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Gender and Age Employment Gaps within Agrifood Value Chains in Bangladesh and Uganda

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As countries develop, their economies experience both a structural transformation, in terms of economic activity and labor (Johnston and Mellor 1961; Kuznets 1973), and a food systems transformation (Masters et al. 2022). Diets, preferences, and food consumption patterns change, farm production increases, and farm labor declines. In turn, jobs shift from on-farm agricultural production to off-farm agricultural services (Yi et al. 2024; McMillan and Rodrik 2011).[1] Given these structural changes in employment, it is important to understand who benefits from employment in nonfarm agricultural services. Many suggest that jobs within intermediary segments of agrifood value chains represent a way to close both gender and age employment gaps (Arslan et al. 2021; Dolislager et al. 2021; FAO 2020; Thurlow 2020; Vos and Wiegel 2021; Quisumbing et al. 2021). Yet, available data do not allow for consistent disaggregation of employment outcomes by demographic factors within intermediary segments of agrifood value chains (Ambler et al. 2022; Barrett et al. 2022; Bellemare, Bloem, and Lim 2022).[2]

We present insights from data collected with a novel sampling approach and document the presence of meaningful gender and age employment gaps within intermediary segments of agrifood value chains, which include trading, processing, and wholesaling activities.[3]

KEY MESSAGES

- Although employment within agrifood value chains represents a key mechanism for structural transformation and economic development, available data do not allow for consistent gender or age disaggregation of employment within intermediary segments of agrifood value chains.
- We observe large gender gaps in both those who operate intermediary firms within agrifood value chains and those who are employed by these firms.
- The vast majority of those who operate intermediary agrifood value chain firms are not part of the youth population (that is, 15–24 years old).
- If agrifood value chains are going to play a meaningful role in closing gender and age gaps in employment, systematic barriers that constrain women's economic empowerment, youth employment, and the creation of "good" jobs need to be addressed.

We conclude with a discussion of possible policy responses and an agenda for future research.

The analysis discussed in this brief is related to research by Palacio-Lopez and colleagues (2017), who document gender gaps in on-farm labor contributing

[1] Theory and empirical evidence show that jobs shift to nonagricultural services in addition to agricultural services. Our work in this brief intentionally focuses on agricultural services to understand demographic patterns in employment within the rural postfarm agricultural service sector.

[2] Note that we follow Barrett and colleagues (2022) and use the term "agrifood," instead of simpler terms such as "food," as the value chains we consider here effectively transform agricultural produce into the food consumers eat.

[3] We characterize "intermediary agrifood value chain actors" as those who operate firms within "intermediary segments" of agrifood value chains. These include small traders who buy from farmers, larger traders who aggregate produce, processors who conduct some form of processing activity that in part transforms agricultural produce into food, and wholesalers who sell at larger scale to retailers, exporters, or final consumers.

TABLE 1 Commodity characteristics

	Rice in Bangladesh	Potato in Bangladesh	Arabica coffee in Uganda	Soybean in Uganda
Export Value	US$12 million in 2022[a]	US$14 million in 2022[a]	US$878 million in 2022[a]	US$8 million in 2022[a]
Production Total	37 million metric tons in 2024[b]	10 million metric tons in 2023[c]	393,900 metric tons in 2024[a]	200,000 metric tons in 2024[b]
Consumption Total	36 million metric tons in 2021[a]	8 million metric tons in 2021[d]	13,800 metric tons in 2018[a]	25,000 metric tons in 2023[a]

Source: [a]The Observatory of Economic Complexity; [b]USDA Foreign Agriculture Service; [c]Rahim et al. (2023); [d]United Nations FAOSTAT.

to primary agricultural production, using data from the World Bank's Living Standards Measurement Study–Integrated Surveys on Agriculture (LSMS-ISA). Our analysis differs, and is unique, in that we focus on labor within intermediary agrifood value chain firms rather than labor contributing to primary agricultural production. This is important because intermediary firms within agrifood value chains are considered the "hidden middle" (Reardon 2015) due to their underrepresentation in mainstream policy debates and research discussions.

Sampling Approach and Data

Many existing data sources are not well-suited for studying small- and medium-sized firms operating in rural areas within agrifood value chains (Barrett et al. 2022). The World Bank's LSMS-ISA dataset, for example, focuses on sampling households rather than firms and thus only includes information on a limited sample of a specific type of firm. Existing data are limited by the lack of critical information needed to understand how these firms function, such as details about contracts, transactions, employment, or interactions between buyers and sellers (Ambler et al. 2022). In this brief, we present insights from data collected specifically for this purpose, using a network-based sampling approach within the rice and potato value chains in Bangladesh and the arabica coffee and soybean value chains in Uganda (Ambler et al. 2024).

Although our data come from only two countries, they represent countries with varying demographic features, at different levels of economic development (for example, Bangladesh's gross national income per capita was US$2,860 in 2023 while Uganda's was US$980), and from distinct regions of the world. This is important because classic theoretical and empirical research shows that the structure of economies—measured primarily with intersectoral labor allocation estimates—evolves with indicators of economic development (Johnston and Mellor 1961; Kuznets 1973). Additionally, as summarized in Table 1, within each country, we survey distinct agrifood value chains that represent commodities with different levels of export market integration, local production value, and domestic consumption demand.

We adapt the respondent-driven sampling approach (Heckathorn 1997; Heckathorn and Cameron 2017) to fit the context of agrifood value chains. The resulting sampling process thus begins with a small set of farmers used to "seed" our sample. Then, using an iterative process, intermediary agrifood value chain actors themselves determine the interview path through the value chain by indicating to whom they sell a given commodity and providing contact information. The approach allows us to limit the number of intermediary actors omitted from our sample, construct sampling weights to adjust for any convenience sampling bias that might persist in our data, and disaggregate our statistics by the primary role of each intermediary actor (that is, trader, processor, or wholesaler). As discussed by Ambler and colleagues (2024), this sampling approach might omit some intermediary actors, but it also likely captures a larger set of intermediary actors than alternative sampling approaches.

Results

With these data, we describe the demographic characteristics of both (1) those who operate firms within intermediary segments (trading, processing, and wholesaling) of agrifood value chains and (2) those employed by these firms. The statistics reported in Table 2 indicate four key findings.

First, those who operate firms within intermediary agrifood value chains are overwhelmingly male. Within the rice and potato value chains in Bangladesh, essentially all our survey respondents are men. Although this gender

TABLE 2 Gender and age employment gaps

Country	Commodity	Value Chain Segment	1	2	3	4	5		6		7	
			Obs.	Share male	Age	Employ others	Number of full-time employees		Number of part-time employees		Number of seasonal employees	
							Men	Women	Men	Women	Men	Women
Bangladesh	Rice	Traders	1,066	0.99	44	0.04	0.04	0.00	1.63	0.03	8.63	0.20
		Processors	456	1.00	46	0.18	0.30	0.12	3.86	1.57	8.92	2.22
		Wholesalers	220	0.99	46	0.03	0.05	0.00	0.91	0.04	6.64	0.04
	Potato	Traders	1,117	0.99	44	0.04	0.06	0.00	2.83	0.77	12.67	4.87
		Wholesalers	235	0.99	44	0.08	0.27	0.00	2.15	1.04	8.94	4.58
Uganda	Arabica coffee	Traders	1,401	0.84	40	0.35	0.27	0.15	0.75	0.31	1.22	0.64
		Processors	111	0.90	39	0.59	1.79	1.31	1.63	1.03	4.07	4.41
		Wholesalers	334	0.94	42	0.40	0.64	0.24	0.90	0.31	1.59	1.41
	Soybean	Traders	507	0.91	38	0.44	1.51	0.17	1.80	0.17	1.30	0.28
		Wholesalers	280	0.80	39	0.71	3.37	0.48	2.30	0.43	3.07	0.66

Note: All statistics calculated using the segment-adjusted multiplicity weight (Ambler et al. 2024).

disparity is notably smaller within the arabica coffee and soybean value chains in Uganda, most of our survey respondents—between 80 and 94 percent—are men.

Second, those who operate firms within intermediary agrifood value chains are generally not part of the youth population, meaning that they are not between 15 and 24 years of age (United Nations n.d.). Across all observed segments within each of the four value chains in our data, the average age of firm operators is between 38 and 46 years old, and less than 5 percent of them can be categorized as part of the youth population.

Third, rates of employment vary considerably across agrifood value chains but skew toward part-time or seasonal employment rather than full-time employment. Our survey asked respondents whether their firm employed anyone in the previous 30 days. The share of firms who report employing others varies from less than 10 percent among traders and wholesalers within the rice and potato value chains up to 71 percent within the soybean value chain. Moreover, except for coffee processors and soybean intermediaries, part-time and seasonal employment is typically much more common than full-time employment.

Fourth, large gender gaps persist in employment opportunities within the agrifood value chains. Across nearly all observed segments within each of the four value chains in our data, we observe that more men are employed than women in all types of employment: full-time, part-time, and seasonal.

Policy Implications and Future Research

If food systems transformation is to help address the goals of inclusively reducing poverty and promoting food security, then it is crucial that the off-farm agrifood system be able to provide equitable opportunities for good jobs. The results presented in this brief highlight that meaningful gaps in women's and young people's employment exist in rural areas within intermediary segments of agrifood value chains. Therefore, if agri-food value chains are going to play a meaningful role in closing gender and age gaps in employment, systematic barriers that constrain women's economic empower-ment, youth employment, and the creation of good jobs need to be addressed.

What are these systematic barriers? While these certainly are context-dependent, we can comment on a few broad categories: social barriers, for example, include norms that vary by gender about what types of jobs are appropriate for men and women (Muñoz Boudet et al. 2013) or prevailing views that influence

how youth aspire to jobs in particular industries (Ross 2019). Economic barriers can include limited access to financial capital—which is sometimes particularly acute among women and young people—necessary to make investments in machinery for processing, vehicles for transportation, or buildings for storage (Chundakkadan and Sasidharan 2021). In addition, structural barriers can constrain growth among small firms in low- and middle-income countries (Caio et al. 2016). Limited employment opportunities, especially for full-time work, are a consequence of slow or no scaling of the mostly small firms that together form agrifood value chains in rural areas of low- and middle-income countries.

These results, therefore, highlight an important role for policy. While agrifood value chains have the potential to generate new jobs and close gaps for both women's and young people's employment in low- and middle-income countries, policy discussions must consider how to address existing systematic barriers that generate gender and age employment gaps. Possible solutions include policies that aim to shape and influence social norms to improve employment outcomes for women (Hillenbrand and Miruka 2019), focus on relieving constraints on financial inclusion and discrimination in access to financial services among women (Demirgüç-Kunt, Klapper, and Singer 2013), and promote firm growth for both women (McKenzie and Puerto 2021) and young people (McKenzie 2017).

We have limited, if any, documented evidence of the effectiveness of policies that aim to reduce women's and young people's employment gaps among intermediary agrifood value chain actors in rural areas of low- and middle-income countries. This, ultimately, contributes to what Reardon (2015) calls "the hidden middle," as the intermediary agrifood value chain actors tend to be excluded from mainstream policy and research discussions, despite their important role in the overall food system (Yi et al. 2021).

The existence of the hidden middle clarifies the objective: we need to include intermediary agrifood value chain actors in future policy discussions and in the implementation of policies that aim to close gender and age employment gaps. As noted above, existing data are not generally well-equipped to enable the study of small- and medium-sized firms operating within the intermediary segments of agrifood value chains. Future research efforts will, therefore, need to build on the work of Ambler and colleagues (2024) and develop innovative ways to collect data from firms operating within agrifood value chains. With these new methods, we can work with policymakers and private-sector actors to evaluate policies and test innovative business models that aim to achieve inclusive development outcomes.

References

Ambler, K., A. de Brauw, S. Herskowitz, and C. Pulido. 2022. "Value Chain Surveys: What Do They Cover, and How Well?" International Food Policy Research Institute (IFPRI) Project Note. IFPRI, Washington, DC.

Ambler, K., J.R. Bloem, A. de Brauw, S. Herskowitz, and J. Wagner. 2024. "A Network-Driven Data Collection Approach for Agri-Food Value Chains." IFPRI Discussion Paper 2256. IFPRI, Washington, DC.

Arslan, A., D. Tschirley, C. Di Nucci, and P. Winters. 2021. "Youth Inclusion in Rural Transformation." *Journal of Development Studies* 57:4, 537–543.

Barrett, C.B., T. Reardon, J. Swinnen, and D. Zilberman. 2022. "Agri-food Value Chain Revolutions in Low- and Middle-Income Countries," *Journal of Economic Literature* 60 (4): 1316–1377.

Bellemare, M., J.R. Bloem, and S. Lim. 2022. "Producers, Consumers, and Value Chains in Low- and Middle-Income Countries." In *Handbook of Agricultural Economics*, Vol. 6, eds. C.B. Barrett and D.R. Just, 4933–4996. Amsterdam: Elsevier.

Caio, P., T.A. Cravo, L. Taylor, L. Gonzalez, I. Musse, I. Futado, A.C. Sierra, and S. Abdelnour. 2016. "The Impact of Business Support Services for Small and Medium Enterprises on Firm Performance in Low- and Middle-Income Countries: A Systematic Review." *Campbell Systematic Reviews* 12 (1): 1–167.

Chundakkadan, R., and S. Sasidharan. 2021. "Gender Gaps and Access to Finance: A Cross-Country Analysis." *Review of Development Economics* 26 (1): 180–207.

Demirgüç-Kunt, A., L.F. Klapper, and D. Singer. 2013. "Financial Inclusion and Legal Discrimination Against Women: Evidence from Developing Countries." World Bank Policy Research Working Paper 6416. World Bank, Washington, DC.

Dolislager, M., T. Reardon, A. Arslan, L. Fox, S. Liverpool-Tasie, C. Sauer, and D. Tschirley. 2021. "Youth and Adult Agrifood System Employment in Developing Regions: Rural (Peri-Urban to Hinterland) vs. Urban." *Journal of Development Studies* 57 (4): 571–593.

FAO (Food and Agriculture Organization of the United Nations). 2020. *Promoting Youth Employment in Uganda's Coffee Sector*. Rome: Food and Agriculture Organization of the United Nations.

Heckathorn, D.D. 1997. "Respondent-Driven Sampling: A New Approach to the Study of Hidden Populations." *Social Problems* 44: 174–199.

Heckathorn, D.D., and C.J. Cameron. 2017. "Network Sampling: From Snowball and Multiplicity to Respondent-Driven Sampling." *Annual Review of Sociology* 43: 101–119.

Hillenbrand, E., and M. Miruka. 2019. "Gender and Social Norms in Agriculture: A Review." In *Annual Trends and Outlook Report: Gender Equality in Rural Africa: From Commitments to Outcomes*, eds. A.R. Quisumbing, R. Meinzen-Dick, and J. Njuki, J., 11–31. Washington, DC: International Food Policy Research Institute (IFPRI).

Johnston, B.F., and J.W. Mellor. 1961. "The Role of Agriculture in Economic Development." *American Economic Review* 51 (4): 566–593.

Kuznets, S. 1973. "Modern Economic Growth: Findings and Reflections." *American Economic Review* 63 (3): 247–258.

Masters, W. A., A.B. Finaret, and S.A. Block. 2022. "The Economics of Malnutrition: Dietary Transition and Food System Transformation." In *Handbook of Agricultural Economics*, Vol. 6, eds. C.B. Barrett and D.R. Just, 4997–5083. Amsterdam: Elsevier.

McKenzie, D. 2017. "Identifying and Spurring High-Growth Entrepreneurship: Experimental Evidence from a Business Plan Competition." *American Economic Review* 207 (8): 2278–2307.

McKenzie, D., and S. Puerto. 2021. "Growing Markets through Business Training for Female Entrepreneurs: A Market-Level Randomized Experiment in Kenya." *American Economic Journal: Applied Economics* 13 (2): 297–332.

McMillan, M., and D. Rodrik. 2011. "Globalization, Structural Change, and Productivity Growth." NBER (National Bureau of Economic Research) Working Paper 17143. NBER, Cambridge, MA.

Muñoz Boudet, A.M., P. Petesch, C. Turk, and A. Thumala. 2013. *On Norms and Agency: Conversations about Gender Equality with Women and Men in 20 Countries*. Directions in Development. Washington, DC: World Bank.

Observatory of Economic Complexity. n.d. Agricultural trade, export, and production value data, accessed November 2024.

Palacio-Lopez, A., L. Christiaensen, and T. Kilic. 2017. "How Much of the Labor in African Agriculture Is Provided by Women?" *Food Policy* 67: 52–63.

Rahim, M.A., N. Sultana, A.T.M. Mannan, and N. Ahmed. 2023. "Potato Production in Bangladesh." In *Potato Production Worldwide*, eds. M.E. Çalişkan, A. Bakhsh, and K. Jabran, 397–407. San Diego: Academic Press.

Reardon, T. 2015. "The Hidden Middle: The Quiet Revolution in the Midstream of Agrifood Value Chains in Developing Countries." *Oxford Review of Economic Policy* 31: 45–63.

Ross, P. 2019. "Occupation Aspirations, Education Investment, and Cognitive Outcomes: Evidence from Indian Adolescents." *World Development* 123: 104613.

Thurlow, J. 2020. "Measuring Agricultural Transformation." Presentation to USAID, Washington, DC, January 20. https://www.slideshare.net/ifpri/aggdp-agemp-measuring-agricultural-transformation

Quisumbing, A., J. Heckert, S. Faas, G. Ramani, K. Raghunathan, and H. Malapit. 2021. "Women's Empowerment and Gender Equality in Agricultural Value Chains: Evidence from Four Countries in Asia and Africa." *Food Security* 13: 1101–1124.

United Nations. n.d. "Definition of Youth." https://www.un.org/esa/socdev/documents/youth/fact-sheets/youth-definition.pdf

United Nations FAOSTAT. n.d. Global Individual Food Consumption Data Tool, accessed November 2024. https://www.fao.org/gift-individual-food-consumption/en

USDA Foreign Agriculture Service. n.d. Global Agricultural Information Network (GAIN), agricultural production data, accessed November 2024. https://gain.fas.usda.gov/#/home

Vos, R., and J. Wiegel. 2021. Rethinking Food Markets and Value Chains for Inclusion and Sustainability. CGIAR Research Initiative Proposal.

Yi, J., E.M. Meemken, V. Mazariegos-Anastassiou, J. Liu, K. Kim, M.I. Gomez, P. Canning, and C. Barrett. 2021. "Post-Farmgate Food Value Chains Make Up Most of the Consumer Food Expenditures Globally." *Nature Food* 2: 417–425.

Yi, J., D. Tran, S. Jiang, M.I. Gomez, P. Canning, J.R. Bloem, and C.B. Barrett. 2024. "How Agri-Food Value Chain Employment and Compensation Evolve with Structural Transformation." Unpublished working paper.

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