

Supplementary Materials: The Vulnerability of Rice Value Chains in Sub-Saharan Africa: A Review

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Literature Reviewed

1. Adjao, R.T.; Staatz, J.M. Asian rice economy changes and implications for sub-Saharan Africa. *Glob. Food Secur.* **2014**, doi: 10.1016/j.gfs.2014.11.002 (ref. [47]).
2. Ajetomobi, J.; Abiodun, A.; Hassan, R. Economic impact of climate change on irrigated rice agriculture in Nigeria. In Proceedings of the Joint 3rd African Association of Agricultural Economists (AAAE) and 48th Agricultural Economists Association of South Africa (AEASA) Conference; Cape Town, South Africa, 19–23 September 2010 (ref. [43]).
3. Ammani, A.A. Impact of market-determined exchange rates on rice production and import in Nigeria. *Int. J. Food Agric. Econ.* **2013**, *1*, 85–98 (ref. [49]).
4. Aniekwe, C. Agricultural trade liberalization and small-holder development: West African rice farmers in perspective. In Proceedings of the Second Africa Rice Congress, Bamako, Mali, 22–26 March 2010 (ref. [50]).
5. Animashaun, J.O.O.; Titilayo, V.E.; Muhammad-Lawal, A.; Amolegbe, K.B. Between foreign direct investment (FDI) and outsourcing: Which policy strategy will enhance the competitiveness of the Nigerian rice sector? *Int. J. Food Agric. Econ.* **2015**, *3*, 91–105 (ref. [65]).
6. Awoyemi, T.T. Explaining rice price shocks in Nigeria: Implications for policy intervention. *Rural Econ. Dev.* **2004**, *18*, 46–52 (ref. [76]).
7. Ayinde, O.E.; Ojehomon, V.E.T.; Daramola, F.S.; Falaki, A.A. Evaluation of the effects of climate change on rice production in Niger State, Nigeria. *Ethiop. J. Environ. Stud. Manag.* **2013**, *6*, 763–773 (ref. [42]).
8. Badolo, F.; Traore, F. *Impact of Rising World Rice Prices on Poverty and Inequality in Burkina Faso*; E 2012.22; Cerdi Etudes & Documents: Clermont-Ferrand, France, 2012; pp. 1–39 (ref. [74]).
9. Becker, L.; Yoboue, N.G. Rice producer-processor networks in Cote d'Ivoire. *Am. Geogr. Soc.* **2009**, *99*, 164–185 (ref. [60]).
10. Calzadilla, A.; Zhu, T.; Rehdanz, K.; Tol, R.S.J.; Ringler, C. Economywide impacts of climate change on agriculture in Sub-Saharan Africa. *Ecol. Econ.* **2013**, *93*, 150–165 (ref. [72]).
11. Calzadilla, A.; Zhu, T.; Rehdanz, K.; Tol, R.S.J.; Ringler, C. Climate change and agriculture: Impacts and adaptation options in South Africa. *Water Resour. Econ.* **2014**, *5*, 24–48 (ref. [39]).
12. Coady, D.; Dorosh, P.; Minten, B. Evaluating alternative policy responses to higher world food prices: The case of increasing rice prices in Madagascar. *Am. J. Agric. Econ.* **2009**, *91*, 711–722 (ref. [67]).
13. Colen, L.; Demont, M.; Swinnen, J. Smallholder participation in value chains: The case of domestic rice in Senegal. In *Rebuilding West Africa's Food Potential*; IFAD: Rome, Italy, 2013; pp. 391–415 (ref. [77]).
14. Demont, M. Reversing urban bias in African rice markets: A review of 19 national rice development strategies. *Glob. Food Secur.* **2013**, *2*, 172–181 (ref. [31]).
15. Demont, M.; Ndour, M. Upgrading rice value chains: Experimental evidence from 11 African markets. *Glob. Food Secur.* **2014**, doi: 10.1016/j.gfs.2014.10.001 (ref. [1]).
16. Demont, M.; Rizzotto, A.C. Policy Sequencing and the Development of Rice Value Chains in Senegal. *Dev. Policy Rev.* **2012**, *30*, 451–472 (ref. [57]).
17. Demont, M.; Rutsaert, P.; Ndour, M.; Verbeke, W. Reversing urban bias in African rice markets: Evidence from Senegal. *World Dev.* **2013**, *45*, 63–74 (ref. [58]).
18. Demont, M.; Zossou, E.; Rutsaert, P.; Ndour, M.; Van Mele, P.; Verbeke, W. Consumer valuation of improved rice parboiling technologies in Benin. *Food Qual. Preference* **2012**, *23*, 63–70 (ref. [59]).
19. Fiamohe, R.; Nakelse, T.; Diagne, A.; Seck, P.A. Assessing the effect of consumer purchasing criteria for types of rice in Togo: A choice modeling approach. *Agribusiness* **2014**, doi:10.1002/agr.21406 (ref. [55]).
20. Garmann, S. Does globalization influence protectionism? Empirical evidence from agricultural support. *Food Policy* **2014**, *49*, 281–293 (ref. [6]).
21. Harvey, C.A.; Rakotobe, Z.L.; Rao, N.S.; Dave, R.; Razafimahatratra, H.; Rabarijohn, R.H.; Rajaofara, H.; Mackinnon, J.L. Extreme vulnerability of smallholder farmers to agricultural risks and climate change in Madagascar. *Philos. Trans. R. Soc. Lond. B. Biol. Sci.* **2014**, doi: 10.1098/rstb.2013.0089 (ref. [40]).

22. Johnson, M.; Takeshima, H.; Gyimah-brempong, K.; Kuku-shittu, O.; Diao, W.X.; Dorosh, P.; Malek, M.; Koo, J.; Pradesha, A.; Ajibola, A. *Assessing the Potential and Policy Alternatives for Achieving Rice Competitiveness and Growth in Nigeria*; International Food Policy Research Institute: Washington, DC, USA, 2015 (ref. [54]).
23. Katic, P.G.; Namara, R.E.; Hope, L.; Owusu, E.; Fujii, H. Rice and irrigation in West Africa: Achieving food security with agricultural water management strategies. *Water Resour. Econ.* **2013**, *1*, 75–92 (ref. [62]).
24. Kima, A.S.; Traore, S.; Wang, Y.M.; Chung, W.G. Multi-genes programing and local scale regression for analyzing rice yield response to climate factors using observed and downscaled data in Sahel. *Agric. Water Manag.* **2014**, *146*, 149–162 (ref. [35]).
25. Knox, J.; Hess, T.; Daccache, A.; Wheeler, T. Climate change impacts on crop productivity in Africa and South Asia. *Environ. Res. Lett.* **2012**, doi:10.1088/1748–9326/7/3/034032 (ref. [33]).
26. Laroche, D.C.; Postolle, A. Food sovereignty and agricultural trade policy commitments: How much leeway do West African nations have? *Food Policy* **2013**, *38*, 115–125 (ref. [4]).
27. Liersch, S.; Cools, J.; Kone, B.; Koch, H.; Diallo, M.; Reinhardt, J.; Fournet, S.; Aich, V.; Hattermann, F.F. Vulnerability of rice production in the Inner Niger Delta to water resources management under climate variability and change. *Environ. Sci. Policy* **2013**, *34*, 18–33 (ref. [34]).
28. Liu, J.; Fritz, S.; van Wesenbeeck, C.F.A.; Fuchs, M.; You, L.; Obersteiner, M.; Yang, H. A spatially explicit assessment of current and future hotspots of hunger in Sub-Saharan Africa in the context of global change. *Glob. Planet. Chang.* **2008**, *64*, 222–235 (ref. [44]).
29. Lobell, D.B.; Burke, M.B.; Tebaldi, C.; Mastrandrea, M.D.; Falcon, W.P.; Naylor, R.L. Prioritizing climate change adaptation needs for food security in 2030. *Science* **2008**, *319*, 607–610 (ref. [45]).
30. Maduabuchi, M.; Arene, C.J. Trade liberalization, exchange rate changes, and the competitiveness of carbohydrate staple markets in Nigeria. *Int. J. Agric. Manag. Dev.* **2012**, *2*, 121–136 (ref. [71]).
31. Mbétid-Bessane, E. Adoption et intensification du Nouveau Riz pour l’Afrique en Centrafrique. *Tropicultura* **2014**, *32*, 16–21 (ref. [75]).
32. Del Villar, P.M.; Lançon, F. West African rice development: Beyond protectionism versus liberalization? *Glob. Food Secur.* **2015**, *5*, 56–61 (ref. [5]).
33. Minot, N. Food price volatility in sub-Saharan Africa: Has it really increased? *Food Policy* **2014**, *45*, 45–56 (ref. [63]).
34. Minten, B.; Randrianarison, L.; Swinnen, J.F.M. Global retail chains and poor farmers: evidence from Madagascar. *World Dev.* **2009**, *37*, 1728–1741 (ref. [64]).
35. Moseley, W.G.; Carney, J.; Becker, L. Neoliberal policy, rural livelihoods, and urban food security in West Africa: a comparative study of The Gambia, Cote d’Ivoire, and Mali. *Proc. Natl. Acad. Sci. USA* **2010**, *107*, 5774–5779 (ref. [7]).
36. Mumuni, E.; Oladele, O.I. Farmers’ assessment of donor support for rain-fed Lowland rice production in Ashanti and Northern Regions in Ghana. *Life Sci. J.* **2012**, *9*, 377–381 (ref. [52]).
37. Nicita, A.; Olarreaga, M.; Porto, G. Pro-poor trade policy in Sub-Saharan Africa. *J. Int. Econ.* **2014**, *92*, 252–265 (ref. [68]).
38. Nwalieji, H.U.; Uzuegbunam, C.O. Effect of climate change on rice production in Anambra State, Nigeria. *J. Agric. Ext.* **2012**, *16*, 81–91 (ref. [38]).
39. Nyantakyi-Frimpong, H.; Bezner-Kerr, R. The relative importance of climate change in the context of multiple stressors in semi-arid Ghana. *Glob. Environ. Chang.* **2015**, *32*, 40–56 (ref. [46]).
40. Obi-egbedi, O.; Okoruwa, V.O.; Aminu, A.; Yusuf, S. Effect of rice trade policy on household welfare in Nigeria. *Eur. J. Bus. Manag.* **2012**, *4*, 160–171 (ref. [69]).
41. Obi-egbedi, O.; Okoruwa, V.O.; Yusuf, S.A.; Kemisola, O. Rice trade protectionism versus liberalization in Nigeria: A CGE analysis of economic and welfare effects. In Proceedings of the 4th International Conference of the African Association of Agricultural Economists, Hammamet, Tunisia, 22–25 September 2013. (ref. [66]).
42. Ochieng, J.; Kirimi, L.; Mathenge, M. Effects of climate variability and change on agricultural production: The case of small scale farmers in Kenya. *J. Life Sci.* **2016**, doi:10.1016/j.njas.2016.03.005 (ref. [41]).
43. Ogundere, F. Trade liberalization and import demand for rice in Nigeria: A dynamic modelling. *J. Econ. Rural Dev.* **2007**, *16*, 34–45 (ref. [70]).
44. Rashid, S.; Minot, N.; Lemma, S.; Behute, B. Are staple food markets in Africa efficient? Spatial Price Analyses and Beyond. In Proceedings of the COMESA Policy Seminar “Food Price Variability: Causes, Consequences, and Policy Options”; Maputo, Mozambique, 25–26 January 2010 (ref. [61]).

45. Rodenburg, J.; Zwart, S.J.; Kiepe, P.; Narteh, L.T.; Dogbe, W.; Wopereis, M.C.S. Sustainable rice production in African inland valleys: Seizing regional potentials through local approaches. *Agric. Syst.* **2014**, *123*, 1–11 (ref. [73]).
46. Roudier, P.; Sultan, B.; Quirion, P.; Berg, A. The impact of future climate change on West African crop yields: What does the recent literature say? *Glob. Environ. Chang.* **2011**, doi:10.1016/j.gloenvcha.2011.04.007 (ref. [10]).
47. Rowhani, P.; Lobell, D.B.; Linderman, M.; Ramankutty, N. Climate variability and crop production in Tanzania. *Agric. For. Meteorol.* **2011**, *151*, 449–460 (ref. [36]).
48. Saito, K.; Dieng, I.; Toure, A.A.; Somado, E.A.; Wopereis, M.C.S. Rice yield growth analysis for 24 African countries over 1960–2012. *Glob. Food Secur.* **2014**, *2008*, 1–8 (ref. [30]).
49. Seck, P.A.; Tollens, E.; Wopereis, M.C.S.; Diagne, A.; Bamba, I. Rising trends and variability of rice prices: Threats and opportunities for sub-Saharan Africa. *Food Policy* **2010**, *35*, 403–411 (ref. [48]).
50. Tihamiyu, S.A.; Usman, A.; Ugalahi, U.B. Adoption of on-farm and post-harvest rice quality enhancing technologies in Nigeria. *Tropicultura* **2014**, *32*, 67–72 (ref. [53]).
51. Tomlins, K.I.; Manful, J.T.; Larwer, P.; Hammond, L. Urban consumer preferences and sensory evaluation of locally produced and imported rice in West Africa. *Food Qual. Preference* **2005**, *16*, 79–89 (ref. [56]).
52. Totin, E.; van Mierlo, B.; Saïdou, A.; Mongbo, R.; Agbossou, E.; Stroosnijder, L.; Leeuwis, C. Barriers and opportunities for innovation in rice production in the inland valleys of Benin. *J. Life Sci.* **2012**, doi:10.1016/j.njas.2012.06.001 (ref. [51]).
53. Van Oort, P.A.J.; Saito, K.; Tanaka, A.; Amovin-Assagba, E.; Van Bussel, L.G.J.; van Wart, J.; De Groot, H.; van Ittersum, M.K.; Cassman, K.G.; Wopereis, M.C.S. Assessment of rice self-sufficiency in 2025 in eight African countries. *Glob. Food Secur.* **2015**, doi:10.1016/j.gfs.2015.01.002 (ref. [32]).
54. Velde, K.V.; Maertens, M. Impact of contract-farming in staple food chains: The case of rice in Benin. In Proceedings of the Agri-Food and Rural Innovations for Healthier Societies, Ljubljana, Slovenia, 26–29 August 2014 (ref. [3]).
55. Ward, P.S.; Florax, R.J.G.M.; Flores-Lagunes, A. Climate change and agricultural productivity in Sub-Saharan Africa: A spatial sample selection model. *Eur. Rev. Agric. Econ.* **2014**, *41*, 199–226 (ref. [37]).