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Areas of expertise

Agricultural and rural transformation
Public and private investment
Innovation policy
Economic geography
Agriculture-nutrition linkage
Sub-Saharan Africa, South Asia, Central Asia

Employment

Senior Research Fellow, International Food Policy Research Institute (IFPRI)	2018. 10 –
Research Fellow, IFPRI	2012. 4 – 2018.10
Post-Doctoral Fellow, IFPRI	2012. 1 – 2012.4
Post-Doctoral Fellow, IFPRI, Nigeria Office	2009. 1 – 2011.12

Education

Ph.D.	Agricultural & Consumer Economics, University of Illinois at Urbana-Champaign, USA	2008
M.S.	Agricultural Economics, University of Tennessee, USA	2004
B.A.	Economics, University of Tokyo, Japan	2002

Journal publications

43. **Takeshima H**, ZW Aung, I Masias & B Minten. Endogenous technologies and productivity in rice production: Roles of social instability in Myanmar since 2021. *Agricultural Economics*, revise & resubmit.
42. **Takeshima H**. 2024. [Public expenditure's role in reducing poverty and improving food and nutrition security: Cross-country evidence from SPEED Data](#). *European Journal of Development Research*, in press.
41. **Takeshima H**. 2024. [Agricultural mechanisation and gendered labour activities across sectors: Micro-evidence from multi-country farm household data](#). *Journal of Agricultural Economics* 75(1), 425–456.
40. **Takeshima H**, F Yamauchi, HO Edeh & M Hernandez. 2023. [Solar-powered cold-storage and agrifood market modernization in Nigeria](#). *Agricultural Economics* 54(2), 234–255.
39. **Takeshima H**, I Masias, MT Win & PP Zone. 2023. [Effects of COVID-19 restrictions on mechanization service providers and mechanization equipment retailers: Insights from phone surveys in Myanmar](#). *Review of Development Economics* 27(1), 323–351.
38. **Takeshima H**, B Balana, J Smart, HO Edeh, MA Oyeyemi & KS Andam. 2022. [Subnational public expenditures, short-term household-level welfare and economic flexibility: Evidence from Nigeria](#). *Agricultural Economics*, 53(5), 739–755.
37. **Takeshima H**. 2022. [Agrifood Market Participation and Household Livelihood Diversification: Evidence from Vietnam](#). *Journal of Developing Areas* 56(4), 217–230.
36. **Takeshima H**, K Akramov, A Park, J Ilyasov & T Ergasheva. 2022. [Agriculture-nutrition linkages, cooking-time, intra-household equality among women and children: Evidence from Tajikistan](#). *European Journal of Development Research* 34(2), 940–977.
35. **Takeshima H**, F Yamauchi & M Enomoto. 2021. [Agricultural, Economic, and Human Development: Joint Research Contributions of Japan and International Food Policy Research Institute](#). *Japanese Agricultural Research Quarterly* 55(S1), 521–531.
34. Amare M, B Shiferaw, **H Takeshima** & G Mavrotas. 2021. [Variability in agricultural productivity and rural household consumption inequality: Evidence from Nigeria and Uganda](#). *Agricultural Economics* 52(1), 19–36.
33. Boughton D, J Goeb, I Lambrecht, D Headey, **H Takeshima**, K Mahrt, I Masias, S Goudet, C Ragasa, MK Maredia, B Minten & X Diao. 2021. [Impacts of COVID-19 on agricultural production and food](#)

- [systems in late transforming Southeast Asia: The case of Myanmar](#). *Agricultural Systems* 188, 103026.
32. Takeshima H & A Kumar. 2021. [Returns-to-scale and factor-endowments-induced specialization: agricultural mechanization and agricultural transformation in Nepal](#). *Journal of Developing Areas* 55(4), 133–145.
31. Takeshima H & Y Liu. 2020. [Smallholder mechanization induced by yield-enhancing biological technologies: Evidence from Nepal and Ghana](#). *Agricultural Systems* 184, 102914.
30. Takeshima H, K Akramov, A Park, J Ilyasov, Y Liu & T Ergasheva. 2020. [Agriculture–nutrition linkages with heterogeneous, unobserved returns and costs: Insights from Tajikistan](#). *Agricultural Economics* 51(4), 553–565.
29. Kumar A, H Takeshima, G Thapa, N Adhikari, S Saroj, M Karkee & PK Joshi. 2020. [Adoption and diffusion of improved technologies and production practices in agriculture: Insights from a donor-led intervention in Nepal](#). *Land Use Policy* 95, 104621.
28. Takeshima H, P Hatzenbuehler & H Edeh. 2020. [Effects of agricultural mechanization on economies of scope in crop production in Nigeria](#). *Agricultural Systems* 177, 102691.
27. Takeshima H. 2019. [Geography of plant breeding systems, agroclimatic similarity, and agricultural productivity: an insight from Northern Nigeria](#). *Agricultural Economics* 50(1), 67–78.
26. Takeshima H, N Houssou, X Diao. 2018. [Effects of tractor ownership on returns-to-scale in agriculture: Evidence from maize in Ghana](#). *Food Policy* 77, 33–49.
25. Takeshima H. 2018. [Mechanize or exit farming? Multiple-treatment-effects model and external validity of adoption impacts of mechanization among Nepalese smallholders](#). *Review of Development Economics* 22(4), 1620–1641.
24. Kumar A, S Saroj, PK Joshi & H Takeshima. 2018. [Does cooperative membership improve household welfare? Evidence from a panel data analysis of smallholder dairy farmers in India](#). *Food Policy* 75, 24–36.
23. Takeshima H. 2018. [Distributional effects of agricultural infrastructure in developing countries: Large irrigation dams and drought mitigation in Nigeria](#). *Journal of Developing Areas* 52(3), 1–13.
22. Takeshima H. 2017. [Custom-hired tractor services and returns to scale in smallholder agriculture: A production function approach](#). *Agricultural Economics* 48(3), 363–372.
21. Xie H, L You & H Takeshima. 2017. [Invest in small-scale irrigated agriculture: A national assessment on potential to expand small-scale irrigation in Nigeria](#). *Agricultural Water Management* 193, 251–264.
20. Takeshima H, R Adhikari, BD Kaphle, S Shivakoti & A Kumar. 2017. [Heterogeneous Returns to Chemical Fertilizer at the Intensive Margins: Insights from Nepal](#). *Food Policy* 69, 97–109.
19. Takeshima H. 2016. [Understanding irrigation system diversity in Nigeria: A modified cluster-analysis approach](#). *Irrigation and Drainage* 65(5), 601–612.
18. Takeshima H & LS Liverpool-Tasie. 2015. [Fertilizer subsidy, political influence and local food prices in sub-Saharan Africa: Evidence from Nigeria](#). *Food Policy* 54, 11–24.
17. Takeshima H, E Edeh, A Lawal & M Ishiaka. 2015. [Characteristics of private-sector tractor service provisions: Insights from Nigeria](#). *Developing Economics* 53(3), 188–217.
16. Takeshima H. 2015. [Onset risks and draft animal investment in Nigeria](#). *Journal of International Agricultural Trade and Development* 9(2), 137–163.
15. Takeshima H & L Nagarajan. 2015. [Farmer preferences on seed purchase timing: some evidence from Nigeria](#). *Journal of Crop Improvement* 29(1), 131–158.
14. Takeshima H & E Nkonya. 2014. [Government fertilizer subsidy and commercial sector fertilizer demand: Evidence from the Federal Market Stabilization Program \(FMSP\) in Nigeria](#). *Food Policy* 47, 1–12.
13. Liverpool-Tasie LS & H Takeshima. 2013. [Input promotion within a complex subsector: fertilizer in Nigeria](#). *Agricultural Economics* 44(6, Special Issue), 581–594.
12. Takeshima H, A Nin Pratt & X Diao. 2013. [Mechanization and agricultural technology evolution, agricultural intensification in sub-Saharan Africa: typology of agricultural mechanization in Nigeria](#). *American Journal of Agricultural Economics* 95(5, ASSA Proceeding Issue), 1230–1236.
11. Takeshima H & L Nagarajan. 2012. [Minor millets in Tamil Nadu, India: Local market participation, on-farm diversity and farmer welfare](#). *Environment and Development Economics* 17(5, Special Issue), 603–632.
10. Takeshima H & A Winter-Nelson. 2012. [Sales location among semi-subsistence cassava farmers in Benin: a heteroskedastic double selection model](#). *Agricultural Economics* 43(6), 655–670.

9. Gruère G & H Takeshima. 2012. [Will they stay or will they go? The political influence of GM averse importing companies on biosafety decision makers in Africa](#). *American Journal of Agricultural Economics* 94(3), 736–749.
8. Takeshima H & F Yamauchi. 2012. [Risks and farmers' investment in productive assets in Nigeria](#). *Agricultural Economics* 43(2), 143–153.
7. Takeshima H & G Gruère. 2011. [Pressure Group Competition and GMO Regulations in Sub-Saharan Africa - Insights from the Becker Model](#). *Journal of Agricultural & Food Industrial Organization* 9(1), Article 7.
6. Takeshima H. 2011. [Sensitivity of welfare effects estimated by an equilibrium displacement model: a productivity growth for semi-subsistence crops in a sub-Sahara African market with high market margin](#). *Journal of International Agricultural Trade and Development* 7(1), 1–22.
5. Takeshima H, A Adeoti & S Salau. 2011. [Measuring the effect of transaction costs for investment in irrigation pumps: Application of unobserved stochastic threshold model to the case of Nigeria](#). *African Journal of Agricultural and Resource Economics* 6(2), 118–143.
4. Takeshima H. 2011. [Distribution of welfare gains from GM cassava in Uganda across different population groups and market margins](#). *African Journal of Agricultural and Resource Economics* 6(1), 35–53.
3. Takeshima H. 2011. [Assessing input-specific knowledge gaps in characteristics of farmers' demand – seed and irrigation technologies in Nigeria](#). *African Journal of Agricultural Research* 6(9), 2072–2077.
2. Takeshima H. 2010. [Prospects for development of genetically modified cassava in Sub-Saharan Africa](#). *AgBioForum* 13(1), 63–75.
1. Regmi A, H Takeshima & L Unnevehr. 2008. [Convergence in global food demand and delivery](#). *Journal of Food Distribution Research* 39(1), 116–122.

Books edited

- Diao X, H Takeshima & X Zhang. 2020. [An Evolving Paradigm of Agricultural Mechanization Development: How Much Can Africa Learn from Asia?](#) Washington DC. International Food Policy Research Institute. ([blog](#)) ([synopsis](#)) ([book launch](#))
- Gyimah-Brempong K, M Johnson & H Takeshima. 2016. [The Nigerian Rice Economy: Policy Options for Transforming Production, Marketing, and Trade](#). Philadelphia. University of Pennsylvania Press. DOI: 10.2499/9780812248951.

Book chapters

23. Belton B, MT Win, X Zhang, M Filipski, I Masias & H Takeshima. 2024. [Agricultural mechanization in Myanmar](#), in *Agriculture and rural development in Myanmar*, B Minten, D Boughton, I Lambrecht & B Belton (eds.), in progress.
22. Kaumbutho P & H Takeshima. 2023. [Mechanization of agricultural production in Kenya: Current state and future outlook](#), in *Food systems transformation in Kenya: Lessons from the past and policy options for the future*, C Breisinger, J Njuki, M Keenan & J Mbuthia (eds.). Washington DC: IFPRI.
21. Takeshima H & Y Mano. 2023. [Chapter 7: Intensification of Rice Farming: The Role of Mechanization and Irrigation](#), in *Rice Green Revolution in Sub-Saharan Africa*, by K Otsuka, Y Mano & K Takahashi (eds.). Natural Resource Management and Policy 56.
20. Diao X, T Reardon, A Kennedy, RS DeFries, J Koo, B Minten, H Takeshima & P Thornton. 2023. [The Future of Small Farms: Innovations for Inclusive Transformation](#), In *Science and Innovations for Food Systems Transformation*. J von Braun, K Afsana, LO Fresco, MHA Hassan (Eds.). pp.191-205, Springer.
19. Yamauchi F & H Takeshima. 2023. [Chapter 24: Solar Power to Transform Food Systems and Rural Livelihoods: Evidence from a Solar-Powered Cold Storage Intervention in Nigeria](#), in *Agricultural Development in Asia and Africa: Essays in Honor of Keijiro Otsuka*, T Sonobe, JP Estudillo & Y Kijima (eds.), Springer.
18. Takeshima H, A Kumar, A Ahmed & PK Joshi. 2021. [Agricultural development and modernization in South Asia](#). In *Agricultural development: New perspectives in a changing world*. K Otsuka & S Fan (Eds.). Chapter 4, p. 111-152. Washington, DC: International Food Policy Research Institute (IFPRI).
17. Takeshima H, X Diao & P Aboagye. 2020. [Policies for competitive and sustainable agricultural production systems: A case study of Ghana's recent mechanization interventions](#). In *Annual trends and outlook report: Sustaining Africa's agrifood system transformation: The role of public policies*, D Resnick, X Diao & G Tadesse (eds.). Washington DC: IFPRI. ([blog](#))

16. **Takeshima H.** 2020. *Agriculture in South Asia: Trends and Prospects*. In [Transforming Agriculture in South Asia: The Role of Value Chains and Contract Farming](#), A Mishra, A Kumar & PK Joshi (eds.), Routledge Studies in Agricultural Economics.
15. **Takeshima H, A Lawal.** 2020. [Evolution of agricultural mechanization in Nigeria](#). In *An Evolving Paradigm of Agricultural Mechanization Development: How Much Can Africa Learn from Asia?* X Diao, H Takeshima & X Zhang (eds.), IFPRI.
14. **Diao X & H Takeshima.** 2020. [Agricultural mechanization in Ghana: Alternative supply models for tractor hiring services](#). In *An Evolving Paradigm of Agricultural Mechanization Development: How Much Can Africa Learn from Asia?* X Diao, H Takeshima & X Zhang (eds.), IFPRI.
13. **Takeshima H & S Justice.** 2020. [Evolution of agricultural mechanization in Nepal](#). In *An Evolving Paradigm of Agricultural Mechanization Development: How Much Can Africa Learn from Asia?* X Diao, H Takeshima & X Zhang (eds.), IFPRI.
12. **Ahmed M & H Takeshima.** 2020. [Evolution of agricultural mechanization in Bangladesh: The case of tractors for land preparation](#). In *An Evolving Paradigm of Agricultural Mechanization Development: How Much Can Africa Learn from Asia?* X Diao, H Takeshima & X Zhang (eds.), IFPRI.
11. **Takeshima H, Y Liu, CV Nguyen & I Masias.** 2020. [Evolution of agricultural mechanization in Viet Nam](#). In *An Evolving Paradigm of Agricultural Mechanization Development: How Much Can Africa Learn from Asia?* X Diao, H Takeshima & X Zhang (eds.), IFPRI.
10. **Abeyratne F & H Takeshima.** 2020. [The evolution of agricultural mechanization in Sri Lanka](#). In *An Evolving Paradigm of Agricultural Mechanization Development: How Much Can Africa Learn from Asia?* X Diao, H Takeshima & X Zhang (eds.), IFPRI.
9. **Bhattarai M, G Singh, H Takeshima & RS Shekhawat.** 2020. [Farm machinery use and the agricultural machinery industries in India: Status, evolution, implications, and lessons learned](#). In *An Evolving Paradigm of Agricultural Mechanization Development: How Much Can Africa Learn from Asia?* X Diao, H Takeshima & X Zhang (eds.), IFPRI.
8. **Diao X, J Silver, H Takeshima & X Zhang.** 2020. [An evolving paradigm for Africa and synthesis of the lessons from Asia](#). In *An Evolving Paradigm of Agricultural Mechanization Development: How Much Can Africa Learn from Asia?* X Diao, H Takeshima & X Zhang (eds.), IFPRI.
7. **Takeshima H & M Bhattarai.** 2019. [Agricultural mechanization in Nepal- patterns, impacts and enabling strategies for promotion](#), in *Agricultural Transformation in Nepal: Trends, Prospects, and Policy Options*, G Thapa, A Kumar & PK Joshi (eds.). Springer, Singapore. https://doi.org/10.1007/978-981-32-9648-0_10.
6. **Takeshima H.** 2019. [Use of Chemical Fertilizers in Nepal- issues and implications](#), in *Agricultural Transformation in Nepal: Trends, Prospects, and Policy Options*, G Thapa, A Kumar & PK Joshi (eds.). Springer, Singapore. https://doi.org/10.1007/978-981-32-9648-0_9.
5. **Gyimah-Brempong K, M Johnson & H Takeshima.** 2016. [Chapter 9: Transforming the Rice Sector](#). DOI: 10.2499/9780812248951_09.
4. **Diao X, M Johnson & H Takeshima.** 2016. [Chapter 8: Economywide effects and implications of alternative policies](#). DOI: 10.2499/9780812248951_08.
3. **Takeshima H.** 2016. [Chapter 4: Policy options for inducing a supply response](#). DOI: 10.2499/9780812248951_04.
2. **Takeshima H & O Bakare.** 2016. [Chapter 3: Production systems – biophysical and economic environment, and constraints](#). DOI: 10.2499/9780812248951_03.
1. **Gyimah-Brempong K, M Johnson & H Takeshima.** 2016. [Chapter 1: Rice in the Nigerian Economy and Agricultural Policies](#), in *The Nigerian Rice Economy: Policy Options for Transforming Production, Marketing, and Trade*, K Gyimah-Brempong, M Johnson & H Takeshima (eds.). Philadelphia. University of Pennsylvania Press. DOI: 10.2499/9780812248951_01.

Other peer-reviewed publications

- Diao X, J Silver & **H Takeshima.** 2017. [Agricultural Mechanization in Africa: Insights from Ghana's Experience](#). IFPRI Issue Brief.

Work in progress

Working Papers / Technical Reports

- Takeshima H**, D Mekonnen & DJ Spielman. (2024). *Global genetic resource policies and international exchanges of plant genetic resources for food and agriculture: Cross-country evidence on the effects of the 2014 Nagoya Protocol*. IFPRI Discussion Paper, in progress.
- Takeshima H**, I Lambrecht, K Akramov, T Ergasheva & P Khakimov. 2024. *Nutrition-sensitive agricultural diversification in Tajikistan: Panel data evidence on linkages between household-level agricultural diversification and dietary diversity*. IFPRI Discussion Paper, in progress.
- Takeshima H**, G Benimana, DJ Spielman, J Warner. 2024. *Agricultural mechanization policy options in Rwanda*. Rwanda SSP Working Paper 09. IFPRI.
- Ragasa C, S Umar, RM Sani, JE Onyibe, L Omoigui, A Fazoranti, C Nwagboso, T Bamiwuye, **H Takeshima** & K Andam. 2024. *Supply and demand-side factors affecting maize and cowpea varietal turnover: Mixed-method evidence from Northern Nigeria*. IFPRI Discussion Paper.
- Kosec K, J Kyle & **H Takeshima**. 2023. [When women hold local office: Women's representation and political engagement amid conflict and climate shocks across Africa](#). IFPRI Discussion Paper 02230. (CGSpace)
- Takeshima H**, N Djanibekov, N Abduvalieva, B Mirkasimov & K Akramov. 2023. [Resilience in farm technical efficiency and enabling factors: Insights from panel farm enterprise surveys in Kazakhstan and Uzbekistan](#). IFPRI Discussion Paper 2205. Washington, DC: IFPRI. (CGSpace).
- Takeshima H**, H Edeh, A Lawal, JE Oniybe, CK Daudu & KS Andam. 2023. [Climate risks and damage abatement effects of pesticides: Evidence based on four-wave panel data in Nigeria](#). IFPRI Discussion Paper 02204. Washington, DC: IFPRI.
- Takeshima H**, F Yamauchi, B Balana, D Adeyanju, E Hyacinth, D Kadjo, LS Liverpool-Tasie, T Abdoulaye, RN Yegbemey, M Ayenan, CI Olanipekun. 2023. [Innovations for inclusive and sustainable growth of domestic food value chains: Fruits and vegetables value chains in Nigeria scoping report](#). Rethinking Food Markets Initiative Note 9. Washington, DC: International Food Policy Research Institute (IFPRI). (CGSpace)
- Myanmar Agriculture Policy Support Activity (MAPSA). 2023b. [Agricultural mechanization services, rice productivity, and farm/plot size: Insights from Myanmar](#). Myanmar SSP Working Paper 35. Washington, DC: IFPRI.
- Myanmar Agriculture Policy Support Activity (MAPSA). 2023a. [Conflict and agricultural productivity: Evidence from Myanmar](#). Myanmar SSP Working Paper 30. Washington, DC: IFPRI.
- Takeshima H**, S Saroj & A Kumar. 2023. [Effects of weather and food market risks on household agriculture-nutrition linkage: Micro-level insights from India](#). IFPRI DP 02167.
- Takeshima H**, K Raghunathan & K Kosec. 2022. [Climate change and women's voice and agency beyond the household: Insights from India](#). IFPRI DP 02148.
- Takeshima H**, T Abdoulaye, KS Andam, HO Edeh, A Fazoranti, B Haile, P. Lava Kumar, C Nwagboso, C Ragasa, D Spielman, T Wossen. 2022. [Seed certification and maize, rice and cowpea productivity in Nigeria: An insight based on nationally representative farm household data and seed company location data](#). IFPRI DP 02147. (blog)
- Takeshima H**, H Edeh & K Andam. 2022. [Roles of public expenditures and public investments on the demand and productivity of agricultural inputs/services: Some insights from Nigeria](#). IFPRI DP 02114.
- Takeshima H** & Vos R. 2022. *Agricultural mechanisation and child labour in developing countries. Background study*. Rome, FAO. <https://doi.org/10.4060/cb8550en>.
- Vos R & **H Takeshima**. 2021. [Agricultural mechanisation and child labour in developing countries](#). IFPRI DP 02080.
- Smart J, S Benin, P Marennya, **H Takeshima** & F Smart. 2021. [Effect of Public Investments on Maize and Cereal Productivity](#). IFPRI DP 02076.
- Takeshima H** & X Diao. 2021. [Agricultural mechanization and gendered labor activities across sectors: Micro-evidence from multi-country farm household data](#). IFPRI DP 02066.
- Takeshima H**. 2021. [Public-sector maize research locations and spatial heterogeneity in maize productivity: Insights from four African countries on the roles of agroclimatic similarity](#). IFPRI DP 02064.
- Takeshima H**, J Smart & X Diao. 2021. [Public expenditure's role in reducing poverty and improving food and nutrition security: Preliminary cross-country insights based on SPEED data](#). IFPRI DP 02051.
- Takeshima H**, B Balana, J Smart, HO Edeh, MA Oyeyemi & KS Andam. 2021. [Subnational public expenditures, short-term household-level welfare, and economic resilience: Evidence from Nigeria](#). NSSP Working Paper 68. Washington, DC: IFPRI.

- Takeshima H**, F Yamauchi, D Bawa, SO Kamaldeen, H Edeh & MA Hernandez. 2021. [Solar-powered cold-storages and sustainable food system transformation: Evidence from horticulture markets interventions in northeast Nigeria](#). IFPRI DP 02047.
- Takeshima H**, Ian Masias, MT Win, PP Zone. 2021. [Effects of COVID-19-restrictions on mechanization-service providers and mechanization equipment retailers: Insights from phone surveys in Myanmar](#). IFPRI DP 02021.
- Diao X, T Reardon, A Kennedy, RS DeFries, J Koo, B Minten, **H Takeshima** & P Thornton. 2021. [The Future of Small Farms: Innovations for Inclusive Transformation](#). Food Systems Summit Brief Prepared by Research Partners of the Scientific Group for the Food Systems Summit.
- Takeshima H**, B Balana, J Smart, HO Edeh, MA Oyeyemi & KS Andam. 2020. [Effects of public expenditures on agriculture at subnational levels on households' welfare and economic resilience in Nigeria](#). IFPRI DP 01955.
- Takeshima H**, J Smart, HO Edeh, MA Oyeyemi, B Balana & KS Andam. 2020. [Public Expenditures on Agriculture at Subnational-Level and Household-Level Agricultural Outcomes in Nigeria](#). IFPRI DP 01952.
- Takeshima H** & A Kumar. 2020. [Changing Returns-to-Scale and Deepening of Factor-Endowments-Induced Specialization: Exploring Broader Linkage between Agricultural Mechanization and Agricultural Transformation in Nepal](#). IFPRI DP 01934.
- Takeshima H**, M Ajmani, D Roy, A Fadhillah & Y Liu. 2020. [Agrifood market participation, household economies of specialization and diversification: Evidence from Vietnam](#). IFPRI DP 01922.
- Takeshima H**, K Akramov, A Park, J Ilyasov & T Ergasheva. 2019. [Agriculture-nutrition linkages, cooking-time, intra-household equality among women and children: Evidence from Tajikistan](#). IFPRI Discussion Paper 01882.
- Takeshima H** & Y Liu. 2019. [Geography of smallholders' tractor adoptions and R&D-Induced land productivity: Evidence from household survey data in Ghana](#). IFPRI Discussion Paper 01871. (blog: <http://gssp.ifpri.info/2019/09/27/5918/>)
- Takeshima H** & PK Joshi. 2019. [Overview of the agricultural modernization in Southeast Asia](#). IFPRI Discussion Paper 01819.
- Takeshima H** & PK Joshi. 2019. [Protected agriculture, precision agriculture, and vertical farming: Brief reviews of issues in the literature focusing on the developing region in Asia](#). IFPRI Discussion Paper 01814.
- Kanoktanaporn, S., Diao, X., Matsushita, S., Aoyagi, Y., Briones, M. R., Jiang, J-A., **Takeshima, H.**, Saeed, M., Hossain, S. T., Watanabe, K. and Parth., S. 2019. [APO Agricultural Transformation Framework](#). Asian Productivity Organization (APO), Tokyo, Japan.
- Kumar A, **H Takeshima**, N Adhikari, G Thapa, PK Joshi & M Karkee. 2018. [Adoption and Diffusion of Improved Technologies and Production Practices in Agriculture: Insights from a Donor-led Intervention in Nepal](#). IFPRI Discussion Paper 01781.
- Takeshima H**, K Akramov, A Park, J Ilyasov, Y Liu & T Ergasheva. 2018. [Agriculture-Nutrition Linkages in Tajikistan: Evidence from Household Survey Data](#). IFPRI Discussion Paper 01770.
- Takeshima H**, M Amare & G Mavrotas. 2018. [The role of agricultural productivity in non-farm activities in Nigeria: Effects on sector orientation and factor intensity](#). IFPRI Discussion Paper 01761.
- Hatzenbuehler P, **H Takeshima**, H Edeh & A Lawal. 2018. [Cost and policy determinants of features of tractor markets in Nigeria](#). IFPRI NSSP Working Paper 55.
- Takeshima H**, P Hatzenbuehler, H Edeh. 2018. [Effects of agricultural mechanization on economies of scope in crop production in Nigeria](#). IFPRI NSSP Working Paper 53.
- Takeshima H**, A Lawal. 2018. [Overview of the Evolution of Agricultural Mechanization in Nigeria](#). IFPRI Discussion Paper 01750.
- Diao X, J Agandin, P Fang, SE Justice, D Kufoalor & **H Takeshima**. 2018. [Agricultural Mechanization in Ghana: Insights from a Recent Field Study](#). IFPRI Discussion Paper 01729.
- Takeshima H**, Y Liu, CV Nguyen & I Masias. 2018. [Evolution of agricultural mechanization in Vietnam: Insights from a literature review and multiple rounds of a farm household survey](#). IFPRI DP 01724.
- Takeshima H** & Y Liu. 2018. [The Role of Plant-Breeding R&D in Tractor Adoption among Smallholders in Asia: Insights from Nepal Terai](#). IFPRI Discussion Paper 01719.
- Bhattarai M, G Singh, **H Takeshima** & S Shekhawat. 2018. [Farm machinery uses and agricultural industries in India: status, evolution, implications, and lessons learned](#). IFPRI Discussion Paper 01715.

- Kumar A, S Saroj, **H Takeshima** & PK Joshi. 2018. [Does cooperative membership improve household welfare? Evidence from a panel data analysis of smallholder dairy farmers in India.](#) IFPRI DP 01703.
- Takeshima H**. 2017. [The roles of agroclimatic similarity and returns to scale in demand for mechanization: Insights from Northern Nigeria.](#) IFPRI Discussion Paper 01692 (Nils Westermarck Award paper at the 2018 ICAE Conference, Vancouver, Canada).
- Takeshima H** & H Edeh. 2017. [Constraints for small-scale private irrigation systems in the North Central zone of Nigeria: Insights from a typology analysis and a case study.](#) IFPRI NSSP Working Paper 47.
- Takeshima H**, J Agandin & S Kolavalli. 2017. [Growth of Modern Service Providers for the African Agricultural Sector: An Insight from a Public Irrigation Scheme in Ghana.](#) IFPRI Discussion Paper 01678.
- Bhattarai M, PK Joshi, RS Shekhawat & **H Takeshima**. 2017. [The Evolution of Tractorization in India's Low-Wage Economy Key Patterns and Implications.](#) IFPRI Discussion Paper 01675.
- Takeshima H**, N Houssou, X Diao. 2017. [Effects of tractor ownership on agricultural returns-to-scale in household maize production: Evidence from Ghana.](#) IFPRI Discussion Paper 01671.
- Takeshima H** & A Nasir. 2017. [The role of the locations of public sector varietal development activities on agricultural productivity: Evidence from northern Nigeria.](#) IFPRI NSSP Working Paper 42.
- Takeshima H**. 2017. [Overview of the Evolution of Agricultural Mechanization in Nepal, with a Particular Focus on Tractors and Combine Harvesters.](#) IFPRI Discussion Paper 01662.
- Takeshima H**, RB Shrestha, BD Kaphle, M Karkee, S Pokhrel, A Kumar. 2016. [Effects of agricultural mechanization on smallholders and their self-selection into farming: An insight from the Nepal Terai.](#) IFPRI Discussion Paper 01583.
- Takeshima H**, S Shivakoti, B Bhattarai, M Karkee, S Pokhrel & A Kumar. 2016. [Farm Size and Effects of Chemical Fertilizer Price on Farm Households: Insights from Nepal Terai.](#) IFPRI Discussion Paper 01578.
- Takeshima H**, A Adeoti & O Popoola. 2016. [The impact on farm household welfare of large irrigation dams and its distributions across hydrological basins: Insights from northern Nigeria.](#) IFPRI NSSP Working Paper 35.
- Takeshima H** & A Maji. 2016. [Varietal development and the effectiveness of seed sector policies: The case of rice in Nigeria.](#) IFPRI NSSP Working Paper 34.
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Presentations

- “Climate shocks and fertilizer responses: Evidence from nationally representative rice production data in Bangladesh”. AAEA Annual Meeting Selected Paper Presentation. New Orleans, USA, 2024.07
- High-Level Dialogue on Gender and Climate Change*. Delhi, India, 2023.10

- Business Models and Multi-stakeholder Engagement*. Co-chair of the sub-session at the [Global Conference on Sustainable Agricultural Mechanization](#) organized by the FAO ([Video archive](#)) Rome, Italy, 2023.09
- (Virtual) “[Seed certification and maize, rice and cowpea productivity in Nigeria: An insight based on nationally representative farm household data and seed company location data](#)”. Seed Equal: Reflect, Assess, and Plan. Washington DC / Addis Ababa, 2022.03
- (Virtual) *Business Models and Economics perspectives of Agricultural mechanization development*” Presentation at the Global Conference on Sustainable Plant Protection, organized by FAO. Washington DC / Rome, Italy, 2022.11
- (Virtual) “[The 8th Tokyo International Conference on African Development \(TICAD8\) Side Event: How Japan’s know-how can help address Africa’s food and nutrition challenges: Interventions and impacts](#)” Washington DC / Japan, 2022.09
- (Virtual) “*Challenges for mechanization service providers under COVID and COUP in Myanmar: Insights from phone surveys*” at *Agriculture and Food System Transformation: Migration and Mechanization in Myanmar* (the second module of the Feed the Future MAPSA’s eight-module seminar series) Washington DC / Myanmar, 2022.02
- (Virtual) “*Challenges for mechanization service providers under COVID and COUP in Myanmar: Insights from phone surveys*” at LIFT (The Livelihoods and Food Security Fund)’s Online Learning Workshop on Agricultural Mechanization Washington DC / Myanmar, 2021.11
- (Virtual) “*Irrigation, Nutrition, Gender and COVID-19 in a Small Central Asian Country: Insights from Tajikistan*” Presentation at the Organized Symposia “*Understanding Farmers’ Decisions Towards Sustainable Agriculture in Irrigated Areas of Central Asia*”, at the 31st Triennial International Conference of Agricultural Economists (ICAE), Delhi, India. Washington DC / Delhi India, 2021.8
- (Virtual) “*Agricultural mechanization in Africa and Transferability of Asian Experience: Insights from recent selected research*” (アフリカ農業機械化の課題とアジア機械化経験の応用可能性－農業経済・開発学の視点からの学術的考察－) Presentation at a joint seminar hosted by JICA-JIRCAS-CGIAR. (In Japanese) Washington DC / Tokyo, Japan – 2020.11
- (Virtual) “*Policies for Competitive and Sustainable Agricultural Production Systems (A Case Study of Ghana’s Recent Mechanization Interventions)*” Presentation at a 2020 Regional Strategic Analysis and Knowledge Support System (ReSAKSS) Annual Conference “*Sustaining Africa’s Agrifood System Transformation: The Role of Public Policies*”. Washington DC, 2020.11
- (Virtual) “*An Evolving Paradigm of Agricultural Mechanization Development: How Much Can Africa Learn from Asia?*” Presentation at Organized Symposium, “*Agricultural mechanization in Africa: Myths, realities and an emerging research agenda*”, 2020 AAEA Annual Meeting Washington DC, USA – 2020.8
- (Virtual) “*Agriculture-nutrition linkages in Tajikistan: Selected insights from recent IFPRI studies*” Virtual Seminars on Applied Economics and Policy Analysis in Central Asia, jointly organized by Westminster International University in Tashkent (WIUT), International Food Policy Research Institute (IFPRI) and Leibniz Institute of Agricultural Development in Transition Economies (IAMO). Washington DC / Tashkent, Uzbekistan – 2020.7
- (Virtual) “[Public Expenditure on Agriculture and Household-level Outcomes in Nigeria: Insights from states and LGA-level expenditures and LSMS-ISA panel household data](#)” Virtual Seminar hosted by USAID Feed-the-Future (FTF) Nigeria Agricultural Policy Project implemented by IFPRI. Washington DC / Abuja, Nigeria – 2020.5
- “*Agricultural transformation, market integration, and smallholders in Southeast Asia: Regional overview and some micro-evidence from* Bangkok, Thailand – 2019.11

- Vietnam*” presented at the Regional Workshop cum Roundtable Discussion on ASEAN Economic Integration
 “*Framework for Promoting Transformation for Sustainable Productivity and Food Security*” and “*Smart Technologies in Agriculture Transformation: Basic Principles*” presented at the Workshop on the Formulation and Study of Spatial Development, Climate Change, and the Environment for Agricultural Transformation
 Manila, Philippines – 2019.11
- “*Recent research findings on seed varieties, irrigation, and agricultural mechanization in Nigeria*” presented at various locations in Nigeria
 Cross River / Ebonyi / Delta / Kebbi, Nigeria – 2019.6
- “*Agriculture-nutrition linkage in Tajikistan: Delving deeper into the nexus*” presented at the Fourth Annual International Conference on Agriculture, Food Security and Nutrition in Eurasia, Featuring IFPRI’s 2018 Global Food Policy Report (Moscow, Russia) / International Conference on Agriculture, Food Security and Nutrition in Central Asia - Featuring IFPRI’s 2019 Global Food Policy Report, Westminster International University, Tashkent, Uzbekistan – 2019.5
- “*Recent research findings on seed varieties, irrigation, and agricultural mechanization in Nigeria*” presented at various locations in Nigeria
 Abuja / Kaduna / Makurdi / Minna, Nigeria – 2019.1
- “*Overview of agricultural modernization in ASEAN region*” presented at the Policy Forum on Agricultural Transformation and Market Integration in the ASEAN Region: Responding to Food Security and Inclusiveness Concerns
 Phnom Penh, Cambodia – 2018.12
- (Webinar) “*Agricultural mechanization in Africa: Lessons learned from South-South knowledge exchange*” Webinar Series by CGIAR Research Program on Policies, Institutions, and Markets (PIM).
 Washington, DC – 2018.10
- “*Agricultural mechanization growth in Asian developing countries: Patterns and implications*” presented at the Expert Meeting for the Development of an Agricultural Transformation Framework for APO Member Countries, Asian Productivity Organization.
 Tokyo, Japan – 2018.10
- “*Agriculture-nutrition linkages in Tajikistan: Evidence from household survey data*” presented at the research seminar, Tajik Academy of Agricultural Sciences (TAAS)
 Dushanbe, Tajikistan – 2018.9
- “*Effects of mechanization on economies of scope in agriculture: Evidence from LSMS-ISA data*” and “*The role of the locations of public sector varietal development activities on agricultural productivity: Evidence from Northern Nigeria*” presented at the Second Conference of the Feed the Future Nigeria Agricultural Policy Project, as well as research seminar held at the National Agricultural Extension and Research Liaison Service, Ahmadu-Bello University
 Abuja, Zaria, Nigeria – 2018.8
- IAAE triennial meeting presentation “*The Roles of Agroclimatic Similarity and Returns to Scale in the Demand for Mechanization: Insights from Northern Nigeria*” (Nils Westermarck Award)
 Vancouver, Canada – 2018.7/8
- “*Agriculture-nutrition linkage in Nigeria*” presented at the workshop “*Transforming Agriculture and Food Systems for Better Nutrition and Health: Global and Emerging Perspective*”
 Tokyo, Japan – 2018.6
- “*Agriculture-nutrition linkage in Tajikistan: Evidence from Household Survey Data*” presented at the Third Annual International Conference on Agriculture, Food Security and Nutrition in Eurasia, Featuring IFPRI’s 2018 Global Food Policy Report
 Moscow, Russia – 2018.5
- “*South-South Knowledge Sharing on Agricultural Mechanization*” International Conference Organized by IFPRI, CIMMYT, and the Ethiopian Agricultural Mechanization Forum
 Addis Ababa, Ethiopia – 2017.10/11
- Annual Eurasian Food Security Conference
 Dushanbe, Tajikistan – 2017.10
- ‘*Machine Reforms*’ for Sustainable Intensification of Agriculture in South Asia: A Regional Dialogue
 Delhi, India – 2017.7

Feed the Future Nigeria implementing partners' policy dialogue series: First Policy Dialogue on "Bringing Balanced Fertilizers to the Nigerian Market: Policy and investment implications on soils and crop-specific fertilizer blend-based technologies"	Abuja, Nigeria – 2017.4
Keynote address at the workshop "Transforming West African agriculture through the development of mechanization: what public policies?" (organized by The Syngenta Foundation for Sustainable Agriculture (SFSa) and the Foundation for World Agriculture and Rurality (FARM))	Dakar, Senegal – 2017.2
Policy Dialogue organized by IFPRI Ghana Strategy Support Program	Accra, Ghana – 2016.10
Conference on "Promoting Agricultural Policy in Nigeria: Challenges and Opportunities"	Abuja, Nigeria – 2016.9
Symposium "Mechanization & Postharvest Opportunities for Smallholders in Sustainable Agriculture"	Champaign, USA – 2016.7
Conference on "Sustainable Agricultural Growth in Nepal: Challenges, Opportunities and Options"	Kathmandu, Nepal – 2016.5
Workshop on Agricultural Mechanization in South Asia: Trends, Patterns and Implications for Agricultural Development in Nepal	Kathmandu, Nepal – 2016.4
IAAE triennial meeting Selected Oral Presentation	Milan, Italy – 2015.8
IFPRI/National School of Development Joint Conferences on Mechanization and Agricultural Transformation in Asia and Africa: Sharing Development Experiences	Beijing, China – 2014.6
AAEA annual meeting Selected Paper	Washington, USA – 2013.8
ASSA annual meeting	San Diego, USA – 2013.1
International Consortium of Applied Bioeconomy Research Conference	Ravello, Italy – 2012.6
AAEA annual meeting Selected Poster	Pittsburgh, USA – 2011.7
AAEA annual meeting Selected Poster	Denver, USA – 2010.7
AAEA annual meeting Selected Poster	Milwaukee, USA – 2009.7
AAEA annual meeting Selected Poster	Orlando, USA – 2008.7
AAEA annual meeting Selected Poster	Orlando, USA – 2008.7
AAEA annual meeting Selected Poster	Portland, USA – 2007.7
USDA NC-1034 Conference	University of California, Berkeley – 2007.3
Joint Annual Meeting of Association For The Study of Food And Society and Agriculture, Food and Human Values Society	Hyde Park, New York – 2004.6

Blogs

- [Optimizing seed certification can boost sustainable agriculture: The case of Nigeria](#) (1/17/24)
- [Tokyo Nutrition for Growth Summit: Leveraging Japanese knowledge to address global health and nutrition challenges](#) (01/14/22)
- [Gender and mechanization: exploring differential effects on rural men and women](#) (12/16/21)
- [In search of effective support for agricultural mechanization in Africa](#) (10/30/20)
- [TICAD7 Side Event: How Japan's know-how can help address Africa's food and nutrition challenges](#) (09/27/19)
- [Cultivating growth in Nigerian agriculture with small-scale irrigation](#) (01/03/18)
- [What's driving the growth of agricultural mechanization in Africa](#) (12/20/17)

Other activities

Organized an International Conference " South-South Knowledge Sharing on Agricultural Mechanization "	Addis Ababa, Ethiopia – 2017.11
Organized Nigeria Strategy Support Program Workshop on irrigation and mechanization in Nigeria	Kano, Nigeria – 2011.6
Organized Nigeria Strategy Support Program Concept Paper Workshop	Abuja, Nigeria – 2011.2
Organized Nigeria Strategy Support Program Seed Sector Stakeholder Workshop	Abuja, Nigeria – 2009.8

Foreign Experience

Post Doctoral Fellow based in Nigeria 2009.3 – 2011.12

- Research
- Outreach / capacity building activities
 - Policy communication including rapid assessment of fertilizer subsidy policies for the Nigerian Minister of Agriculture
 - Joint production of background papers and policy briefs for NSSP with Nigerian researchers and government officials
 - In-country research seminar, workshops, policy dialogue, training on econometrics and softwares for government officials and Nigerian researchers
 - Facilitating study tour in India for three Nigerian government officials (National Agricultural Seeds Council, National Food Reserve Agency)
- Program management
 - Serving as acting program leader of Nigeria office (2011.8 – 2012.8)
 - Overseeing of IFPRI Nigeria office
 - Preparation of draft workplan and proposals for USAID-Nigeria and DfID-Nigeria
 - Support for donors in various short-term requests on food security policy issues in Nigeria

Research Assistant in Uganda 2006.6 – 2006.8
– Risk Mitigation and Evolving Value Chains in East African Agriculture (a project under USAID, IFPRI):
Reviewed the secondary data, past studies, interviewed experts in both private and public trading sectors for coffee, maize and cassava in Uganda

Teaching experience

Graduate Teaching Assistant 2008.8–2008.12
Taught lab session for ACE261 Applied Statistical Method University of Illinois, Urbana-Champaign

Graduate Teaching Assistant 2008.8–2008.12
Grader for ACE254 Economic Systems in Africa University of Illinois, Urbana-Champaign

Awards

- [Nils Westermark Prize](#): Triennial meeting of the International Association of Agricultural Economists (IAAE), Vancouver, Canada, 2018

Reviewer

Agricultural Economics (12), Agricultural Research (1), Agricultural Systems (4), American Journal of Agricultural Economics (2), Applied Economic Perspectives and Policy (2), Applied Economics (1), Canadian Journal of Agricultural Economics (1), China Agricultural Economic Review (1), China Economic Review (1), Cogent Food & Agriculture (1), Computers and Electronics in Agriculture (1), Current Developments in Nutrition (1), Development in Practice (1), Economic Analysis and Policy (1), Engineering Reports (1), Food Policy (9), Global Food Security (1), Heliyon (2), Journal of Agricultural Economics (3), Journal of Developing Areas (1), Journal of Development Studies (1), Journal of Engineering Research (1), Journal of International Development (2), Land Degradation and Development (1), Land Use Policy (1), Oxford Development Studies (1), Review of Development Economics (2), Technological Forecasting and Social Change (1), Water Resources Management (1), World Development (2)

Language

Japanese, English

References

Available upon request.