainability.

Recognizing and counting farmers

With data collection, farmers were recognized and counted with their specific concerns understood and put on record. Prior to the implementation of the COLLABDev Project, the LGU of Irosin found it challenging to effectively address the unique issues faced by their farmers that hampered the delivery of appropriate and timely interventions. Things began to change with the COLLABDev Project. Data is now being used by the LGU of Irosin to create comprehensive profiles of farmers, which includes understanding their production capabilities, challenges, and marketing strategies.

Mapping farms for appropriate infrastructure and support

Digital data collection also provided a clear mapping not only of the cassava farmers in Salcedo but also their farm lots, and distance to the nearest road networks. Though still in the process of institutionalization, the available data now provides a handle for the local cassava farmers' organization to forecast volume yield and estimate the time period for the timely delivery of products to target buyers. The maps also provide critical data to the LGU of Salcedo: information on the appropriate infrastructure needed by the farmers and, overlayed with the hazard maps, allow the local government to prepare the appropriate support to farmers that may be affected by the calamities.

Behavioral adaptation to data use

The transition from traditional to data-informed decision-making has significantly changed the behavior not only of the farmers but also the local policymakers. From farming methods based solely on experience or habits, the workers in the agriculture sector have started considering soil and climate analyses, and market demand. This change is not only about adopting new tools, but also about embracing a new mindset that values evidence over tradition. LGUs, likewise, started reforming their agriculture planning and programming proof of which is Irosin's Integrated Management of Agri-Fishery Production and Market for the Development of Irosin (IMAProMDI)–a framework that institutionalizes a comprehensive and integrated agriculture and freshwater resources development program that is primarily for the agriculture and inland fishery sectors to boost production, increase return on investments, and improve the quality of life of producers, particularly of the actual tillers. The system is comprehensive enough to include the use of renewable energy in enhancing agricultural production.

Enhancing farmer organizations

Farmer organizations were also strengthened through various community mobilization activities that promoted data appreciation, collection, and analysis. With the available data, the specific needs, capabilities, and resources of individual farmers were identified allowing for the formation of groups with complementary skills and interests. By doing so, these organizations have begun to facilitate better communication, resource sharing, and collective decision-making. Data-driven structuring also aids in tailoring support services from local government units and other stakeholders to the specific needs of these groups, leading to more targeted and efficient agricultural development.

Production and market analysis

The analysis of production trends and market demands is crucial to prevent oversupply and guide farmers toward more profitable crops and practices. Using data to understand what crops are in demand, their market prices, and consumer trends, production will surely align with local market needs.

Hand-holding role of State Universities and Colleges (SUCs)

By design, the COLLABDev Project ensured the presence and active participation of SUCs with secured Memorandum of Agreements as well as Data Sharing Agreements between AER and SUCs. Both the Sorsogon State University and the Eastern Samar State University – Salcedo Campus stepped up and went out of their way to provide technical and logistical assistance to the project. These include the use of cloud servers of the university, mobilizing student mappers, as well as providing a venue for data presentation, analytics, discussions and capacity building activities, and most importantly, a promising future of sustaining the initiative since SUCs are open to discuss the idea of having their universities as data centers.

Empowerment through data

Having access to, and understanding of, the agriculture data empowers farmers making their voice stronger and heard not only by the LGUs but also by bigger trade and industry players. Farmers in Irosin, for instance, have begun meeting with the owners of a regional chain of grocery stores in Bicol, the Liberty Commercial Center, while cassava farmers in Salcedo have used the data to study and recalibrate their production and marketing strategies.

Risks and Challenges

A number of on-going risks and challenges, however, exist for data-driven agricultural development.

The availability of accurate and accessible data remains an on-going challenge. While the Registry System for Basic Sectors in Agriculture (RSBSA) data exists, this is still limited to the users in the DA. Some LGUs also have Community-Based Monitoring System data but these are either outdated or the lack of capacity of LGU personnel to process and analyze the data.

Gaps in technology and infrastructure exist. Because fact is, the use of the CBMS data is hardly maximized. If addressed, farmers and even decision-makers will be able to effectively forecast market demand, and develop plans for interventions for possible emergency situations that could affect the farmers.

It is also crucial to build the capacity of farmers to understand and use data. Tailored training programs and workshops can help develop these skills that will enable farmers to make informed decisions based on data insights.

And a last observation is to understand that traditional farming communities often exhibit skepticism towards new methods. To address this, educational programs and sharing success stories can demonstrate the tangible benefits of data-driven practices.

Policy Recommendations

Given these, the following policy recommendations are hereby offered:

Developing Accessible Data Systems

Establish a more inclusive and accessible agricultural data system, extending beyond the Department of Agriculture, for use by all relevant stakeholders, including LGUs and farmers. This should include developing guidelines on data sharing and use particularly of RSBSA data.

Addressing Technological and Infrastructure Gaps

Invest in technology and infrastructure to maximize the use of existing data (like the Community-Based Monitoring System) for effective market forecasting and emergency planning. The Department of Information and Communications Technology (DICT) should also be proactively involved in addressing these gaps. Their engagement should include not only the development of guidelines and mechanisms but also allocation of resources for developing technologies that will be useful for farmers in the conduct of soil and climate analysis, productivity and yield forecasting, and production-and-market linkages.

Capacity Building for Farmers and LGUs

The Department of Agriculture, in partnership with the Technical Education and Skills Development Authority, should implement tailored training programs to enhance data literacy and usage skills among farmers and LGU personnel.

Educational Initiatives to Foster Change

The DA and the LGUs should also launch educational programs and campaigns highlighting successful data-driven practices to check skepticism in traditional farming communities.

Conclusion

The experiences of Salcedo and Irosin underscore the transformative potential of data-driven agriculture by using the advances in digital technology. By addressing existing challenges through targeted policy recommendations, the Philippines can move towards a more efficient, productive, and sustainable agricultural sector, benefiting both farmers and the wider communities.