

Synopsis: Identifying farm typologies in Rwandan agriculture: A framework for improving targeted interventions

Gilberthe Benimana, James Warner, and Serge Mugabo¹

Research from a recent [IFPRI agricultural survey](#) indicates that there is a broad spectrum of commercial engagement by Rwandan farmers. While this continuum is important for understanding commercialization, grouping farmers by relevant commonalities further improves our knowledge of how different groups engage in markets. Moving beyond simple subsistence and commercialized farmer dichotomies, this study provides a more nuanced understanding by grouping smallholder farmers into types, or typologies, based on 35 common characteristics that are both consistent within these groups and relatively diverse between them. Specifically, this analysis identifies five types of Rwandan farmers, in two broad groups, that disaggregates rural households into meaningful categories for varied potential responses to economic opportunities as well as potential strategic interventions.

Rwanda Farmer Typology

Employing factor-cluster analysis, this research constructs five categories of farmers in two broad groups. The first group, group A, consists of farm households, broadly classified as less wealthy, less commercialized, with a net negative gross margin.² Within this group, there are three types of farmers including: Type 1—Less commercialized older male headed households with larger families, Type 2—Better educated, youth headed households, who are more market oriented but have smaller land holdings, and Type 3—Older female headed households who

¹ Benimana, Gilberthe; Warner, James; and Mugabo, Serge. 2024. [Identifying farm typologies in Rwandan agriculture: A framework for improving targeted interventions](#). Rwanda SSP Working Paper 10. Washington, DC: International Food Policy Research Institute.

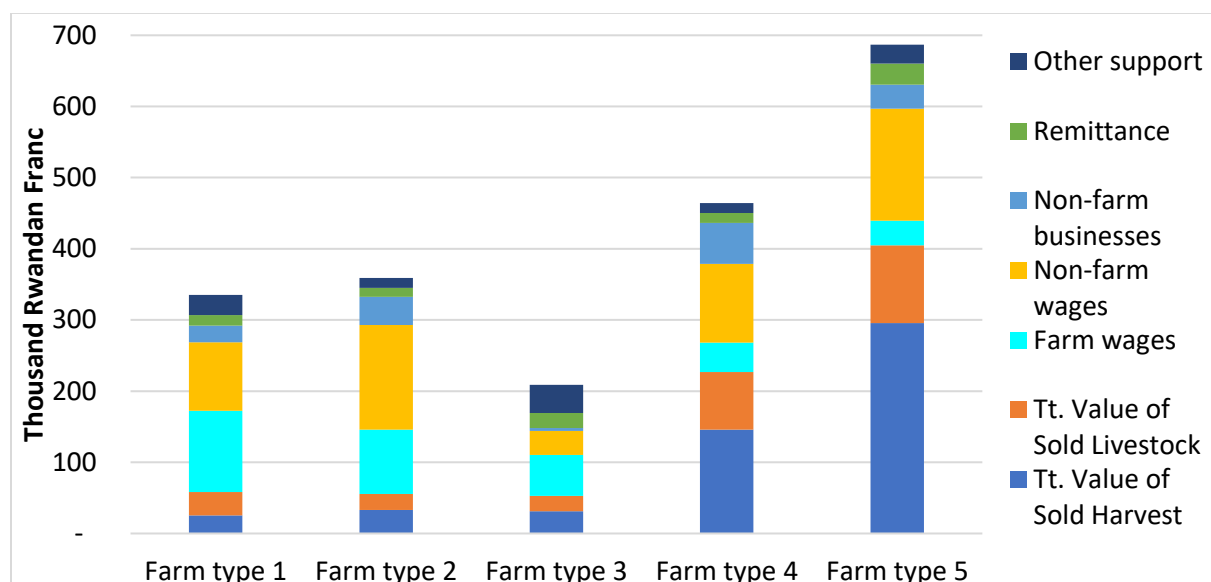
² We define gross marketing margins the total market sales minus variable production costs. This captures the household's market interactions but does not include own use, including own consumption, implicit family labor costs and input subsidies. We chose to focus on gross market margins because they more accurately reflect commercialization and not gross economic margins, which includes additional implicit costs and own consumption and use of crop values created.

produce lower agricultural production values relative to their assets.

The second group, Group B, are wealthier, more commercialized households with positive gross margins and larger landholdings. Specifically, farm type 4 has greater livestock sales, more access to inputs and agricultural extension services and generates more non-farm business income. Farm type 5 is also highly commercialized in crop production and has large livestock holdings that are not as commercialized. Taken together this analysis identifies two groups and five farm types. By creating these typologies³ we seek to improve our understanding of Rwandan agricultural commercialization and to facilitate better targeting of potential interventions.

These classifications should improve farm household designations beyond the typical subsistence – commercialized dichotomy mentioned elsewhere. For example, Figure 1 identifies income of all five farm types by source and percentage amounts. While farm types 1-3 have approximately the same amount of crop value sold (percentage values range from 22% – 26%) the three types are quite different in their total income, wage labor and non-farm income engagement. The typologies are meant to expand our understanding of commercialization beyond the more simplistic variable of crop sales.

Figure 1. Sources of income by farm type (%)



Authors' calculations

Note: **Farm type 1:** less commercialized male headed households, **Farm type 2:** educated youth headed household, **Farm type 3:** older female headed households, **Farm type 4:** moderate wealthier households, **Farm type 5:** wealthier households

This study seeks to contribute a better understanding of the agricultural sector by characterizing smallholder farming in Rwanda using a nuanced analysis of farmer typologies concluding with potential interventions across the farmer typologies.

³ Typology construction provides an efficient method to better understand farmer diversity by delineating groups with common characteristics.

Figure 2. Farm Typologies (2 groups, 5 types)

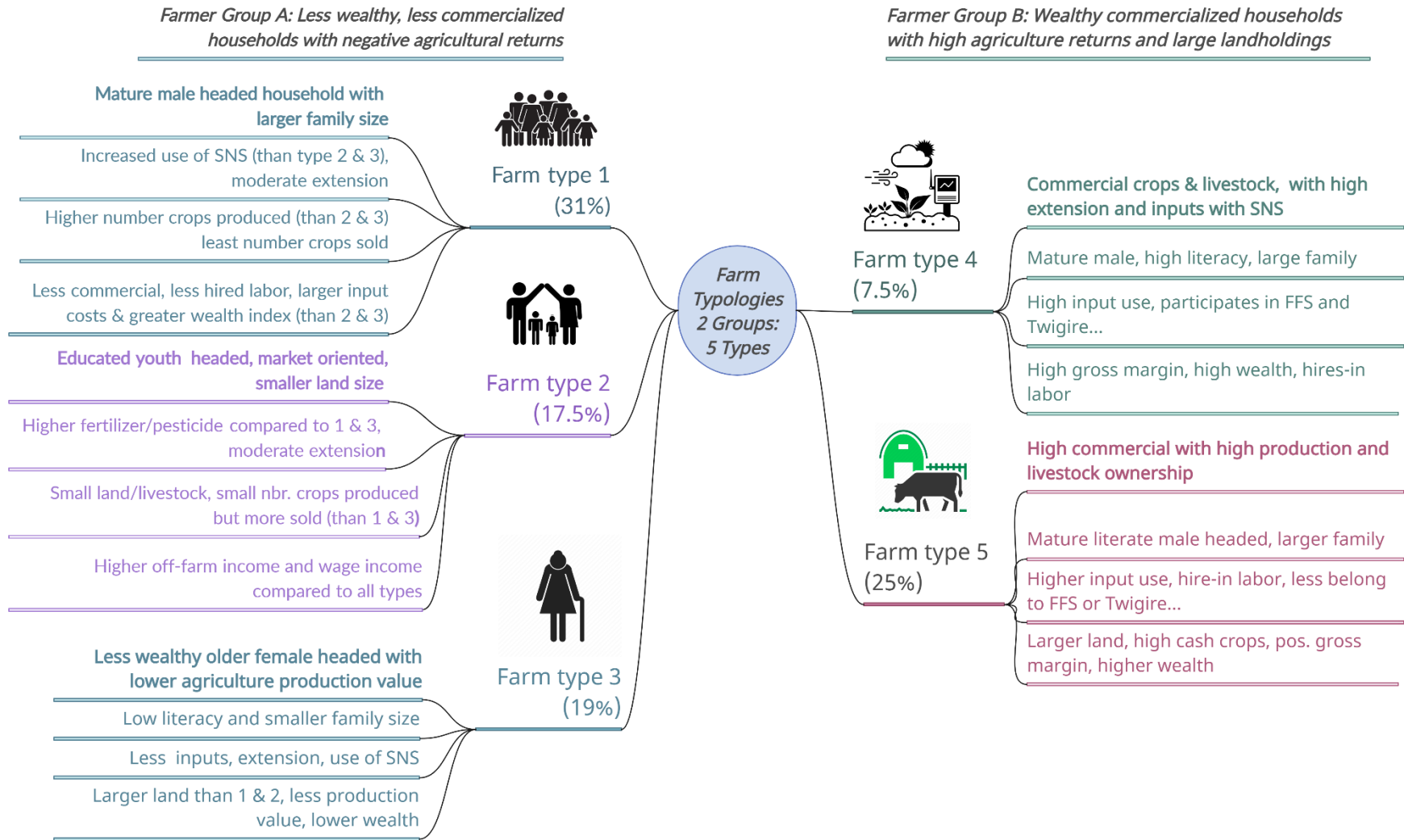
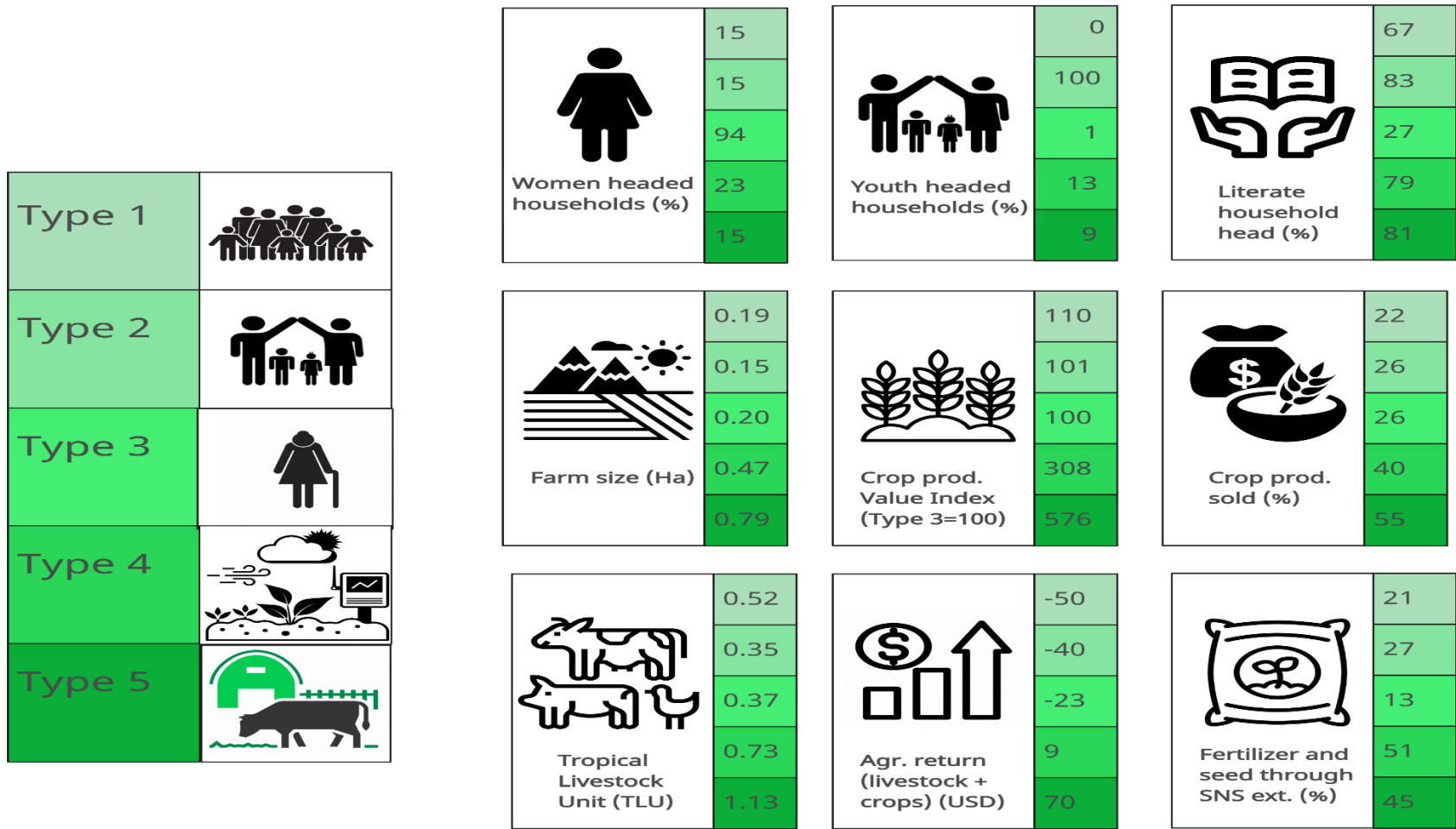


Figure 3. General statistics by farm type



Authors' calculations

Note: Farm type 1: less commercialized male headed households, Farm type 2: educated youth headed household, Farm type 3: older female headed households, Farm type 4: moderate wealthier households, Farm type 5: wealthier households.

Recommendation for farmer group A: Less wealthy and less commercialized households with negative agricultural returns

Farm type 1: Less commercialized mature male headed households with large families

- Targeting food crop productivity could ease directly consumed food needs and promote commercialization.
- Given the higher levels of family labor, promote higher value, relatively labor-intensive crop production.
- Develop entrepreneurship skills and training programs in farming and business management.
- Encourage diversifying income sources through agroforestry, animal husbandry, and non-farm enterprises.
- Based on de-risking strategies, improve access to affordable credit and insurance
- Strengthening participation in farmer organizations and cooperatives

Farm type 2: Educated youth headed, market-oriented households with small land size

- Provide targeted agripreneurship skills
- Given greater literacy, focus on digital technologies
- Increase access to land, e.g. provision of non-exploited land to youth.
- Improve coordination of land rental markets to better match those who rent out to those who rent in
- Develop microfinance and credit initiatives tailored to the needs of rural youth farmers
- Establish youth-led cooperatives and networks to enhance collective bargaining and capacity
- Given the relative importance of their wage labor income, target improvement of wage payments

Farm type 3: Older female headed household who produce lower agricultural production value

- Ease access to extension service and consider lower literacy designed information services
- Facilitate programs that will improve their literacy capacity for improved participation in extension and cooperatives
- Improve coordination of land rental markets to better match those who rent out to those who rent in
- Support women-centered cooperatives and associations to enhance collective bargaining power and social capital
- Promote women's empowerment through advocacy, awareness, and capacity building
- Address challenges of family labor shortages and lack of assets to improve commercialization

Recommendations for Group B: Wealthy commercialized households with high agriculture returns and large landholdings.

Farm type 4: *Highly commercialized in livestock with greater access to extension services*

- Improve market infrastructure to increase sales of high value crops
- Develop and maintain market information systems to help farmers make better informed marketing decisions
- Supporting research and innovation to enhance the quality and resilience of high-value seeds
- Providing subsidies or incentives for improving animal health and welfare practices
- Develop local livestock markets and value-added products, like cheese, yogurt, leather, wool, etc.

Farm type 5: *Highly commercialized households in crop and large livestock ownership*

- Promote diversification and value addition of high-value crops to increase marketability and profitability
- Provide training to farmers on best practices for crop production and post-harvest handling
- Establish market linkages and contract farming arrangements to ensure stable demand and prices
- Support cooperatives and associations to enhance collective action, access to finance and services
- Providing incentives for investing in sustainable farming practices
- Support agricultural research to develop and disseminate new technologies, crop varieties and practices

ABOUT THE AUTHOR(S)

Gilberthe Benimana is a Research Analyst in the Development Strategy and Governance (DSG) Unit of the IFPRI, based in Kigali, Rwanda.

James Warner is a Research Fellow of the DSG Unit, and the Program Leader of the Rwanda Strategy Support Program of the IFPRI, based in Kigali, Rwanda.

Serge Mugabo is a Research Analyst in the Development Strategy and Governance (DSG) Unit of the IFPRI, based in Kigali, Rwanda.

INTERNATIONAL FOOD POLICY RESEARCH
INSTITUTE

1201 Eye St, NW | Washington, DC 20005 USA
T. +1-202-862-5600 | F. +1-202-862-5606
ifpri@cgiar.org
www.ifpri.org | www.ifpri.info

IFPRI-RWANDA

KG 563 Street #7, Kacyiru
P.O. Box 1269 | Kigali, Rwanda
IFPRI-Rwanda@cgiar.org
www.rwanda.ifpri.info



USAID
FROM THE AMERICAN PEOPLE



The Rwanda Strategy Support Program (Rwanda SSP) is managed by the International Food Policy Research Institute (IFPRI). Funding support for Rwanda SSP is provided by the European Union (EU); the United States Agency for International Development (USAID); and CGIAR. This publication has been prepared as an output of Rwanda SSP. It has not been independently peer reviewed. Any opinions expressed here belong to the author(s) and do not necessarily reflect those of IFPRI, EU, USAID, or CGIAR.

© 2024, Copyright remains with the author(s). This publication is licensed for use under a Creative Commons Attribution 4.0 International License (CC BY 4.0). To view this license, visit <https://creativecommons.org/licenses/by/4.0>.