



Universiteit
Leiden
The Netherlands

**Economic and agricultural transformation through large-scale farming :
impacts of large-scale farming on local economic development,
household food security and the environment in Ethiopia**

Bekele, M.S.

Citation

Bekele, M. S. (2016, October 25). *Economic and agricultural transformation through large-scale farming : impacts of large-scale farming on local economic development, household food security and the environment in Ethiopia*. Retrieved from <https://hdl.handle.net/1887/43731>

Version: Not Applicable (or Unknown)

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/43731>

Note: To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/43731> holds various files of this Leiden University dissertation.

Author: Bekele, M.S.

Title: Economic and agricultural transformation through large-scale farming : impacts of large-scale farming on local economic development, household food security and the environment in Ethiopia

Issue Date: 2016-10-25

References

- Abate, H. 2007. Review of extension systems applied in Ethiopia with special emphasis to the participatory demonstration and training extension system. Rome: Food and Agriculture Organization of the United Nations.
- Abate, T. 1995. Land redistribution and intra-household relations: The case of two communities in northern Ethiopia. *Ethiopian Journal of Development Research*, 17(1):23–42.
- Abbink, J. 2011. Land to the foreigners: Economic, legal and socio-cultural aspects of new land acquisition schemes in Ethiopia. *Journal of Contemporary African Studies*, 29 (4): 513–535.
- Abera, Y., and M. Kebede. 2013. Assessment on the Status of Some Micronutrients in Vertisols of the Central Highlands of Ethiopia. *International Research Journal of Agricultural Science and Soil Science* 3(5): 169–173.
- African Union. 2003. Assembly of the African Union second ordinary session, Assembly/AU/Decl.4- 11 (II), 10 - 12 July 2003, Maputo, Mozambique.
- Aggarwal, R. M. 2006. Globalization, local ecosystems and the rural poor. *World Development*, 34(8): 1405–1418.
- Agrarian Justice. 2013. The global land grab: A primer. <http://www.tni.org/sites/www.tni.org/files/download/landgrabbingprimer-feb2013.pdf>. Accessed 18 Mar 2015.
- Alder, P.R, S.D. Grosso & W.J. Parton. 2007. Life cycle assessment of net greenhouse-gas flux for bioenergy cropping systems. *Ecol. Appl.*, 17: 675-691.
- Alhassoun, R. 2009. Studies on factors affecting the infiltration capacity of agricultural soils. PhD Dissertation. Braunschweig, Germany: Technical University Carolo-Wilhelmina Brunswick. <http://d-nb.info/996242430/34>. Accessed 19 February 2014
- Alliance for a Green Revolution in Africa. 2015. Agriculture for Africa’s economic transformation: Transforming Africa’s agriculture for sustainable inclusive growth, improved livelihoods and shared prosperity. A background note presented for high-level side event on African economic transformation at the third international conference on *Financing for Development*, 13–16 July, Addis Ababa Ethiopia.
- Alloway, B. J. 2008. Zinc in Soils and Crop Nutrition, 2/e. Brussels, Belgium: International Zinc Association (IZA) and International Fertilizer Industry Association (IFA).
- Amare, Y. 1995. Land redistribution and its implications for peasant differentiation in Wogda, northern Shewa. *Ethiopian Journal of Development Research*, 17(1):1–22.
- Andreou, P. 1981. Agricultural development effort in Nigeria: An economic appraisal of the Western State Settlement Scheme. *Agriculture Systems*, 7(1):11–20.
- Andrianirina-Ratsialonana, R. & A. Teyssier. 2010. Large-scale agricultural investment in Madagascar: Lessons for more ‘inclusive’ models. In: L. Cotula & R. Leonard (eds), *Alternatives to land acquisitions: Agricultural investment and collaborative business models*. London/Bern/Rome/Maputo: SDC/IFAD/CTV. <http://www.ifad.org/pub/land/alternatives.pdf> Accessed 17 September 2014.
- ANRS. 2006. Rural Land Administration and Use. Proclamation No. 133/2006 of Amhara National Regional State (ANRS), Bahir Dar, Ethiopia.

- Anseeuw, W., L. Alden Wily, L. Cotula & M. Taylor. 2012. Land rights and the rush for land: Findings of the Global Commercial Pressures on Land Research Project. Rome: International Land Coalition.
- Aredo, D. 1990. The evolution of rural development policies. In: Pausewang, S. & F. Cheru, S. Brune & E. Chole (eds), *Ethiopia: Rural development options*. London: Zed Books.
- Arvidsson, J., A. Trautner & J. J. H. van den Akker. 2000. Subsoil compaction-risk assessment and economic consequences. In: Horn, R., J. J. H. van den Akker & J. Arvidsson (eds), *Subsoil compaction: Distribution, process and consequences. Advances in Geology 32*, 3–12. Reiskirchen, Germany: Catena Verlag.
- Asefa, S & T. Zegeye. 2003. Rural Poverty, food insecurity and environmental degradation in Ethiopia: A case study from south central Ethiopia. Paper prepared for presentation at the second EAF/IDR international symposium on contemporary development issues in Ethiopia, July 11-13, Addis Ababa, Ethiopia.
- Asgelil D, B. Taye and A. Yesuf. 2007. The status of micro-nutrients in nitisols, vertisols, cambisols and fluvisols in major maize, wheat, teff and citrus growing areas of Ethiopia. *Proceedings of Agricultural Research Fund*, 77–96.
- Awas, T., T. Bekele & S. Demissew. 2001. An ecological study of the vegetation of Gambella region, Southwestern Ethiopia. *Ethiopian Journal of Science* 24(2): 213–228.
- Bahru, Z. 2002. A history of modern Ethiopia, 1855–1991. Eastern African Studies, second edition, Ohio University Press: Ohio.
- Baker, J.L. 2000. Evaluating the Impact of Development Projects on Poverty: A Handbook for Practitioners. The World Bank: Washington, D.C.
- Balcha, B. G. 2007. Restructuring State and Society: Ethnic Federalism in Ethiopia. Aalborg: SPIRIT. (SPIRIT PhD Series; No. 8).
- Baldock, J. A. & P. N. Nelson. 2000. Soil organic matter. In: Sumner, M. E. (ed.), *Handbook of soil science*, B25–B84. Boca Raton, FL: CRS Press.
- Baldwin, K. D. S. 1957. The Niger agricultural project: An experiment in African development. Harvard University Press: Cambridge.
- Balehegn, M. 2015. Unintended Consequences: The Ecological Repercussions of Land Grabbing in Sub-Saharan Africa. *Environment: Science and Policy for Sustainable Development*, 57(2):4–21.
- Bardhan, P. 2006. Globalization and rural poverty. *World Development*, 34(8): 1393–1404. Doi:10.1016/j.worlddev.2005.10.010.
- Bardhan, P. K. 1973. Size, productivity and returns to scale: An analysis of farm-level data in India agriculture. *Journal of Political Economy*, 81(6), 1370–86.
- Barrett, C. 1996. On price risk and the inverse farm size-productivity relationship. *Journal of Development Economics*, 51: 193–215.
- Bates, R. & S. Block. 2009. Political economy of agricultural trade interventions in Africa. Agricultural Distortions Working Paper 87. <http://nrs.harvard.edu/urn-3:HUL.InstRepos:3322469> Accessed 24 July 2015.
- Bates, R. 1981. Markets and states in tropical Africa: The political basis of agricultural policies. Berkeley: University of California Press.
- BBC Africa. 2015. Can Ethiopia cope with worst drought in decades? <http://www.bbc.com/news/world-africa-34783604> Accessed 13 November 2015.
- Becker, S. & A. Ichino. 2002. Estimation of average treatment effects based on propensity scores. *The Stata Journal*, 2 (4): 358–377.

- Behailu, H., M. Tsedal, A. Jemal, G. Katckos, R. Weshik, G. Asere, T. Haile, A. Banjo, Z. Wasihun & U. Umode. 2011. Action plan of adaptation to climatic change. <http://www.epa.gov.et/Download/Climate/Regional%20Climate%20Change%20Adaptation%20Programmes/Gambella%20Regional%20State%20Climate%20change%20Adaptation%20Program.pdf> Accessed on 08 August 2015.
- Belay, K. & W. Manig. 2004. Access to rural land in eastern Ethiopia: Mismatch between policy and reality. *Journal of Agriculture and Rural Development in the Tropics and Subtropics*, 105 (2): 123–138.
- Benjaminsen, T. A. & I. Bryceson. 2012. Conservation, green/blue grabbing and accumulation by dispossession in Tanzania. *Journal of Peasant Studies* 39(2): 335–355.
- Benshanguel Gumuz region. 2004. Food security strategy, Assosa, Ethiopia.
- Berhanu, K. & C. Poulton. 2014. The political economy of agricultural extension policy in Ethiopia: Economic growth and political control. *Development Policy Review* 32(S2):S199–S216.
- Bernstein, H. 2004. Changing before our very eyes: Agrarian questions and the politics of land in capitalism today. *Journal of Agrarian Change*, 4(1-2):190–225.
- Berry, R. A. & W. R. Cline. 1979. Agrarian structure and productivity in developing countries. Baltimore: Johns Hopkins University Press.
- Berry, R. A. 1972. Farm-size distribution, income distribution and the efficiency of agricultural production: Columbia. *American Economic Review*, 62(1): 403–08.
- Bezemer, D. J. and D.D. Headey. 2008. Agriculture, development and urban bias. *World Development*, 36(8): 1342–1364.
- Birner, B. & D. Resnick. 2010. The political economy of policies for smallholder agriculture. *World Development*, 38(10): 1442–52.
- Booth, D. 2003. Towards a better combination of the quantitative and the qualitative: Some design issues from Pakistan participator poverty assessment. Pages: 97-102, In: Kanbur R. (ed.), *Q-squared: Combining qualitative and quantitative methods in poverty appraisal*, Delhi: Permanent Black.
- Borra, S., J. C. Franco & C. Wang. 2013. The challenges of global governance of land grabbing: Changing international agricultural context and competing political views and strategies. *Globalization* 10(1):161–179.
- Borras, S.M. & J.C. Franco. 2012. Global land grabbing and trajectories of agrarian change: A Preliminary analysis. *Journal of Agrarian Change* 12(1): 34–59.
- Bourguignon, F. & C. Morrisson. 1998. Inequality and development: The role of dualism. *Journal of Development Economics*, 5: 233–57.
- Brittaine, R. & N. Lutaladio. 2010. Jatropha: A small holder bioenergy crop. The potential for pro-poor development. *Integrated Crop Management*, Vol. 8. Rome: FAO.
- Brockington, D. 2004. Community conservation, inequality and injustice: Myths of power in protected area management. *Conservation and Society*, 2:411–432
- Bruce, J. W. 1998. Country profile of land tenure: Africa, 1996. *Land Tenure Centre Research Paper 130*, University of Wisconsin-Madison.
- Bues, A. & I. Theesfeld. 2012. Water grabbing and the role of power: Shifting water governance in the light of agricultural foreign direct investment. *Water Alternatives*, 5 (2): 266–283.

- Byres, T. J. 2003. Neo-classical neo-populism 25 years on: Déjà Vu and Déjà Passé. Towards a critique. *Journal of Agrarian Change*, 4(1-2): 17–44. DOI: 10.1111/j.1471-0366.2004.00071.x
- Cabral, L. & I. Scoones. 2006. Narratives of Agricultural Policy in Africa: What Role for Ministries of Agriculture? A paper for the Future Agricultures Consortium workshop, 20–22 March 2006. Brighton: Institute of Development Studies, University of Sussex.
- Campbell, C. A. 1989. Soil organic carbon, nitrogen and fertility. In: Schnitzer, M. and S. U. Khan (eds), *Soil organic matter, Developments in soil science* 8, 174–271. Amsterdam, the Netherlands: Elsevier Science Publishers.
- Carter M.R & C. Barrett. 2006. The economics of poverty traps and persistent poverty: an asset-based approach. *Journal of Development Studies*, 42:178–99.
- Chambers, R. & G. R. Conway. 1991. Sustainable rural livelihoods: Practical concepts for the 21st century. IDS discussion paper 296.
<http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/775/Dp296.pdf> Accessed 07 October 2014.
- Cheru, F. 2008. Africa's development in the 21st Century: Reshaping the research agenda, Nordic Africa Institute (NAI) Current African Issues, Uppsala: NAI.
- Cheru, F., R. Modi & S. Naidu. 2013. Catalysing an agricultural revolution in Africa: what role for foreign direct investment? In: Cheru, F. & R. Modi (eds), *Agricultural development and food security in Africa: The impact of Chinese, Indian and Brazilian investments*. London/New York: Zed Books
- Clapham, C. 1988. Transformation and continuity in revolutionary Ethiopia. Cambridge: Cambridge University Press.
- Cline, W. 2001. Trade, immigration, and wage distribution. In: Finis Welch (ed.), *The Causes and Consequences of Increasing Inequality*, Chicago and London: The University of Chicago Press, pp. 201-239.
- Cockburn, J. 2002. Income contribution of child Work in rural Ethiopia. *Working Paper 2002-12* of Centre for the Study of African Economies. Oxford: Oxford University.
- Collier, P. & S. Dercon. 2009. African agriculture in 50 years: Smallholders in a rapidly changing world? Technical paper prepared for FAO high-level expert forum on “How to Feed the World in 2050.” Rome: FAO.
- Collier, P. 2008. The politics of hunger: How illusion and greed fan the food crisis. *Foreign Affairs*. <https://www.foreignaffairs.com/articles/2008-11-01/politics-hunger> Accessed 30 October 2015.
- Collier, P. 2009. Africa's organic peasantry: Beyond romanticism. *Harvard International Review*, 32(2): 62–65.
- Collier, P. and J. W. Gunning. 1999. Explaining African economic performance. *Journal of Economic Literature*, 37 (March): 64–111.
- Committee on World Food Security (CFS). 2014. Principles for Responsible Investment in Agriculture and Food Systems.
http://www.fao.org/fileadmin/templates/cfs/Docs1314/rai/CFS_Principles_Oct_2014_EN.pdf Accessed 10 June 2015.
- Conolly, R. D. 1998. Modelling effects of soil structure on the water balance of soil-crop system: A review. *Soil and Tillage Research*, 48: 1–19.
- Cook, T. D., W. R. Shadish & V. C. Wong. 2006. Within Study Comparisons of Experiments and Non-Experiments: Can they help decide on Evaluation Policy," Mimeo, Northwestern University.

- Corson, C. & K.I. MacDonald. 2012. Enclosing the global commons: The convention on biological diversity and green grabbing. *Journal of Peasant Studies* 39(2): 263–283.
- Cotula, L. & S., Vermeulen (2011). Contexts and procedures for farmland acquisitions in Africa: What outcomes for local people? *Development*, 54(1): 40–48.
- Cotula, L., S., Vermeulen, R., Leonard & J., Keeley. 2009. Land grab or development opportunity? Agricultural investment and international land deals in Africa, London: International Institute for Environment and Development.
- Cramer, C., D. Johnston, C. Oya and J. Sender. 2014. Fairtrade, employment and poverty reduction in Ethiopia and Uganda, School of Oriental and African Studies (SOAS), University of London.
- Cramer, C., C. Oya & J. Sender. 2008. Lifting the blinkers: A new view of power, diversity and poverty in Mozambican rural labour markets. *Journal of Modern African Studies*, 46 (3): 361–392. DOI:10.1017/S0022278X08003340.
- Crewett, W. and Korf, B. 2008. Ethiopia: Reforming land tenure, *Review of African Political Economy*, 116:203–220
- CSA. 2007. Summary and Statistical Report of the 2007 Population and Housing Census, Federal Democratic Republic of Ethiopia, Central Statistical Agency (CSA) of the Federal Democratic Republic of Ethiopia, Addis Ababa, Ethiopia.
- CSA. 2009. Agricultural Sample Survey 2008/2009: Report on Land Utilization, Vol. IV. Addis Ababa, Ethiopia, Central Statistical Agency (CSA) of the Federal Democratic Republic of Ethiopia Addis Ababa, Ethiopia.
- CSA. 2011. Agricultural sample survey 2010/11: Report on livestock and livestock characteristics, volume II, 2011, Central Statistical Agency (CSA) of the Federal Democratic Republic of Ethiopia Addis Ababa, Ethiopia.
- Daie, G. F. 2012. Voluntary Villagization Scheme (VVS) for transforming semi-pastoral communities in Benishangul-gumuz region, northwestern Ethiopia: Challenges and local development indicators. *Journal of Sustainable Development in Africa*, 14(5):162-196.
- Dauvergne, P. & K.J., Neville. 2010. Forests, food, and fuel in the Tropics: The uneven social and ecological consequences of the emerging political economy of biofuels. *Journal of Peasant Studies*, 37(4):631–660
- Davis, K. B. Swanson, D. Amudavi, D. Mekonnen, A. Flohrs, J. Riese, C. Lamb & E. Zerfu. 2010. In-depth assessment of the public agricultural extension system of Ethiopia and recommendations for improvement. IFPRI discussion paper 01041. Washington DC: IFPRI.
- Davison, W. 2013. Ethiopia's Farm Investment Plans Falter on Flood Plain. <http://www.bloomberg.com/news/2013-11-24/ethiopian-drive-to-lure-farm-investment-founders-on-flood-plain.html> Accessed 02 January 2015.
- De Janvry A. & E. Sadoulet. 1996. Growth, inequality and poverty in Latin America: A causal analysis (1970–94). *Working paper no. 784*. California: University of California at Berkeley, Department of Agricultural and Resource Economics.
- De Schutter, O. 2010. Responsibly destroying the world's peasantry. A commentary by the UN special rapporteur on the rights to food. http://www.srfood.org/images/stories/pdf/medias/2010_04_06_op_ed_responsibly_destroying_the_worlds_peasantry.pdf Accessed 11 September 2014.
- De Schutter, O. 2011. How not to think of land-grabbing: Three critiques of large-scale investments in farmland. *Journal of Peasant Studies* 38(2): 249–279.

- Degefa, T. 2001. Death of mother tree: Land tenure and environmental degradation in the Oromian highlands, Ethiopia. PhD dissertation submitted to Institute of Social Studies, The Hague, the Netherlands. Maastricht: Shaker publishing.
- Degefu, W. 1987. Some aspects of meteorological drought in Ethiopia. In: Glantz, M. (ed.), *Drought and Hunger in Africa: Denying Famine a Future*. Cambridge: Cambridge University Press.
- Deininger K., D. Byerlee, J. Lindsay, A. Norton, H. Selod & M. Stickler, 2011. Rising global interest in farmland: Can it yield sustainable and equitable benefits? Washington DC: The World Bank.
- Deininger, K. 1999. Making negotiated land reform work: Initial experience from Columbia, Brazil and South Africa. The World Bank: Washington DC.
- Dejene, A. 1987. Peasants, agrarian socialism and rural development in Ethiopia. Boulder: West view press.
- Dercon, S & M. Tadesse. 1999. A Comparison of Poverty in Rural and Urban Ethiopia. *Ethiopian Journal of Economics* 8: 83–98.
- Dercon, S. & P. Krishnan. 1998. Changes in Poverty in Rural Ethiopia 1988–1995: Measurement, Robustness, Test and Decomposition. WPS/98-7, Center for the Study of African Economies, Institute of Economics and Statistics, University of Oxford.
- Dercon, S., D. O. Gilligan, J. Hoddinott & T. Woldehanna. 2009. The impact of agricultural extension and roads on poverty and consumption growth in fifteen Ethiopian villages. *American Journal of Agricultural Economics* 91(4): 1007–1021.
- Desta B. 1983. *Micro-nutrient status of some Ethiopian soils*. Soil Science Bulletin No. 4. Addis Ababa, Ethiopia: Institute of Agricultural Research.
- Devereux, S. 2000. Famine in the twentieth century, *IDS working paper 105*, Brighton: University of Sussex.
- Devereux, S. 2001. Sen’s entitlement approach: Critiques and counter-critiques. Oxford Development Studies, 29(3). <http://www.sas.upenn.edu/~dludden/FamineMortality.pdf> Accessed 07 October 2014. DOI: 10.1080/13600810120088859
- Diao, X., D. Headey and M. Johnson. 2008. Toward a green revolution in Africa: What would it achieve and what would it require? *Agricultural Economics*, 39-s1 (2008): 539–550.
- Dubey, R. 2012. Indian Farmer’s African Safari <http://www.businessworld.in/news/economy/indian-farmer%E2%80%99s-african-safari/415993/page-0.html> Accessed 2 June 2012
- Duflo, E. 2006. Field Experiments in Development Economics. A report prepared for the World Congress of the Econometric Society.
- Duflo, E., R. Glennerster & M. Kremer. 2008. Using Randomization in Development Economics Research: A Toolkit. In *Handbook of Development Economics*, vol. 4, ed. T. Paul Schultz and John Strauss, 3895–962. Amsterdam: North-Holland.
- Dyer, G. 2003. Redistributive land reform: No April Rose. The poverty of Berry and Cline and GKI on the inverse relationship. *Journal of Agrarian Change*, 4(1-2): 45–72. DOI: 10.1111/j.1471-0366.2004.00072.x
- Dyer, K. W. Undated. Large-scale land deals, food security and local livelihoods. *FAC CAADP Policy Brief 10*. <http://www.future-agricultures.org/policy-engagement/policy-briefs/1749-large-scale-land-deals-food-security-and-local-livelihoods/file> Accessed on 01 July 2016.
- Eastwood, R., M. Lipton & A. Newell. 2010. Farm size. In: Pingali, P. and R. Evenson (eds), *Handbook of Agricultural Economics*, Volume 4. Elsevier: Amsterdam

- Econenergy. 2008. Mozambique Biofuels Assessment. Report prepared for Mozambique's Ministries of Agriculture and Energy. Washington, DC and Mozambique: World Bank.
- EEA/EEPRI. 2002. A research report on land tenure and agricultural development in Ethiopia, Addis Ababa, Ethiopia: Ethiopian Economic Association and Ethiopian Economic Policy Research Institute.
- Eicher, C. K. & D. C. Baker. 1982. Research on agricultural development in Sub-Saharan Africa: A critical survey. MSU international development papers, East Lansing, Michigan.
- Eicher, C. K. & D. C. Baker. 1992. Agricultural development in Sub-Saharan Africa: A critical survey. In: Martin, L.R (ed.). *A survey of agricultural economics literature volume 4: Agriculture in Economic Development, 1940s to 1990s*. Minneapolis: University of Minnesota Press for the American Agricultural Economics Association.
- Ellen A. & T. Kring. 2012. The political economy of large-scale agricultural land acquisitions: Implications for food security and livelihoods/employment creation in rural Mozambique. *Working paper 2012-004*
<http://www.undp.org/content/dam/rba/docs/Working%20Papers/Agriculture%20Rural%20Mozambique.pdf> Accessed on 03 September 2015.
- Ellis, F. 1993. Peasant economics: Farm households and agrarian development, 2nd edition. Cambridge: Cambridge University Press.
- Endale K. 2011. Fertilizer Consumption and Agricultural Productivity in Ethiopia. *EDRI Working Paper 003*. Ethiopian Development Research Institute Addis Ababa, Ethiopia
- EPA. 2012. National Report of Ethiopia, the United Nations Conference on Sustainable Development (Rio+20). Addis Ababa: Federal Democratic Republic of Ethiopia, Environmental Protection Authority (EPA).
- Ethiopia Sugar Corporation. 2013. Sugar Corporation and Ethiopian sugar industry profile. <http://www.etsugar.gov.et/en/about.html> Accessed on 12 December 2013.
- Ethiopian Investment Agency. 2008. Investment opportunity profile for sugar cane plantation and processing in Ethiopia, Addis Ababa, Ethiopia.
- European Union. 2009. Directive 2009/28/EC of the European Parliament and the Council of the European Union on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC. *Official Journal of the European Union: L140/16-L140/62*. <http://faolex.fao.org/docs/pdf/eur88009.pdf>. Accessed 23 Mar 2014.
- Fairless, D. 2007. Biofuel: The little shrub that could- maybe. *Nature* 449: 652–655.
- Fan, S., B. Omilola & L. Lambert. 2009. Public spending for agriculture in Africa: Trends and composition. Regional Strategic Analysis and Knowledge Support System (ReSAKSS) working paper No. 28. Washington D.C.
- FAO, 2012a. Voluntary guidelines on the responsible governance of tenure of land, fisheries and forests in the context of national food security. Rome: Food and Agriculture Organization.
- FAO, 2012b. Trends and impacts of foreign investment in developing country agriculture: Evidence from case studies. Rome: Food and Agriculture Organization.
- FAO, 2012c. Smallholders and family farmers. http://www.fao.org/fileadmin/templates/nr/sustainability_pathways/docs/Factsheet_SMAL_LHOLDERS.pdf Accessed 15 September 2014
- FAO. 1983. World Food Security: A reappraisal of the concepts and approaches. Director General's Report. Rome.

- FAO. 1996. Rome declaration on world food security and world food summit plan of action. World Food Summit 13-17 November 1996. Rome.
- FAO. 2001. Food balance sheets: A handbook. Rome: FAO.
- FAO. 2002. The state of food insecurity in the World 2001. Rome: FAO.
- FAO. 2008. Climate change adaptation and mitigation in the food and agriculture sector. Paper presented at the Challenges of Climate Change and Bioenergy conference, Rome, 3-5 June.
- FAO. 2011a. PSNP woredas [Districts] of Ethiopia. <http://www.disasterriskreduction.net/east-central-africa/maps/detail/en/c/1146/> Accessed on 19 August 2015.
- FAO. 2011b. Land tenure and international investment in agriculture. A report by the high level panel of experts on food security and nutrition: Rome.
- FAO. 2012d. World Food Programme, IFAD. The state of food insecurity in the world 2012. Rome: FAO.
- FAO. 2012e. World Agriculture Towards 2030/2050: The 2012 revision. ESAE Working Paper No. 12-03 <http://www.fao.org/economic/esa/esag/en/> Accessed 28 March 2014.
- FAO. 2014. The state of food insecurity in the world: Strengthening the enabling environment to improve food security and nutrition. Rome: The Food and Agriculture Organisation (FAO) of the United Nations. <http://www.fao.org/3/a-i4030e.pdf> Accessed 07 October 2014
- Fargione J, J. Hill, D. Tilman, S. Polasky & P. Hawthorne. 2008. Land clearing and the biofuel carbon debt. *Science*, 319:1235–8.
- Fasih, T. 2008. Linking education policy to labor market outcomes. The International Bank for Reconstruction and Development / The World Bank: Washington DC.
- FDRE, 1995. The constitution of the Federal Democratic Republic of Ethiopia, Addis Ababa, Ethiopia.
- FDRE. 1997. Rural land administration proclamation no. 89/1997. Federal Democratic Republic of Ethiopia (FDRE), Addis Ababa: Negarit Gazettea.
- FDRE. 2002a. Re-enactment of the investment proclamation no. 280/2002. Federal Democratic Republic of Ethiopia (FDRE), Addis Ababa: Negarit Gazettea.
- FDRE. 2002b. Environmental protection organs establishment proclamation no. 295/2002. Federal Democratic Republic of Ethiopia (FDRE), Addis Ababa: Negarit Gazettea.
- FDRE. 2002c. Environmental impact assessment proclamation no. 299/2002. Federal Democratic Republic of Ethiopia (FDRE), Addis Ababa: Negarit Gazettea.
- FDRE. 2008. Council of Ministers' regulation to amend the investment incentives and investment areas reserved for domestic investors regulation, Regulation No./146/2008. Federal Democratic Republic of Ethiopia (FDRE), Addis Ababa: Negarit Gazettea.
- FDRE. 2010. Council of Ministers' directives regarding the administration of agricultural investment land. Federal Democratic Republic of Ethiopia (FDRE), Addis Ababa: Negarit Gazettea.
- Fisseha, M. 2011. A case study of the Bechera agricultural development project, Ethiopia. International Land Coalition. http://www.landcoalition.org/sites/default/files/publication/1021/EDC_Ethiopia_web_11.03.11.pdf Accessed 05 January 2015.
- Fitzgerald, M. 2010. The new breadbasket of the world? <http://www.irishtimes.com/newspaper/weekend/2010/0130/1224263415739.html>. Accessed on 22 February 2010.

- Flaherty, K., F. Kelemework & K. Kelemu. 2010. Ethiopia: Recent developments in agricultural research. Agricultural Science and Technology Indicators (ASTI) facilitated by the International Food Policy Research Institute (IFPRI), and Ethiopian Institute of Agricultural Research. <http://www.asti.cgiar.org/pdf/Ethiopia-Note.pdf> Accessed 28 October 2014.
- Focus on Land in Africa. 2013. Large-scale land acquisition in Ethiopia. <http://www.focusonland.com/countries/large-scale-land-acquisitions-in-ethiopia/> Accessed on 01 October 2015.
- Foley, J.A., R. DeFries, G.P. Asner & C. Barford. 2005. Global consequences of land use. *Science*, 309: 570–574.
- Fortune. 2015. Industry Ministry Seeks New Strategy for Cotton Development. Vol. 16, No. 799, August 24, 2015. Addis Ababa, Ethiopia.
- Forum for Environment. 2011. Assessment of Biofuel development activities in Ethiopia, Addis Ababa, Ethiopia.
- Foth, H. D. & B. G. Ellis. 1997. Soil fertility, 2/e. Boca Raton, FL: Lewis CRC Press.
- G/Mariam, A. 2015. Bye, bye Karaturistan, Ethiopia! <http://ecadforum.com/2015/02/22/bye-bye-karaturistan-ethiopia/> Accessed on 24 October 2015
- Galaty, J. G. 2012. ‘Unused’ land and unfulfilled promises: Justifications for displacing communities in East Africa. Paper presented at the Global Land Grabbing II conference, Cornell University. 12–19 October.
- Galaty, J. G. 2012. ‘Unused’ land and unfulfilled promises: Justifications for displacing communities in East Africa. Paper presented at the Global Land Grabbing II conference, Cornell University. 12-19 October.
- Gebremedhin, B., D. Hoekstra, D. Tegegn. 2006. Commercialisation of Ethiopian agriculture: Extension service from input-supplier to knowledge broker and facilitator. Addis Ababa: International Livestock Research Institute.
- Gebreyesus, S. H., T. Lunde, D. H. Mariam, T. Woldehanna & B. Lindtjørn. 2015. Is the adapted Household Food Insecurity Access Scale (HFIAS) developed internationally to measure food insecurity valid in urban and rural households of Ethiopia? *BMC Nutrition*, 1:2–10
- Geda, A. & D. Birhanu. 2011. Spending without proper planning: Why Ethiopian agriculture is not growing despite high public spending in the sector by Africa standard: A macro perspective. *IAES Working Paper No WP-A10-2011*, Addis Ababa: Institute of African Economic Studies.
- German, L., G. Schoneveld, M. Skutch, R. Andriani, K. Obidzinski, P. Pacheco, & A.D. Norwana. 2010. The Local Social and Environmental Impacts of Biofuel Feedstock Expansion: A Synthesis of Case Studies from Asia, Africa and Latin America. Brief Info No. 34, Jakarta, Indonesia: Center for International Forestry Research
- Getachew, F., A. Abdulkadir, M. Lemenih & A. Fetene. 2012. Effects of Different Land uses on Soil Physical and Chemical Properties in Wondo Genet Area, Ethiopia. *New York Science Journal*, 5(11): 110–118.
- Gibbs, H.K., M. Johnston, J.A. Foley, T. Holloway, C. Monfreda, N. Ramankutty & D. Zaks. 2008. Carbon payback times for crop-based biofuel expansion in the tropics: the effects of changing yield and technology. *Environmental Research Letters*, 3(2008):1-10. http://iopscience.iop.org/1748-9326/3/3/034001/pdf/1748-9326_3_3_034001.pdf Accessed on 02 September 2013.

- GIEWS (Global Information and Early Warning System). 2015. Country Brief: Ethiopia. <http://reliefweb.int/sites/reliefweb.int/files/resources/GIEWS%20Country%20Brief%20Ethiopia%2015-July-2015.pdf> Accessed on 19 August 2015.
- Glazerman, S., D. Levy & D. Myers. 2003. Non-experimental versus experimental estimates of earnings. A Draft report submitted to the Annals of the Academy of Political and Social Sciences.
- Gobena, M. 2010. Effects of large-scale land acquisition in rural Ethiopia: The case of Bako Tibe woreda. A thesis submitted to the Swedish University of Agricultural Sciences, Uppsala, Sweden.
- Gomiero, T., D. Pimentel & M.G. Paoletti. 2011. Environmental impact of different agricultural management practices: Conventional vs. organic agriculture. *Critical Reviews in Plant Sciences*, 30: 95–124.
- GRAIN. 2008. Seized: The 2008 land grab for food and financial security, GRAIN Briefing. http://www.grain.org/briefings_files/landgrab-2008-en.pdf Accessed 31 December 2011.
- GRAIN. 2014. Karuturi still going down. <http://www.grain.org/article/entries/5054-karuturi-still-going-down> Accessed 10 October 2014.
- Griffin, K., 1974. The political economy of agrarian change. London: Macmillan.
- Griffin, K., A. Z. Rahman & A. Ickowitz, 2002. Poverty and the distribution of land. *Journal of Agrarian Change*, 2 (3): 279–330.
- Grojnowski, R. 2010. Ethiopia: Land grabbing and the emergence of ‘cereal republics’ <http://ethiomeia.com/course/5181.html>. Accessed on 22 February 2010.
- Gronau, R. 1988. Sex-related wage differentials and women's interrupted labor careers -The chicken or the egg? *Journal of Labor Economics*, 6(3): 277–301.
- Guarcello, L. & F. Rosati. 2007. Child labor and youth employment: Ethiopia Country Study. <http://web.worldbank.org/archive/website01048/WEB/IMAGES/0704.PDF> Accessed 22 August 2015
- Haggblade, S., P.B.R. Hazell & P. A. Dorosh. 2007. Sectoral growth linkages between agriculture and the rural nonfarm economy. In Haggblade, S., P. B.R. Hazell and T. Reardon (Eds.), *Transforming the rural nonfarm economy: Opportunities and threats in the developing world*. Baltimore, MD: Johns Hopkins University Press.
- Hall, R., I. Scoones & D. Tsikata. 2015. Introduction: the contexts and consequences of Africa's land rush. In: Hall, R., I. Scoones and D. Tsikata (eds.), *Africa's land rush: Rural livelihoods and agrarian change*. Woodbridge/Suffolk : James Currey.
- Hallam, D. 2011. International investment in developing country agriculture: Issues and challenges. *Food Security Journal*, 3 (Suppl 1):S91–S98.
- Hanlon, J. 2011. Land moves up the political agenda. Mozambique Political Process Bulletin, (48). Maputo, February 2011: CIP (Centro de Integridade Publica).
- Harrison, D. 2005. The Sociology of modernization and development. New York: Rutledge.
- Heckman, J. & S. Polachek. 1974. The functional form of the income-schooling relation, *Journal of the American Statistical Association*, 69:350–54.
- Heinrich, C., A. Maffioli & G. Vázquez. 2010. A primer for applying Propensity-Score Matching. IDB Technical Notes No. IDB-TN-161. <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=35320229> Accessed 11 February 2011.
- Hentschel, J. 2003. Integrating the Qual and the Quant: When and why? Pages: 120-125, In: Kanbur R. (ed.), *Q-squared: Combining qualitative and quantitative methods in poverty appraisal*, Delhi: Permanent Black.

- Hirsch, J. 2006. Sex discrimination in the labor market, *Foundations and Trends in Microeconomics* 2(4): 281–361.
- HLPE. 2011. Land tenure and international investment in agriculture: A report by the High Level Panel of Experts (HLPE) on food security and nutrition. http://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/HLPE-Land-tenure-and-international-investments-in-agriculture-2011.pdf. Accessed 10 Sep 2012.
- HoAREC. 2013. Ecosystem management and conservation programme: Protecting valuable natural landscapes. <http://hoarec.org/index.php/2013-05-09-13-10-14/2013-05-23-14-04-04/2013-05-23-14-32-55>. Accessed 8 Aug 2013.
- HoARECN (Horn of Africa Regional Environment Centre and Network). 2015. Ecosystem conservation and Management. <http://www.aau.edu.et/hoarecn/major-projects/ecosystem-conservation/>. Accessed 9 Sep 2014.
- Hoddinott, J. & Y. Yohannes. 2002. Dietary diversity as a food security indicator. *Food Consumption and Nutrition Division Discussion Paper No. 136*. International Food Policy Research Institute, Washington D.C.
- Hoeffler, H. 2011. The political of agricultural policies in Africa: History, analytical concepts and implications for development cooperation. *Quarterly Journal of International Agriculture*, 50(1): 29–53.
- Human Rights Watch. 2012. ‘Waiting here for death’: Displacement and villagization in Ethiopia's Gambella region. Human Rights Watch, USA.
- IFPRI, Concern World Wide and Welthungerhilfe. 2012. The challenge of hunger: Ensuring sustainable food security under land, water and energy stress. Global Hunger Index 2012, Bonn/Washington DC/Dublin. Pp 72.
- ILRI. 2006. Mapping climate vulnerability and poverty in Africa. Nairobi: International Livestock Research Institute (ILRI).
- INBAR. 2010. Study on utilization of lowland bamboo in Benishangul Gumuz region, Ethiopia. International Network for Bamboo and Rattan [INBAR], Addis Ababa, Ethiopia
- International Land Coalition. 2011. Top 6 myths about land acquisitions. <http://www.commercialpressuresonland.org/press/top-6-myths-about-land-acquisitions> Accessed on 08 September 2015.
- IPCC. 2007. Climate change 2007: The physical science basis. Contribution of Working Group I to the fourth assessment report of the Intergovernmental Panel on Climate Change. <http://www.ipcc.ch/> Accessed 15 August 2011.
- Jayne, T.S. & D. Molla. 1995. Toward a research agenda to promote household access to food in Ethiopia. Working paper 2, Food security research project of the Ministry of Economic Development and Cooperation, Addis Ababa, Ethiopia.
- Jemma, H. 2001. The debate over rural land tenure policy options in Ethiopia: Review of the post-1991 contending views. *Ethiopian Journal of Development Research*, 23(2):35–84.
- Johnson, D. L., S.H. Ambrose, T.J. Bassett, M.L. Bowen, D.E. Crummey, J.S. Isaacson, D.N. Johnson, P. Lamb, M. Saul, and A.E. Winter-Nelson. 1997. Meanings of environmental terms. *Journal of Environmental Quality*, 26: 581–589.
- Jones, A. D., F. M. Ngunjiri, G. Pelto & S. L. Young. 2013. What are we assessing when we measure food security? A compendium and review of current metrics. *Advances in Nutrition*, 4: 481–505. doi:10.3945/an.113.004119

- Jones, G. & T., Khanna. 2006. Bringing history (back) into international business. *Journal of International Business Studies*, 37(4): 453–468.
- Jonsson U. 2010. The rise and fall of paradigms in world food and nutrition policy. (Commentary), *World Nutrition*, 1:128–58.
- Juma, C. 2011. The new harvest: Agricultural innovation in Africa. New York: Oxford University Press.
- Kaag, M. & A. Zoomers (eds.) (2014). The Global Land Grab. Beyond the Hype. London: Zed Books. 288 pages
- Keeley, J. & I. Scoones. 2000. Knowledge, Power and Politics: The environmental policy-making process in Ethiopia, *Journal of Modern African Studies*, 38(1): 89–120.
- Keeley, J., W. M. Seide, A. Eid & A. L. Kidewa. 2014. Large-scale land deals in Ethiopia: Scale, trends, features and outcomes to date. London: International Institute for Environment and Development (IIED).
- Keller, E. J. 2005. Making and re-making nation and state in Ethiopia. In, Laremont, R. R. (ed.), *Borders, nationalism and the African state*, Boulder, Co: Lynne Rienner.
- Ketsela, Y. 2006. Attendant issues in the current agricultural extension programme. In: Berhanu, K. & D. Fantaye (eds), *Ethiopia: Development policies, trends, changes and continuities*, Addis Ababa: Addis Ababa University Press.
- Kevane, M. 1996. Agrarian Structure and Agricultural Practice: Typology and Application to Western Sudan. *American Journal of Agricultural Economics*, 78:236–245.
- Khandker, S. R., G. B. Koolwal & H. A. Samad. 2010. Handbook of impact evaluation: Quantitative methods and practices. The World Bank: Washington D.C.
- Khandker, S. R., G. B. Koolwal & H. A. Samad. 2010. Handbook on impact evaluation: Quantitative methods and practices. Washington D.C.: The World Bank.
- Kimhi, A. 2003. Plot size and maize productivity in Zambia: the inverse relationship revisited. Discussion Paper No. 10.03, Hebrew University of Jerusalem.
- Kparmwang, T., V. O. Chude, B. A. Raji & A. C. Odunze. 2000. Extractable micronutrient in some soils developed on sandstone and shale in the Benue-valley, Nigeria. *Nigerian Journal of Soil Research* 1:42–48.
- Lal, R. 2004a. Soil carbon sequestration to mitigate climate change. *Geoderma*, 123: 1–22.
- Lal, R. 2004b. Soil carbon sequestration impact on global climate and food security. *Science*, 304: 1623–1627.
- Land Matrix. 2015. *Agricultural drivers of global land acquisition*. <http://landmatrix.org/en/get-the-idea/agricultural-drivers/>. Accessed 23 Mar 2015.
- Land Matrix. 2016. Land Matrix: Ethiopia. <http://www.landmatrix.org/en/get-the-detail/by-target-country/ethiopia/> Accessed 25 January 2016.
- Lavers, T. 2012a. Patterns of agrarian transformation in Ethiopia: State mediated commercialization and the “Land Grab”. *Journal of Peasant Studies*, 39(3–4):795–822
- Lavers, T. 2012b. “Land grab” as development strategy? The political economy of agricultural investment in Ethiopia. *Journal of Peasant Studies*, 39(1):105–132
- Lazarus, E. D. 2014. Land grabbing as a driver of environmental change. *Area*, 46: 78–82.

- Lemieux, T. 2003. The Mincer equation: Thirty years after schooling, experience and earning, Center for Labour Economics *Working Paper No. 62*. University of California, Berkeley.
- Li, T. 2011. Centering labor in the land grab debate. *Journal of Peasant Studies*, 37(2), 281–298.
- Li, P. 2014. Impacts of foreign agricultural investment on developing countries: Evidence from case studies. *FAO commodity and trade policy research working paper no. 47* <http://www.fao.org/3/a-i3900e.pdf> Accessed 10 June 2016.
- Liddicoat, C., A. Schapel, D. Davenport & E. Dwyer. 2010. *Soil carbon and climate change, PIRSA Discussion Paper*. http://www.pir.sa.gov.au/data/assets/pdf_file/0006/137904/PIRSA_soil_carbon_and_climate_change.pdf. Accessed 21 February 2014.
- Lipton, M. 1977. Why poor people stay poor? A study of urban bias in world development. London: Temple Smith.
- Lipton, M. 2005. The family farm in a globalizing world. 2020 vision discussion paper 40. International Food Policy Research Institute: Washington DC.
- Liu, P. 2014. Impacts of foreign agricultural investment on developing countries: Evidence from case studies. Rome: Food and Agriculture Organization of the United Nations.
- Maertens, M. & J. Swinnen. 2009. Trade, standards and poverty: Evidence from Senegal. *World Development*, 37(1): 161–178.
- Makki, F. 2012. Power and property: commercialization, enclosures, and the transformation of agrarian relations in Ethiopia. *Journal of Peasant Studies*, 39(1): 81–104.
- Markakis, J. 2011. Ethiopia: The last two frontiers. East African Series, Melton/Woodbridge/Suffolk: James Currey.
- Matondi, P.B., K. Havnevik & A. Beyene (eds). 2011. Biofuels, land-grabbing and food security in Africa. London: Zed Books.
- Maxwell, D. & R. Caldwell. 2008. The coping strategy index: Field methods manual. http://home.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp211058.pdf Accessed 10 January 2012.
- Maxwell, D., B. Watkins, R. Wheeler & G. Collins. 2003. The Coping Strategies Index: A tool for rapidly measuring food security and the impact of food aid programmes in emergencies. Paper presented at the international workshop on *food security in complex emergencies: building policy frameworks to address longer-term programming challenges*, organized by FAO, Tivoli, 23–25 September 2003.
- McCarthy, J. F., A.C. Jacqueline & A. Suraya. 2012. Trajectories of land acquisition and enclosure: Development schemes, virtual land grabs, and green acquisitions in Indonesia's Outer Islands. *Journal of Peasant Studies* 39(2): 521–549.
- McCartney, M., T. Alemayehu, A. Shiferaw & B. S. Awulachew. 2010. Evaluation of Current and Future Water Resources Development in the Lake Tana Basin, Ethiopia. IWMI Research Report 134.
- McKenzie, R. H. 2001. *Micronutrient requirements of crops*. <http://www1.agric.gov.ab.ca>. Accessed 24 Apr 2015.
- McLure, J. 2009. Ethiopian Farms Lure Investor Funds as Workers Live in Poverty. http://www.bloomberg.com/apps/news?pid=20601080&sid=aeuJT_pSE68c Accessed

on 25 February 2010

- Meher, L.C, S. N. Naik & L.M Das. 2004. Methanolysis of Pongomia pinnata (karanja) oil for production of biodiesel. *Journal of Scientific and Industrial Research*, 63(2004): 913–18.
- Mellor, J. & E. Paulin. 1995. The effects of gender and race on salary growth: The role of occupational structure in a service sector firm, *Eastern Economic Journal*, 21(3): 375–92.
- Mellor, J. W. & P. Dorosh. 2010. Agriculture and the Economic Transformation of Ethiopia. Ethiopia Strategy Support Program 2, Working Paper 010. International Food Policy Research Institute (IFPRI) and Ethiopian Development Research Institute (EDRI), Addis Ababa, Ethiopia.
- Mengistu W. 2005. Effects of Resettlement Schemes on the Biophysical and Human Environments: The Case of the Gambella Region, Ethiopia. Universal Publishers Boca Raton, Florida.
- Mersha, G. 2009. International agricultural land deals award Ethiopian virgin lands to foreign companies http://www.ethiomed.com/adroit/ethiopian_virgin_land_for_sale.pdf Accessed on 22 February 2010.
- Mihretie, K. 2010. Ethiopia on the verge of becoming a colony of many. <http://ethiomed.com/course/5159.html>. Accessed on 25 February 2010.
- Mincer, J. 1958. Investment in human capital and the personal income distribution, *Journal of Political Economy*, 66:281–302.
- Mincer, J. 1974. *Schooling, experience, and earnings*, New York: Columbia University Press for the National Bureau of Economic Research.
- Ministry of Agriculture and Rural Development (MoARD), Addis Ababa, Ethiopia.
- Ministry of Agriculture. 2011a. Agricultural investment performance evaluation report for Benshanguel Gumuz Regional State, Addis Ababa, Ethiopia: Ministry of Agriculture. [የግብርና ሚኒስቴር. 2003. የቤንሻንጉል ክልል የግብርና ኢንቨስትመንት እንቅስቃሴ ግምገማ ሪፖርት፣ አዲስ አበባ፣ ኢትዮጵያ]
- Ministry of Agriculture. 2011b. Agricultural investment performance evaluation report for Gambella regional state, Addis Ababa, Ethiopia: Ministry of Agriculture. [የግብርና ሚኒስቴር. 2003. የጋምቤላ ክልል የግብርና ኢንቨስትመንት እንቅስቃሴ ግምገማ ሪፖርት፣ አዲስ አበባ፣ ኢትዮጵያ]
- Ministry of Agriculture. 2011c. Investors' land utilization assessment report of Oromia regional state, Addis Ababa, Ethiopia: Ministry of Agriculture. [የግብርና ሚኒስቴር. 2003. በአሮሚያ ክልል በሚገኙ ባለሐብቶች የተደረገ የመሬት አጠቃቀም ግምገማ ሪፖርት፣ አዲስ አበባ፣ ኢትዮጵያ]
- Ministry of Agriculture. 2012. Agricultural investmet land utilization report for Gambella regional state, Addis Ababa, Ethiopia: Ministry of Agriculture. [[የግብርና ሚኒስቴር. 2004. የጋምቤላ ክልል የግብርና ኢንቨስትመንት መሬት አጠቃቀም ግምገማ ሪፖርት፣ አዲስ አበባ፣ ኢትዮጵያ]
- Ministry of Agriculture. 2013. Agricultural investmet land utilization report for Benshanguel Gumuz regional state, Addis Ababa, Ethiopia: Ministry of Agriculture. [[የግብርና ሚኒስቴር. 2005. የቤንሻንጉል ክልል የግብርና ኢንቨስትመንት መሬት አጠቃቀም ግምገማ ሪፖርት፣ አዲስ አበባ፣ ኢትዮጵያ]
- Ministry of Land Reform. 1975. The military regime land proclamation No. 31/1975, Addis Ababa, Ethiopia: Ministry of Land Reform.
- MoARD. 2009. Agricultural investment potential in Ethiopia, Ministry of Agriculture and Rural Development (MoARD), Addis Ababa, Ethiopia.
- MoARD. 2010a. Agricultural Investment and Land Lease Implementation Directive.

- MoARD. 2010b. Ethiopia's agricultural sector policy and investment framework (2010-2020). Draft report of the Ministry of Agriculture and Rural Development (MoARD), Addis Ababa, Ethiopia.
- MoFED. 2003. Rural development policy and strategy. Ministry of Finance and Economic Development (MoFED), Addis Ababa, Ethiopia: Economic Policy and Planning Department.
- MoFED. 2006 Ethiopia: Building on progress: A plan for accelerated and sustained development to end poverty (2005/06-2009/10), Addis Ababa, Ethiopia: Ministry of Finance and Economic Development (MoFED).
- MoFED. 2010. The growth and transformation plan (2010/11-2014/15), Addis Ababa, Ethiopia: Ministry of Finance and Economic Development (MoFED).
- Moreda, T. 2015. Listening to their silence? The political reaction of affected communities to large-scale land acquisitions: insights from Ethiopia. *The Journal of Peasant Studies*, 42 (3-4): 517-539.
- Mousavi, S. R., M. Shahsavari and M. Rezaei. 2011. A general overview on Manganese (Mn) importance for crop production. *Australian Journal of Basic and Applied Science* 5(9):1799-1803.
- Moyo, J.M., E.M. Bah & A. Verdier-Chouchane. 2015. Transforming Africa's agriculture to improve competitiveness. The Africa competitiveness report 2015. Geneva: World Economic Form.
- Multiplex. 2013. Farm management in Africa. <http://www.multiplexgroup.com/farmManagement.html> Accessed 05 September 2015.
- Nalepa, R. A. & D. M., Bauer. 2012. Marginal lands: The role of remote sensing in constructing landscapes for agrofuel development. *Journal of Peasant Studies*, 39(2): 403-412.
- Nalepa, R. A. 2013. Land for agricultural development in the era of 'land grabbing': A spatial exploration of the 'marginal lands' narrative in contemporary Ethiopia. *LDPI working paper 40*, p. 29. http://www.iss.nl/fileadmin/ASSETS/iss/Research_and_projects/Research_networks/LDPI/LDPI_WP_40.pdf Accessed 15 July 2013.
- Nangulu, A. K. 2009. Food security and coping mechanisms in marginal areas: The case of West Pokot, Kenya, 1920-1995. African Studies Centre, African Studies Collection, Vol. 15, Leiden, the Netherlands.
- Ndulu, B., L. Chakraborti, L. Lijane, V. Ramachandran & J. Wolgin 2007. Challenges of African Growth: Opportunities, constraints and strategic directions. The International Bank for Reconstruction and Development / The World Bank: Washington DC.
- Nederveen, S.C. 2012. Flood Recession Farming: An Overview and Case Study from the Upper Awash Catchment, Ethiopia. MSc thesis Hydrology, code 450122, Wageningen University, the Netherlands
- NEPAD. 2009. How are countries measuring up to the Maputo declaration? CAADP Policy Brief 2009. http://www.e-alliance.ch/fileadmin/user_upload/docs/Publications/Food/CAADP_How_are_countries_measuring_up_to_the_Maputo_declaration.pdf Accessed 30 December 2015.

- NMSA. 2001. Initial National Communication of Ethiopia (INCE) to the United Nations Framework Convention on Climate Change. A report of the National Meteorological Services Agency (NMSA), Addis Ababa, Ethiopia.
<http://unfccc.int/resource/docs/natc/ethnc1.pdf> Accessed 13 January 2014
- Norberg, V. H. 1977. Swedes in Haile Selassie's Ethiopia, 1924-1952: A study in early development co-operation. Scandinavian Institute of African Studies: Uppsala.
- Oakland Institute. 2011. Understanding land investment in Africa: Ethiopia country report, Oakland, CA: Oakland Institute
- Oakland Institute. 2013. Ethiopia: Land deal contracts.
<http://www.oaklandinstitute.org/sites/oaklandinstitute.org/files/Karuturi-Agreement.pdf> Accessed 24 June 2013.
- OAU. 1980. Lagos plan of action for the economic development of Africa (1980-2000). Organisation of African Unity (OAU), Lagos, Nigeria.
- Ofcansky, T. P & L. Berry. 1991. Ethiopia: A Country Study. Washington: GPO for the Library of Congress.
- Olanya, D.R. 2012. 'From Global Land Grabbing for Biofuels to Acquisitions of African Water for Commercial Agriculture', *Current African Issues 50*, Uppsala, Sweden: Nordisk Africa Institute
- ONE. 2013. The Maputo commitments and the 2014 African Union year of Agriculture
https://s3.amazonaws.com/one.org/images/131008_ONE-Maputo_FINAL.pdf Accessed 15 January 2016
- ONRS. 2007. Rural land administration and utilization proclamation no.130/2007 of Oromia National Regional State (ONRS), Finfine, Ethiopia.
- Osuji, G. E, M. A. Okon, M.C. Chukwuma & I. I. Nwarie. 2010. Infiltration Characteristics of Soils under Selected Land Use Practices in Owerri, Southeastern Nigeria. *World Journal of Agricultural Sciences*, 6 (3): 322–326.
- Oxfam. 2014. Smallholder at risk: Monoculture expansion, land, food and livelihoods in Latin America. https://www.oxfam.org/sites/www.oxfam.org/files/bp180-smallholders-at-risk-land-food-latin-america-230414-en_0.pdf Accessed on 18 August 2015.
- Oxfam-GB. 2000. Household baseline survey of Menge woreda, Benshanguel Gumuz region, Assosa. Unpublished document.
- Oya, C. & J. Sender. 2009. Divorced, separated and widowed women workers in rural Mozambique. *Feminist Economics*, 15(2): 1–31.
- Oya, C. 2010. Agro-pessimism, capitalism and agrarian change: trajectories and contradictions in Sub-Saharan Africa. In: Padayachee, V. (ed.): The political economy of Africa. Abingdon and New York: Routledge.
- Oya, C., 2013a. Methodological reflections on 'land grab' databases and the 'land grab' literature 'rush'. *Journal of Peasant Studies*, 40 (3), 503–520.
- Oya, C., 2013b. The land rush and classic agrarian questions of capital and labour: A systematic scoping review of the socioeconomic impact of land grabs in Africa. *Third World Quarterly*, 34 (9), 1532–1557.
- Pacheco P., D. A. Wardell, L. German, F. X. Johnson, N. Bird, J. W. van Gelder, H. Schwaiger, G. Schoneveld, K. Obidzinski, M. Guariguata, M. Skutsch, Y. Gao, G. von Maltitz, W. Achten, L. Verchot, H. Komarudin, O. Masera & R. Andriani. 2012. Bioenergy, sustainability and trade-offs: Can we avoid deforestation while

- promoting biofuels? *Brief Info*, No. 54, CIFOR: Indonesia.
- Palmer, D., S. Fricška & B. Wehrmann in collaboration with C. Augustinus, P. Munro-Faure a, M. Törhönen and A. Arial. 2009. Towards improved land governance. *Land Tenure Working Paper 11*, FOOD FAO and UN-HABITAT. Rome: Italy.
- Pankhurst, A. & D. Rahmato. 2013. Introduction: Food security, safety nets and social security in Ethiopia. In: Rahmato, D., A. Pankhurst & J. van Uffelen (eds), *Food security, safety nets and social security in Ethiopia*. Addis Ababa: Forum for Social Studies (FSS).
- Piccolo, A. 2012. The nature of soil organic matter and innovative soil managements to fight global changes and maintain agricultural productivity. In: A. Piccolo (ed.), *Carbon Sequestration in Agricultural Soils: A Multidisciplinary Approach to Innovative Methods*, Berlin: Springer-Verlag. DOI 10.1007/978-3-642-23385-2.
- Pimentel, D., T. Petrova, M. Riley, J. Jacquet, J. Honigman & E. Valero. 2006. Conservation of biological diversity in agricultural, forestry and marine systems. In: A.R. Bruk (ed.), *Focus on Ecology Research*. New York: Nova Science Publishers, pp. 151-173.
- Polachek, S. W. 2007. Earnings over the lifecycle: The Mincer earnings function and its applications. IZA Discussion Paper No. 3181. Bonn: The Institute for the Study of Labor (IZA).
- Post, W. M. & K.C. Kwon. 2000. Soil carbon sequestration and land-use change: processes and potential. *Global Change Biology*, 6: 317–328.
- Provisional Military Government of Ethiopia, 1975. A Proclamation to provide for the public ownership of rural lands, Proclamation No. 31, Addis Ababa, Ethiopia.
- Quisumbing A. R. & J.A Maluccio. 1999. Intrahousehold allocation and gender relations: new empirical evidence. Policy research report on gender and development. Working Paper Series, No. 2. Washington, DC: The World Bank.
- Rabalais, N. N., R. J. Diaz, L. A. Levin, R. E. Turner, D. Gilbert & J. Zhang. 2010. Dynamics and distribution of natural and human-caused hypoxia. *Biogeoscience* 7:585–619.
- Rahmato, D. 1984. Agrarian reform in Ethiopia. Uppsala: Scandinavian Institute of African Studies.
- Rahmato, D. 1993. Agrarian change and agrarian crisis: State and peasantry in post-revolution Ethiopia. *Africa*, 63(1):36–55.
- Rahmato, D. 2003. Poverty and agricultural involution. In: D. Rahmato (ed.), *Some aspects of poverty in Ethiopia*. Addis Ababa: Forum for Social Studies, pp. 1–15.
- Rahmato, D. 2008. Ethiopia: Agricultural policy review. In: Assefa, T (ed.), *Digest of Ethiopia's national policies, strategies and programmes*. Addis Ababa: Eclipse Printers.
- Rahmato, D. 2009. The Peasant and the State: Studies in agrarian change in Ethiopia 1950s–2000s, Addis Ababa, Ethiopia: Addis Ababa University Press
- Rahmato, D. 2013. Up for grabs: the case of large Indian investments in Ethiopian agriculture. In: Cheru, F. & R. Modi (eds), *Agricultural development and food security in Africa: The impact of Chinese, Indian and Brazilian investments*. London/New York: Zed Books
- Rahmato, D., 2011. Land to investors: Large-scale land transfer in Ethiopia. Forum for Social Studies, Addis Ababa, Ethiopia.

- Ravallion, M. 2003. Can qualitative methods help quantitative poverty measurement? Pages: 58-67, In: Kanbur R. (ed), *Q-squared: Combining qualitative and quantitative methods in poverty appraisal*, Delhi: Permanent Black.
- Rice, X. 2009. Ethiopia – country of the silver sickle – offers land dirt cheap to farming giants: Addis Ababa sells vast fertile swaths to international companies in effort to introduce large-scale commercial agriculture. <http://www.guardian.co.uk/world/2010/jan/15/ethiopia-sells-land-farming-giants>. Accessed on 22 February 2010.
- Robinson, W. I., T. Abate, F. Fantaw, W. Shiferaw & A., Abdulla. 2012. Factors affecting the performance of Ethiopian commercial farmers. Report of mission for UNDP-Ethiopia. Wales, United Kingdom.
- Rodrigues, A. S., R. M. Ewers, L. Parry, C. Souza, A. Verissimo & A. Balmford. 2009. Boom and bust development patterns across the Amazon deforestation frontier. *Science* 324:1435–1437.
- Roider, W. 1971. Farm settlements for Sodo economic development: The Western Nigeria case. Munich: Weltforum Verlag.
- Rosenbaum, P. R. & D. B. Rubin. 1983. The central role of the propensity score in observational studies for causal effects. *Biometrika* 70(1): 41–55.
- Rosset, P. 1999. The multi-functions and benefits of small farm agriculture. Policy brief No. 4, Food First/The Institute for Food and Development Policy, Oakland, CA.
- Rostow, W.W. 1960. The Stages of economic growth: A non-communist manifesto. London: Cambridge University Press.
- Rulli, M. C., A. Saviori & P. D'Odorico. 2013. Global land and water grabbing. *Proceedings of the National Academy of Science*, 110 (3): 892–897
- Rutten, M. & M. Mwangi. 2008. Ignoring another inconvenient truth? Challenges in managing Africa's water crisis, African Studies Centre Infosheet No. 5: <https://openaccess.leidenuniv.nl/bitstream/handle/1887/13594/ASC-101783892-060-01.pdf?sequence=2>. Accessed 20 June 2014.
- Salami O. A., A. B. Kamara & Z. Brixiova. 2010. Smallholder agriculture in East Africa: Trends, constraints and opportunities. *African Development Bank Group Working paper no. 105*. Tunis, Tunisia: African Development Bank.
- Schoneveld, G.C. 2013. The governance of large-scale farmland investment in Sub-Saharan Africa: A comparative analysis of the challenges for sustainability. PhD dissertation submitted to International Development Studies, Utrecht University, Utrecht, the Netherlands.
- Schmidt, E. & P. Dorosh. 2009. A sub-national hunger index for Ethiopia: Assessing progress in region-level outcomes. Discussion Paper No. ESSP 005, International Food Policy Research Institute – Ethiopia Strategy Support Program 2. http://essp.ifpri.info/files/2011/02/ESSP2_DP05_A-Sub-National-Hunger-Index-for-Eth-Accessing-Progress-in-Region-Level-Outcomes.pdf Accessed 19 August 2015.
- Schoneveld, G.C. & M. Shete. 2014. Tradition, modernity, and the developmental state: Exploring the local socio-political tensions of commercial agricultural investment in contemporary Ethiopia. In: A. Zoomers & M. Kaag (eds), *Beyond the hype: Land grabbing in Africa*, London: Zed Books.
- Schoneveld, G.C. 2011. Anatomy of large-scale farmland acquisition in Sub-Saharan Africa. Working Paper 85. Bogor: Center for International Forestry Research.

- Scoones, I., R. Hall, S. Borrás, B. White & W. Wolford. 2013. The politics of evidence: methodologies for understanding the global land rush. *Journal of Peasant Studies*, 40 (3), 469–483.
- Sen A. 1981. Poverty and famines: An essay on entitlement and deprivation. New York: Oxford University Press.
- Sender, J. & D. Johnston. 2003. Searching for a weapon of mass production in rural Africa: Unconvincing arguments for land reform. *Journal of Agrarian Change*, 4(1-2): 142–164. DOI: 10.1111/j.1471-0366.2004.00075.x
- Sethi, A., 2013. Karuturi debacle prompts Ethiopia to review land policy. <http://farmlandgrab.org/post/view/22144> Accessed 6 June 2013.
- Shaffer, P. 2012. Ten years of ‘Q-Squared’: Are two disciplines better than one? Q-Squared working paper No. 57, Department of International Development Studies, Trent University, Canada. http://www.trentu.ca/ids/documents/Q2_WP57_Shaffer.pdf Accessed 06 October 2014.
- Shete, M. & M. Rutten. 2014. Biofuel feedstock production in Ethiopia: Status, challenges and contributions. In: Akinyoade, A., W. Klaver, S. Soeters and D. Foeken (eds), *Digging deeper: Inside Africa’s agricultural, food and nutrition dynamics*, 135–156. Leiden/Boston: Brill.
- Shete, M. & M. Rutten. 2015a. Impacts of large-scale farming on local communities' food security and income levels – Empirical evidence from Oromia region, Ethiopia. *Land Use Policy* 47: 282–292.
- Shete, M. 2010. Magnitude and determinants of rural poverty in Zeghe peninsula. *Journal of Poverty* 14(3):308–325.
- Shete, M., 2011. Implications of land deals to livelihood security and natural resource management in Benshanguel Gumuz Regional State, Ethiopia. Paper presented at the Global Land Grabbing conference, University of Sussex. 6-8 April 2011.
- Shete, M., and M. Rutten. 2015b. Large-scale land acquisition in Ethiopia: Implications for agricultural transformation and livelihood security. In *Africa's land rush: Rural livelihood and agrarian change*, eds. R. Hall, I. Scoones and D. Tsikata, 65–82. Suffolk, UK: James Currey.
- Shiferaw, A., M. Soederbom, E. Siba & G. Alemu. 2011. Road networks and enterprise performance in Ethiopia: Evidence from the road sector development program. IGC Working Paper 12/0696
- Sims, J. T. & G. V. Johnson. 1991. Micronutrient soil tests. In *Micronutrients in Agriculture: Second edition*, eds. J. J. Mortvedt, F. R. Cox, L. M. Shuman and R. M. Welch, 427–476. Soil Science Society of America. Books Series No. 4.
- Smalley, R. 2013. Plantations, contract farming and commercial farming areas in Africa: A comparative review. FAC Working Paper 055. http://www.fao.org/uploads/media/FAC_Working_Paper_055.pdf accessed on 18 August 2015.
- Smalley, R. 2014. Large-scale commercial agriculture in Africa: Lessons from the past. *Future Agricultures Policy Brief* 65. <http://www.future-agricultures.org/policy-engagement/policy-briefs/1835-large-scale-commercial-agriculture-in-africa-lessons-from-the-past/file> Accessed 10 June 2016.
- Smalley, R. E. Sulle & L. Malale. 2014. The role of the state and foreign capital in agricultural commercialisation: The case of sugarcane outgrowers in Kilombero District, Tanzania,

- FAC Working Paper 106*. http://www.plaas.org.za/sites/default/files/publications-pdf/FAC_Working_Paper_106.pdf Accessed 08 September 2015.
- SMNE. 2012. Saudi Star Pakistani foreign workers and Ethiopians killed in raid on Saudi Farm compound—Believed related to land grabs, Solidarity Movement for a New Ethiopia (SMNE), 30 April / <http://farmlandgrab.org/post/view/20417-saudi-star-pakistani-foreign-workers-and-ethiopians-killed-in-raid-on-saudi-farm-compoundbelieved-related-to-land-grabs> Accessed 29 October 2013
- Sneyd, L. Q. 2013. Wild food, prices, diets and development: Sustainability and food security in urban Cameroon. *Sustainability*, 5(2013): 4728–4759. Doi:10.3390/su5114728.
- SNNP. 2007. Rural land administration and utilization proclamation no.110/2007 of Southern Nations Nationalities and Peoples Regional State (SNNP), Awasa, Ethiopia
- Sobhan, R. 1993. *Agrarian reform and social transformation: Preconditions for development*. London: Zed books.
- Sparovek, G., Q. D. van Lier, S. Marcinic, J. Rogasic, and E. Schnug. 2002. A simple model to predict river floods—a contribution towards quantifying the significant of soil infiltration rates. *Landbauforschung Völkenrode* 52:187–194.
- Spink, J., R. Hackett, D. Forristal & R. Creamer. 2010. Soil organic carbon: A review of ‘critical’ levels and practices to increase levels in tillage land in Ireland. <http://www.teagasc.ie/publications/2010/982/SoilOrganicCarbon.pdf>. Accessed 20 February 2014.
- Stebek, E. N. 2012. The investment promotion and environment protection balance in Ethiopia’s floriculture: The legal regime and global value chain. A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy (PhD) in Law, University of Warwick School of Law. http://wrap.warwick.ac.uk/56244/1/WRAP_THESIS_Nour_2012.pdf Accessed 27 January 2016
- Stige, L. C., J. Stave, K. Chan, L. Ciannelli, N. Pattorelli, M. Glantz, H. Herren & N. Stenseth. 2006. The effect of climate variation on agro-pastoral production in Africa. *Proceedings of the National Academy of Sciences (PNAS) of the United States of America* 103 (9): 3049–3053.
- Storck, H., B. Adenew, B. Emanu, A. Birowiecki & S.W. Hawariate, 1991. Farming system and farm management practices of smallholders in the Hararge highlands. *Farming systems and resource economics in the tropics*, Vol. II. Kiel: Wissenschafts Vavk.
- Tacoli, C. & D. Satterthwaite. 2003. The urban part of rural development: The role of small and intermediate urban centres in rural and regional development and poverty reduction. *Rural-Urban Interactions and Livelihood Strategies Working Paper 9*. London: International Institute for Environment and Development.
- Teshale, T. 1995. *The making of modern Ethiopia: 1896-1975*. Trenton: Red Sea Press, Inc.
- TGE 1991. *Ethiopia’s Economic policy during the transitional period*. The Transitional Government of Ethiopia (TGE), Addis Ababa, Ethiopia.
- The Reporter. 2013. Residents in Gambella Set Indian-Owned Farm on Fire, *The Reporter*, 26 October / <http://www.thereporterethiopia.com/index.php/news-headlines/item/1168-residents-in-gambella-set-indian-owned-farm-on-fire> Accessed 29 October 2013
- The Irish Times. 2015. Ethiopia heading for worst drought in decades. <http://www.irishtimes.com/news/world/africa/ethiopia-heading-for-worst-drought-in-decades-1.2410315> Accessed 31 October 2015.

- The Reporter. 2014. Foreclosure notice forces Karuturi to pay off 25 percent debt. <http://www.thereporterethiopia.com/index.php/news-headlines/item/2105-foreclosure-notice-forces-karuturi-to-pay-off-25-percent-debt> Accessed on 4 November 2014.
- Thurow, L. 1969. Poverty and discrimination, Washington: Brookings Institution.
- Tilahun, G. 2007. Soil fertility status as influenced by different land Uses in Maybar areas of South Wello zone, north Ethiopia. MSc thesis. Haramaya: Haramaya University. http://www.cde.unibe.ch/CDE/pdf/Gebeyaw%20Tilahun_MSc%20Thesis.pdf. Accessed 19 Feb 2014.
- Tirfe, M. 1999. The paradox of Africa's poverty: The role of indigenous knowledge, traditional practices and local institutions – the case of Ethiopia. Lawrenceville: The Red Sea Press, Inc.
- TNRS. 2006. Rural land administration and use proclamation no.97/2006 of Tigray National Regional State (TNRS), Mekelle, Ethiopia.
- Todd, P. 2006. Evaluating social programs with endogenous program placement and self selection of the treated," forthcoming in the Handbook of Development Economics, Volume 4.
- Tybout, J. R. 2000. Manufacturing firms in developing countries: How well do they do, and why? *Journal of Economic Literature* 38: 11–44.
- Uchida, R. 2000. Essential Nutrients for Plant Growth: Nutrient Functions and Deficiency Symptoms. In *Plant Nutrient Management in Hawaii's Soils, Approaches for Tropical and Subtropical Agriculture*, eds. J.A. Silva and R. Uchida, 31–55. Hawaii: College of Tropical Agriculture and Human Resources, University of Hawaii.
- Unger, S. & T. Chagomoka. 2014. Food insecurity and coping strategies along the urban-rural continuum in Tamal. A paper presented at bridging the gap between increasing knowledge and decreasing resources, 17–19 September 2014, Prague: Czech Republic.
- UNIDO. 2010. Making it industry for development: Wind of change? *Quarterly Magazine*, Number 2, Vienna International Centre, Austria.
- United Nations Economic Commission for Africa (UN-ECA). 2014. The next decade of land policy in Africa: Ensuring agricultural development and inclusive growth. A conference on *Land Policy in Africa* held between 11-14 November 2014, Addis Ababa, Ethiopia.
- United Nations. 1975. Report of the World Food Conference, Rome 5-16 November 1974. New York.
- United Nations. 2013. World population prospects, the 2012 revision: Key findings and advanced tables. Department of Economic and Social Affairs, Population Division. ESA/PWP. 227. New York: United Nations.
- UNOCHA (UN Office for the Coordination of Humanitarian Affairs in Addis Ababa). 2015. Ethiopia: Humanitarian Snapshot. http://reliefweb.int/sites/reliefweb.int/files/resources/hum_snapshot_jun15.pdf Accessed on 19 August 2015.
- van Camp, L., B. Bujarrabal, A. Gentile, R. Jones, R. J. A. Montanarella, L. Olazabal and S. K. Selvaradjou. 2004. *Reports of the Technical Working Groups Established under the Thematic Strategy for Soil Protection. EUR 21319 EN/4*. Luxembourg: Office for Official Publications of the European Communities.
- van der Veen, A. & G. Tagel. 2011. Effect of policy interventions on food security in Tigray, Northern Ethiopia. *Ecology and Society* 16(1): 18. [online] URL: <http://www.ecologyandsociety.org/vol16/iss1/art18/>

- van Santen, C. 2011. The regime of emperor Haile Selassie (1930-1974).
http://www.cvsanten.net/index.php?option=com_content&view=article&id=78&Itemid=81&limitstart=6 Accessed 29 May 2013.
- van Zyl, J., H. Binswanger & C. Thirtle. 1995. The Relationship between Farm Size and Efficiency in South African Agriculture. *Policy Research Working Paper No. 1548*, The World: Bank: Washington DC.
- Vath, S. & M. Kirk. 2011. Linkages between investors and the local population: Evidence from the oil palm sector. Paper presented at the World Bank's Land and Poverty conference, Washington. April 18-20.
- Vhugen D. 2010. Large-scale commercial investments in land: Seeking to secure land tenure and improve livelihoods. *Haramaya Law Review*, 1(1):1–30.
- Via Campesina. 2008. Small farmers feed the world, industrial agrofuels fuel hunger and poverty. Press release, 24 June. Jakarta: La Via Campesina.
<http://viacampesina.org/en/index.php/main-issues-mainmenu-27/biodiversity-and-genetic-resources-mainmenu-37/546-small-farmers-feed-the-world-industrial-agrofuels-fuel-hunger-and-poverty> Accessed 17 September 2014.
- Vidal, J., 2008. The great green land grab. *The Guardian*.
<http://www.guardian.co.uk/environment/2008/feb/13/conservation> Accessed 5 November 2012.
- Von Braun, J. & R. Meinzen-Dick. 2009. "Land grabbing" by foreign investors in developing countries: Risks and opportunities. *IFPRI Policy Brief 13*, International Food Policy Research Institute (IFPRI), 2020 Vision Initiative, Washington Dc.
- WBISPP (Woody Biomass Investment Strategic Plan and Program) (2001). A strategic plan for the sustainable development, conservation and management of the wood biomass resource. Gambella Regional State, Ethiopia.
- Weissleder, L. 2009. Foreign direct investment in the agricultural sector in Ethiopia. Ecofair trade dialogue discussion papers No. 12.
https://www.boell.de/sites/default/files/assets/boell.de/images/download_de/ecology/FDIs_Ethiopia_15_10_09_c_1.pdf Access 15 December 2010.
- Wells, J. C. 1974. Agricultural policy and economic growth in Nigeria, 1962-68. Ibadan: Oxford University Press.
- Wendimu, M.A., A. Henningsen & P. Gibbon. 2015. Sugarcane outgrowers in Ethiopia: 'Forced' to remain poor? *IFRO Working Paper*
http://okonomi.foi.dk/workingpapers/WPpdf/WP2015/IFRO_WP_2015_06.pdf Accessed on 8 September 2015.
- White, H. 2002. Combining qualitative and quantitative approaches in poverty analysis. *World Development*, 30(3): 511-522.
- White, B., and A. Dasgupta. 2010. Agrofuels capitalism: A view from political economy. *Journal of Peasant Studies* 37(4): 593–607.
- Wiggins, S. 2009. Can the smallholder model deliver poverty reduction and food security for a rapidly growing population in Africa? *FAC Working Paper No. 08*.
http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/2338/FAC_Working%20Paper_08.pdf?sequence=1 Accessed 30 October 2015.
- Wilkins, M. 2008. The history of the multinational enterprise. In: Rugman, A. M (ed.), *The Oxford handbook of international business*. Oxford: Oxford University Press.

- Woldemichael, B. 2013. The Government's food security programme. In: Pankhurst, A. D. Rahmato and J. van Uffelen (eds), *Food security, safety nets and social security in Ethiopia*. Addis Ababa: Forum for Social Studies (FSS).
- Woodhouse, P. 2012. New investment, old challenges. Land deals and the water constraint in African Agriculture. *Journal of Peasant Studies*, 39(3-4):777–794.
- Woodroffe, R. 1996. Omo Gibe River Basin Integrated Development Master Plan. Vol. VII Land Resources survey. Ministry of Water Resources, Addis Ababa, Ethiopia.
- Worku, I. 2011. Road sector development and economic growth in Ethiopia. *EDRI Working Paper 4*, Ethiopian Development Research Institute (EDRI), Addis Ababa, Ethiopia
- World Bank, FAO, IFAD and UNCTAD, 2010. Principles for Responsible Agricultural Investment that Respect Rights, Livelihood and Resources. A discussion note prepared by FAO, IFAD, UNCTAD and the World Bank. World Bank. 2013. Productive Safety Net Project <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/0,,contentMDK:21072837~menuPK:1804110~pagePK:146736~piPK:146830~theSitePK:258644,00.html> Accessed on 10 October 2014.
- World Bank. 1986. Poverty and Hunger: Issues and options for food security in developing countries. Washington DC.
- World Bank. 2000. Can Africa claim the 21st Century? The World Bank: Washington, D.C.
- World Bank. 2004. Four Ethiopias: A regional characterization and assessing Ethiopia's growth potentials and development obstacles. A background report to Ethiopia: Country Economic memorandum, May 24th 2004. Addis Ababa, Ethiopia.
- World Bank. 2007. Agriculture for development: World development report 2008. The World Bank, Washington D.C.
- World Bank. 2008. Ethiopia: Agriculture and rural development public expenditure Review (1997/98 – 2005/06). Report No. 41902-ET, Washington D.C: The World Bank.
- World Bank. 2009. Global economic prospects - Commodities at the crossroads, Washington DC.
- World Bank. 2013. Productive Safety Net Project (PSNP) <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/0,,contentMDK:21072837~menuPK:1804110~pagePK:146736~piPK:146830~theSitePK:258644,00.html> Accessed 10 October 2014.
- World Food Programme. 2012. Ethiopia: Productive Safety Net Program (PSNP). <https://www.wfp.org/sites/default/files/PSNP%20Factsheet.pdf> Accessed on 10 October 2014.
- Woube, M. 1999. Flooding and sustainable land-water management in the lower Baro–Akobo river basin, Ethiopia. *Applied Geography*, 19: 235–251.
- Yeraswork, A. 2000. Twenty years to nowhere: Property rights, land management and conservation in Ethiopia. Lawrenceville, NJ/Asmara: Red Sea Press.
- Zaibet, L. and E.J. Dunn. 1998. Land Tenure, Farm Size, and Rural Market Participation in Developing Countries: The Case of the Tunisia Olive Sector. *Economic Development and Cultural Change*, 46 (4): 831–48.
- Zewde, B. 2008. Environment and capital: Notes for a history of the Wonji-Shoa sugar estate (1951–1974). In: Zewde, B. (ed), *Society, State and History: Selected Essays*, Addis Ababa, Ethiopia: Addis Ababa University Press.
- Zoomers, A. & M. Kaag. 2014. Conclusion: beyond the global land grab hype – ways forward in research and action. In: A. Zoomers & M. Kaag (eds), *Beyond the hype: Land grabbing in Africa*, London: Zed Books.

Zoomers, A., 2010. Globalization and the foreignisation of space: Seven processes driving the current global land grab. *Journal of Peasant Studies*, 37(2), 429–447.

Zoomers, A., A. Gekker & M. T. Schäfer. 2015. Between two hypes: Will "big data" help unravel blind spots in understanding the "global land rush?". *Geoforum*.
<http://dx.doi.org/10.1016/j.geoforum.2015.11.017>

Annexes

Annex 1.1: Distribution of household population in Bako Tibe district, Oromia regional state

Name of Kebele	Household population (N _i)	Category	Sample size (n _i)
Baca Ode Walde	931	Affected	142
Oda Gibe	531	Non-affected in 2012 but affected in 2014	75
Tirkafeta Gibe	592	Non-affected	83
Oda Korma	411	Non-affected	0
Amarti Gibe	852	Non-affected	0
	3317		300

Source: Bako Tibe District Agricultural and Rural Development Office, 2011

Annex 1.2: Distribution of settlers household population in Abobo District, Gambella regional state

Village name	Household population (N _i)	Category	Sample size (n _i)
Mender 7	198	Affected	23
Mender 8/9	423	Affected	49
Mender 11/12	233	Not-affected ⁷⁰	0
Mender 13	245	Affected	28
Mender 14	217	Not-affected	65
Mender 17	203	Not-affected	60
Total	1519		225

Source: Abobo District Agriculture Office, 2013

⁷⁰ Mender 11/12 though not affected by Basen farm, there is another domestic farm operating near to it which might bring a biased estimate of impact. Hence, excluded as target population for the data collection

Annex 1.3: Matching algorithms

1. The Nearest Neighbour Matching (NN): the NN picks each treated unit and searches for its match in the control group with its closest propensity scores. This could be done with replacement or without replacement; in the former case, a single control unit could be used several times the closest match to the treated unit. In this study, NN without replacement is applied. The Average Treatment Effect on the Treated (ATT) is then computed as the average outcome difference between all treated and control units that are matched based on their propensity scores. In the case of NN, all treated units will get matches from the control units. But in effect, however, some of the nearest neighbour in the control units might have propensity scores different from the propensity scores of the treated units.

2. Radius Matching (RM): the RM overcomes the drawbacks of NN by specifying the propensity score of nearest neighbour within some radius limits. In the RM each treated unit is matched to the control unit whose propensity score falls within a predefined radius limit. If the radius is set too small, the criteria would be very stringent and some treated units might not get matches from the control units though the quality of the match is high. If the radius is set too big, the ATT would be a biased estimate. The default radius is 0.01 unit.

3. Kernel Matching (KM): in KM, all treated units are matched with a weighted average of the propensity scores of all units from the control category with weights that are inversely proportional to the distance between the propensity scores of treated and control units.

4. Stratification Matching (SS): it divides the propensity scores in an interval and matches treated and control units that have propensity scores falling in that interval. Then the ATT is calculated as the difference between the average outcomes of the treated and the controls falling in that propensity interval. One of the shortcomings of SS is it discards observations in the blocks either of the treated or control units are missing. In effect, it might underestimate the ATT. For details of the different matching algorithms, see Becker and Ichino (2002), Heinrich *et al.* (2010) and Khandker *et al.* (2010).

Annex 3.1: Land Lease Tariff in Ethiopia

Distance of the land from Gedarfi port (Km)	Land rent value (ETB/ha)
Starting point	880.42
100	805.42
150	767.92
200	730.42
250	692.92
300	655.42
350	617.92
400	580.42
450	542.92
500	505.42
504	502.42

Source: MoARD (2010)

Annex 3.2: Lists of duty free imports by Karuturi Agro-products PLC (Oromia and Gambella farms)

Reference #	Date	Bill of Loading	Type of import	Quantity
KAP/436/11	11/MAY/11	2300907	ECW-150/260-BG,200X150 SIZE, 1450 rpm COUPLED WITH 30 KVA AL DIESEL ENGIEN, 50 Hz	23
			PROMOTIANAL ITEM - ORGANIZER	25
		2300929	ECM-300/320-BG, 300X300 SIZE,1450rpm, coupled with 62.5 kva AL DIESEL ENGIEN, 50Hz and accessories	10
			ECM-200/320-BG,250X200 SIZE,1450rpm, coupled with 62.5 kva AL diesel engien,50Hz and accessories	22
			ECW -150/260-BG,200X150 SIZE,1450 rpm coupled with 30 kva AL diesel engine ,50Hz and accessories	25
KAP/511/11	03/JUNE/11	08/KGL/11-12	Silencer &connecting pipe for 30kva &62.5kva ashok leyland engine (CRI PUMPS)	80
			Nuts, bolts &washer	55kg
			Packing kit	160
		04/KGL/11-12	LDPE NURSERY BAGS 6 inches (15cms)x 9 inches (23cm) with 300 gauge	2000kg
			LDPE nursery bags 15 inches (38cm) x 18 inches(26cm) with 600 gauge	16000kg
KAP/432/11	28/MAY/11	SHORTAGE 1	PLNTR CNTRL OUTPUT MODULE (POM)	1
			DJ SWITCH SPDT W/WISKER & WIRE	1
			DJ HALL EFFECT SPEED SENSOR CP	1
			NUT HEX JAM 3/4-10 PLT	2
			HOSE 1 ID 200PSI EPDM	12
			CLAMP WRM DRV 16 SS(68-1.5)	8
			25 S BULK FILL COVER SUB ASY	1
			HH3/8R2 360 9/16F JIC 3/4 MORB	2
			CABLE TIE 19X7.25 1.75D 50 LD	300
			CABLE TIE 19X14.25 3DIA 50 LD	100
			SNAP RING 875	25
			LUXURY Swiss cottage tent	6
			Executive safari tent	4
			Army troop tent supervision	4
			Toilet cum bathroom tent	6
			Dining tent	2
			Kitchen tent	1

KAP/321/11	28/APR/11	40/KGL/10-11	Bath tray	6	
			LUXURY Swiss cottage tent	4	
			Executive safari tent	2	
			Army troop tent supervision	2	
			Army troop tent supervision	2	
KAP/402/11	14/MAY/11	11-12/EX-3019	PVC 3 core flat cable submersible cables(3cx 10 sQMM)	5000	
			PVC 4 core flat cable submersible cables(4c x 25 Sqmm,4c x 50 SQ MM, 4C X 70 SQ MM)	5907	
KAP/401/11	14/MAY/11	46/KGL/10-11	Wheel loader's model types LG956L	5	
			40" HC containers(soc)	5	
KAP/404/11	23/MAY/11	GP11153-63	2 S yeild pro planter 31- row	11	
KAP/400/11	11/MAY/11	D357977	608C STALKMASTER 8 row chopping corn head	2	
			75cm row spacing	2	
			temporary surface rust/corrosion protection	2	
		D357982	630R -30 FT. rigid cutting platform	2	
			Auger with hard faced fliting and full width steel fingers	2	
			poly tine pickup real	2	
			temporary surface rust/corrosion protection	2	
			D357973	608C stalkmaster 8 row chopping corn head	2
			75 cm row spacing	2	
			temporary surface rust/corrosion protection	2	
			D358215	630R -30 FT.rigid cutting platform	2
				Auger with hard faced fliting and full width steel fingers	2
		poly tine pickup real		2	
		temporary surface rust/corrosion protection		2	
		D357984	630R -30 FT.rigid cutting platform	2	
			Auger with hard faced fliting and full width steel fingers	2	
			poly tine pickup real	2	
			Temporary surface rust/corrosion protection	2	
		D357961-80	608C stalkmaster 8 row chopping corn head	4	
			75 cm row spacing	4	
			Temporary surface rust/corrosion protection	2	

			608C stalkmaster 8 row chopping corn head	2
		D358929	630R -30 FT.rigid cutting platform	2
			Auger with hard faced fliting and full width steel fingers	2
			poly tine pickup real	2
			temporary surface rust/corrosion protection	2
KAP/388/11	11/MAY/1 1	D357447	4930 SELF PROPELLED SPRAYER(modal year 2011)	1
			380/105R50 IN 168AB R1 OR R1W RADIAL	1
			2X1.1/2 IN STANDARED FLOW SOLUTION PUMP	1
			CHEMICAL EDUCTOR	1
			120FT BOOM HIGH FLOW 1 IN STAINLESS STEEL PIPE 15 IN ON CENTER NOZZEL	1
			LESS BOOM TRAC	1
			LOAD COMMAND READY	1
			LESS FOAM MARKER	1
			COMMON VIEW CAB GREEN STAR AUTO TRAC READY WITH PLUG AND PLAY INCLUADING FACTORY	1
			WHEEL SLIP CONTEROL	1
			UNDERFRAME SHIELD -MACHINES WITH OUT LOAD COMMAND	1
			FIELD VISION XENON HID LIGHTING PACKEGA	1
			AFRIC INCLUDES TEXT FREE DECALS AND ENGLISH OPRETER MANUAL .LESS RADIO	1
KAP/375/11	10/MAY/1 1	110304	620/70 X42 INNER TUBE	1
KAP/375/11	11/MAY/1 1	10/KGL/10-11	VOLVO CREWLER EXCAVATER MODEL EC210 B	10
			710/ 70 X 42 INNER TUBE	1
			12.5 L -15 TUBE	1
KAP/138/11	09/MAY/1 1	09/KGL/11-12	VOLVO & BEML SPERA PART	0
KAP/324/11	28/APR/11	D357213	4930 SELF-PROPELLED SPRAYER(modal year 2011)	2
KAP/299/11	27/APR/11	A0141201	YAHAMA MOTORCYCLES	8

KAP/328/11	03/MAY/11	37/A/KGL/10-11	TRACTORS SPARE PART(TOP LIK (13)AND SIDE LINK LH(3))	16
			PLANTER SPARE PART	25
KAP/321/11	28/APR/11	43/KGL/10-11	ASHOK LEYLAND ELECTRIC GENERATING SET	12
KAP/265/11	11 APR/11	44/KGL/10-11	VOLVO CRAWLER EXCAVATER MODEL EC210 B	7
		39/KGL/10-11	WHEEL LOADER'S	10
			40" HC CONTAINERS	10
		EXP-482-I	ROPS CABIN,MULTI SHANK RIPPER AND HYDROLIC TANK FOR BEML BD65 BULLDOZER	5
		EXP-482-II	BD65 BULLDOZER FITTED WITH BEML ENGINE MODAL BS 125-1 DIESEL ENGINE HAVING HP OF 180@1859 RPM FITTED ANGLE BLADE WITH ROPS CABIN AND MULTI SHANK RIPPER	5
EXP-482-III	BD65 BULLDOZER FITTED WITH BEML ENGINE MODAL BS 125-1 DIESEL ENGINE HAVING HP OF 180@1859 RPM FITTED ANGLE BLADE WITH ROPS CABIN AND MULTI SHANK RIPPER	5		
KAP/111/04/11	4 /APR/11	GP11164-167	2 S yeild pri planter 31- row	4
KAP/215/11	29/MAR/11	ETH11-008	9770 STS RICE COMBINE	8
KAP/125/11	07/MAR/11	36/KGL/10-11	TRACTOR SPARE PART, RAJDOOT SPARES &JCB HOSEPIPES	586
KAP/231/10	15/JAN/2011	EXP-482	BD65 BULLDOZER FITTED WITH BEML ENGINE MODAL BS 125-1 DIESEL ENGINE HAVING HP OF 180@1859 RPM FITTED ANGLE BLADE EXCLUDING ROPS CABIN AND MULTI SHANK RIPPER	5
EM/932/10	14/DEC/11	32/KGL/10-11	VOLVO CRAWLER EXCAVATOR MODEL EC210 B	8
		PL100299	TOYOTA HILUX PICK UP D/CABIN,4WD	5
KAP/657/10	03/NOV/10	131549	4-710 X42 WHEELS AND TYRES	1
			4-380 X34 WHEELS AND TYRES	1
			8-710 X42 WHEELS AND TYRES	1
KAP/657/10	03/NOV/10	18/KGL/10-11	TRACTOR MOUNTED SPREYERS(HTT 50)	20
KAP/F12+F129/11	4/FEB/2011	GP10088	VERTIY TILL 4-SHANK	2
		GP10089	VERTIY TILL 4-SHANK	1
			DITCHER 55 SERIES	7
			VT4360 REPAIR PART KIT	5
Kap/406/11	23/May/2011	03/KGL/11-12	RAJDOOT DIESEL ENGINE PUMP SPARES AND RAJDOOT DIESEL GENERATER SPARES	2340

			5 ROW RIDGE PLANTER FOR MAIZE SOWING ROW TO ROW SPACE 24"	12
			5 ROW RIDGE PLANTER FOR MAIZE SOWING ROW TO ROW SPACE 24"	12
kap/521/10	03/Oct/10	D339651	17'6" MULCH RIPPER	15
		D325450	9430 425TRACTOR RILL	5
			9530 475HP TRACTOR RIL	10
KAP/233/10	8/MAR/10	77/kg1/09-10	6-ROW MAIZE PLANTER	16
KAP/235/10	31/MAR/10	81/KGL/09-10	FOUR DISC PLOUGH	25
		80/KGL/09-10	TRACTOR MOUNTED SPRAYER	5
KAP/277/10	03/MAR/10	B325450	9430 425HP TRACTOR RILL	5
			9530 475HP TRACTOR RIL	10
KJO/6438/14 69/02	26/05/2002E C	SPI/EXP/103/09- 10	RIGID PVC PIPES /FITTING	0
KAP/198/06/ 11	20/JUNE/11	962 E 006	113HM011027 HYDROLIC PUMP	1
ET/VH /00106/2011	AUG 1/2011	UT/VHP/INV/00 4 11-12	TOYOTA PICKUP	1

Data source: AILA

Annex 3.3: Lists of duty free imports by S & P Energy Solution

Reference #	Date	Bill of Loading	Type of import	Quantity
SPES/MOARD-377	13/JUNE/11	113396 AND 113398	SPREYR UG 3000 UNBREAKEY	2
SPES/MOARD-333	09/MAY/11	6.2E+09	TRACTOR	2
SPES/MOARD-334	09/MAY/11	2011-066	DISC HARROW MODEL VSL 200-810/26	1
SPES/MOA-269	12/APR/11	6.2E+09	TRACTOR MODAL "XERION 3800 TRAC"-TYPE 781-250	2
SPES/MOA-269	12/APRI/11	F0039/11	TATA LPT1618TC/52 LHD LOAD BODY	1
SPES/MOARD-264	07/APRI/11	2061	DIGITAL SOIL PH METER MODEL ; - PH -220 S	1
			DIGITAL SOILMOISTURE METER MODEL ; - PMS -714	1
			DIGITAL ELECTRONIC WEATHER STATION MODEL ; - WS-2800-IT	1
			ANALOGUE SOIL PH /MOISTURE METER ZD-06-SAMPLE	1
SPES/MOA-266	11/APRI/11	533437	MOTOR CHAINSAWS AND SPERE PARTS	
SPES/IBA-153	08/FEB/11	PM/179/C/10	CATAPILLAR MODAL D8R TRACK TYPE TRACTOR OF 305 HP	2
2837	13/MAY/10	Not available	TOYOTA LANDCROSUR	1
			TOYOTA PICKUP HILUX	1
SPES/MOARD-383	15/JUN/11	2205011	ROTARY CALTIVARE MODEL-KG 6000-2	1
			AIR PLANTER MODEL;ED 602-K	3
			AIR PLANTER MODEL;ED 302	2
			FERTILIZER SPREADER MODEL-ZA-M 2201	2

Source: AILAA (2012)

Annex 4.1: Determinants of wage in plantation agriculture (Interaction between schooling and experience, and experience squared included as variables)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.939 ^a	.882	.877	.25239

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	118.685	10	11.868	186.320	.000 ^a
	Residual	15.861	249	.064		
	Total	134.546	259			

a. Predictors: (Constant), Experience_Squared, Type of crop, Education level, Type of work, Sex of the employee, Age of the employee, Origin, Location of the farm, Schooling_Experience, Years of experience

b. Dependent Variable: lnWage_Day

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.463	.090		27.436	.000		
	Sex of the employee	.084	.037	.054	2.296	.023	.841	1.190
	Education level	.022	.005	.105	4.075	.000	.711	1.407
	Origin	-.125	.063	-.086	-1.996	.047	.252	3.962
	Type of work	.170	.041	.100	4.175	.000	.824	1.214
	Location of the farm	1.071	.064	.721	16.673	.000	.253	3.952
	Age of the employee	.001	.002	.013	.487	.627	.669	1.496
	Type of crop	.155	.055	.085	2.834	.005	.524	1.908
	Schooling_Experience	4.699E-5	.002	.002	.028	.978	.152	6.559
	Years of experience	.026	.018	.119	1.430	.154	.069	14.556
	Experience_Squared	.001	.001	.065	.978	.329	.108	9.299

a. Dependent Variable: lnWage_Day

Annex 5.1: Food basket that gives 2200 kcal per adult equivalent per day for cereal-based farming rural areas of Ethiopia

No	Food item	Quantity
A	<i>Cereals (in Kg)</i>	
A.1	Teff	1.63
A.2	Barley	4.24
A.3	Maize	3.82
A.4	Millet	4.53
B	<i>Pulses (in Kg)</i>	
B.1	Lentils	0.35
B.2	Horse beans	1.84
B.3	Cow Peas/Grass Pea	0.35
B.4	Chick peas	0.71
B.5	Shiro	0.92
C.	<i>Vegetables (in Kg)</i>	
C.1	Gomen	0.21
C.2	Onion	0.35
D.	<i>Root Crops (in Kg)</i>	
D.1	Potato	0.14
E.	<i>Other Food Items</i>	
E.1	Milk (lt)	0.49
E.2	Coffee (Kg)	0.57
E.3	Sugar (Kg)	0.14
E.4	Salt (Kg)	1.20
E.5	Cooking Oil (lt)	0.28
E.6	Berbere (Kg)	0.85
E.7	Bread (Kg)	0.14

Source: Adapted from S. Dercon and M. Tadesse (1999, p.89)

Annex 5.2: Nutrition based adult equivalent conversion factors

Age	Male	Female
<1	0.33	0.33
1-2	0.46	0.46
2-3	0.54	0.54
3-5	0.62	0.62
5-7	0.74	0.70
7-10	0.84	0.72
10-12	0.88	0.78
12-14	0.96	0.84
14-16	1.06	0.86
16-18	1.14	0.86
18-30	1.04	0.80
30-60	1.0	0.82
60 and above	0.84	0.74

Source: Dercon, S and P, Krishnan (1998, p.40)

Annex 5.3: Food security coping strategies adopted by households in Bako Tibe district, Oromia regional state

Coping strategy	Weight for severity score ⁷¹					Average Weight	Severity level
	FGD 1	FGD 2	FGD 3	FGD 4	FGD 5		
Eating cheap but less preferred food	1	1	1	1	1	1.0	Least severe
Limit meal portion	2	2	2	2	2	2.0	Moderate
Buy food on credit	2	3	1	3	2	2.2	Moderate
Decrease meal frequency	2	2	3	2	2	2.2	Moderate
Send children to eat with relatives	3	2	4	3	2	2.8	Severe
Borrow food	3	3	4	2	2	2.8	Severe
Consume seeds	3	4	3	3	2	3.0	Severe
Skip eating whole day	4	4	4	3	4	3.8	Most severe

Source: FGD conducted in Bako Tibe district on 03, 04 and 06 April 2012

⁷¹ **Note:** Severity score is measured as follows: 4=Most severe 3=Severe 2=Moderate; and 1=Least severe

Annex 5.4: Mean weighted CSI score adopted by affected and non-affect households before (2012) and after (2014) Karuturi's intervention, Bako Tibe district, Oromia regional state

Coping strategy	Weighted mean CSI score for affected households (n=75)			Weighted mean CSI score for non-affected households (n=83)		
	Before (2012)	After (2014)	% change	Before (2012)	After (2014)	Change
Eating cheap but less preferred food	0.04	0.08	50.0%	0.03	0.035	14.3%
Limit meal portion	0.03	0.16	81.2%	0.04	0.042	4.8%
Buy food on credit	0.02	0.22	90.9%	0.03	0.032	6.3%
Decrease meal frequency	0.01	0.16	93.8%	0.02	0.021	4.8%
Send children to eat with relatives	0.02	0.32	93.8%	0.01	0.01	0%
Borrow food	0.02	0.33	93.9%	0.02	0.02	0%
Consume seeds	0.01	0.27	96.3%	0.01	0.01	0%
Skip eating the whole day	0.01	0.27	96.3%	0.01	0.01	0%
Overall weighted mean CSI score	0.16	1.81	91.2%	0.17	0.18	5.6%

Source: Household survey, 2012 and 2014

Annex 5.5: Food security coping strategies adopted by the settlers and their severity weights in Abobo district, Gambella regional state

Coping behavior/strategies	Weight for severity scores					Average weight	Severity level
	FGD 1	FGD 2	FGD 3	FGD 4	FGD 5		
Reducing meal portion	1	1	1	1	1	1	Least severe
Requesting emergency food aid	3	3	3	3	3	3	Severe
Reducing portion and frequency of meal	3	3	2	3	3	2.8	Severe
Borrowing food from neighbors/relatives	2	2	3	2	2	2.2	Moderate
Skip eating the whole day	4	4	4	4	4	4	Most severe
Hunting and eating game meat	1	1	1	1	1	1	Least severe
Consuming seed stock	4	4	4	4	4	4	Most severe

Source: FGD conducted in Abobo district on February 8, 2013

Annex 5.6: Mean weighted CSI score adopted by affected and non-affected households in Abobo district, Gambella regional state

Coping behavior	Weighted mean CSI score	
	Affected households	Non-affected households
Reducing meal portion	0.22	0.76
Requesting emergency food aid	0.86	0.25
Borrowing food from neighbors/relatives	0.70	0.35
Reducing portion and frequency of meal	1.00	0.30
Skip eating the whole day	0.60	0.11
Hunting and eating game meat	0.50	0.40
Consuming seed stock	0.32	0.01
Weighted overall mean CSI score	4.20	2.18

Source: Household survey data, 2013

Annex 5.7: Food security coping strategies adopted by the Anuak and their severity weights in Ilia village, Gambella regional state

Coping behavior/strategies	Weight for severity scores					Average Weight	Severity level
	FGD 1	FGD 2	FGD 3	FGD 4	FGD 5		
Reducing portion of the meal	2	2	2	2	2	2	Moderate
Reducing portion and frequency of meals	3	3	3	3	3	3	Severe
Looking for food aid	1	1	1	1	1	1	Least severe
Eating with or borrowing food from neighbors/families	1	1	1	1	1	1	Least severe
Skip eating	4	4	4	4	4	4	Most severe
Temporary migration to neighboring areas to search foods from the forest	3	3	3	3	3	3	Severe

Source: FGD conducted in Ilia village on March 10, 2013

Annex 5.8: Mean weighted CSI score adopted by affected and non-affected Anuak households in Gambella regional state

Coping behavior/strategies	Weighted mean CSI score for affected households	Weighted mean CSI score for non-affected households
Reducing portion of the meal	0.41	0.70
Reducing portion and frequency of meals	1.12	0.10
Looking for food aid	0.32	0.22
Eating with or borrowing food from neighbors/families	0.50	0.92
Skip eating	0.53	0.15
Temporary migration to neighboring areas to search foods from the forest	1.22	0.01
Weighted overall mean CSI score	4.1	2.1

Source: Household survey, 2013

Annex 5.9: Food security coping strategies adopted by the Nuer and their severity weights in Makuey district, Gambella regional state

Coping behavior	Weight for severity scores					Average Weight	Severity level
	FGD 1	FGD 2	FGD 3	FGD 4	FGD 5		
Reducing portion of the meal	2	2	3	2	2	2.2	Moderate
Reducing frequency and portion of meal	4	3	3	3	3	3.2	Severe
Eating with or borrowing food from neighbors/families	1	1	1	1	1	1	Least severe
Seeking emergency food aid	3	3	3	3	4	3.2	Severe
Skip eating	4	4	4	4	4	4	Most severe
Consuming seed stock put aside for next planting season	3	3	2	3	3	2.8	Severe

Source: FGD conducted in Bildak village on March 29 2013

Annex 5.10: Mean weighted CSI score adopted by affected and non-affected Nuer households in Gambella regional state

Coping behavior	Weighted mean CSI score for affected households	Weighted mean CSI score for non-affected households
Reducing portion of the meal	0.61	0.62
Reducing frequency and portion of meal	0.22	0.11
Eating with or borrowing food from neighbors/families	0.75	0.72
Seeking emergency food aid	0.27	0.25
Skip eating	0.15	0.11
Consuming seed stock put aside for next planting season	0.33	0.31
Weighted overall mean CSI score	2.33	2.12

Source: Survey data, 2013

Annex 5.11: Food insecurity coping strategies adopted by households in Dangur district, Benshanguel Gumuz regional state

Coping strategy	Weight for severity scores					Average weight	Severity level
	FGD 1	FGD 2	FGD 3	FGD 4	FGD 5		
Buy food by borrowing money	1	1	2	1	1	1.2	Least severe
Borrow food and/or eat with neighbors	1	1	2	1	2	1.4	Least severe
Consume seeds stock	2	2	1	2	2	1.8	Moderate
Limit meal portion	2	2	2	3	2	2.2	Moderate
Decrease meal frequency	3	4	3	3	3	3.2	Severe
Skip eating the whole day	4	4	4	4	4	4	Most severe

Source: FGD conducted in Kota village of Dangur district on April 20 2014

Annex 5.12: Mean weighted CSI score adopted by affected and non-affect households before (2010) and after (2014) S & P Company's intervention, Benshanguel Gumuz regional state

Coping strategy	Weighted mean CSI score for affected households			Weighted mean CSI score for non-affected households		
	Before (2010)	After (2014)	Change	Before (2010)	After (2014)	Change
Buy food by borrowing money	0.28	0.29	1%	0.19	0.27	8%
Borrow food and/or eat with neighbors	0.19	0.20	1%	0.19	0.25	6%
Consume seeds stock	0.34	0.35	1%	0.33	0.34	1%
Limit meal portion	0.34	0.41	7%	0.35	0.36	1%
Decrease meal frequency	0.8	0.93	13%	0.85	0.85	0.0%
Skip eating the whole day	0.07	0.09	2%	0.07	0.07	0.0%
Overall weighted mean CSI score	2.02	2.27	25%	1.98	2.14	16%

Source: Household survey, 2010 and 2014

Annex 5.13: Ranking of income and food sources for the Gumuz in Dangur District,
Benshanguel Gumuz regional state

Income and food sources	Ranking
Cultivation of sorghum	1
Cultivation of sesame	2
Gold mining	3
Collection of root crops and vegetables from the forest ⁷²	4
Collection of honey from wild honey bees	5
Hunting different types of animals	6
Livestock rearing and management	7

Source: Key informants' interview conducted at Kota village on April 23 2014

⁷² This include *echa*, *cici*, *boya* and pumpkin

Annex 6.1: Major companies that acquired land for biodiesel production in Ethiopia (Typology IV)

S.N	Company Name	Country of Origin	Region	Land size (ha)	Year
1	Adventure Ethiopia Agric. Development PLC	China/South Africa/Ethiopia	Amhara	50000	2007
2	Biomassive AB	Sweden	Amhara	100000	2007
3	BDFC Ethiopia Industry	NA	Amhara	18000	NA
4	Ambasel Trading	Ethiopia	Benshanguel	20000	2007
5	S&P Energy Solution	India	Benshanguel	50000	2010
6	Sun Biofuel Eth	UK	Benshanguel	80000	NA
7	Jatropha Biofuels Agro Industry	NA	Benshanguel	100000	NA
8	IDC investment	Denmark	Benshanguel	15000	2007
9	Sisay Yohannes	Ethiopia	Gambella	100000	2008
10	African Climate Exchange PLC	USA/Ethiopia	Multiregional	100000	2005
11	Africa Sustainable Energy Corporation PLC	Netherlands/USA	Multiregional	20000	2006
12	Ertale Bio Diesel PLC	Britain/Ethiopia	Multiregional	50000	2007
13	A.B.S.A Bio-Fuels PLC	South Africa China/Ethiopia	Multiregional	30020	2007
14	Horizon Plantation PLC	Saudi Arabia /Ethiopia	Multiregional	300000	2007
15	OBM Ethio Renewable Energies PLC	Italy/Ethiopia	Multiregional	50000	2008
16	Ardent Energy Group	USA	Multiregional	10000	2008
17	Petropalm Corp-Ethiopia PLC	Austria/USA	Oromia	50000	2009
18	Yehuda Hayun	Israel	Oromia	8000	2007
19	Green Energy plc	Ethiopia	Oromia	50000	2007
20	Flora Ecopower PLC	Germany	Oromia	6148	2008
21	J.M.B.O Bio Fuel Production PLC	USA/Ethiopia	Oromia	2000	2008
22	Soubra Abdallah Khalid	Lebanon	Oromia	10000	2008
23	Emami Bioteck	India	Oromia	11000	2009
24	Petro Palm Corporation Ethiopia	NA	Oromia	50000	NA
25	VATIC International Business	NA	Oromia	20000	NA
26	Etan Biofuels	Ethiopia	SNNPR	5550	2007
27	Getachew Mulugeta	Ethiopia	SNNPR	25000	2007
28	2A 2S International Business PLC	Ethiopia	SNNPR	60000	2007
29	F.E.P.E.Amaro Bio-Oil PLC	Cyprus/Israel	SNNPR	50000	2008
30	Gereth Modular Fuel & Energy PLC	Germany	SNNPR	5000	2009
31	Global Energy Ethiopia	NA	SNNPR	2700	NA
32	Omo Sheleko Agro Industry	NA	SNNPR	5500	NA
33	Fri-el Green	Italy	SNNPR	30000	2006
34	Agro-Peace Bio Ethiopia PLC	Israel	Somalia	50000	2009
Total				1,533,918	

Source: Shete and Rutten (2014); NA= Data Not Available

Annex 6.2: State and private owned sugar factories and bio-ethanol targets in Ethiopia (Typology IV)

Sugar Factories	Regional Location	Land size (ha)	Water Source	Production capacity		Expected Employment	Status
				Sugar (t/year)	Ethanol (m ³ /Year)		
Fincha	Oromiya	21000	Finchaa River	270,000	20,000	Data not available (NA)	Completed in 2013
Metehara	Oromiya	11000	Awash River	130,000	12,500	12,500	Completed in 2013
Wonji/Shoa	Oromiya	25022	Awash River	95,000	20,775	NA	Completed in 2013
Tendaho	Afar	50000	Tendaho River	619,000	55,405	50,000	2015
Omo Kuraz	South Omo, SNNPR	175000	Omo River	278,000	26,162	117,131	Kuraz-One is expected to be completed in 2014
Tana Beles	Amhara and Benshanguel	75000	Beles River	726,000	62,481	50,199	Tana Beles one and two factories expected to be completed in 2014
Wolkayit	Tigray	11000	Zarema and Kalema River	284,000	26,750	NA	2015
Kessem	Afar	20000	Kebena River	153,000	12,500	NA	To be completed in 2014
Arjo-Dedessa	Oromiya	28000	Dedissa River	155,520*	NA	NA	90 percent completed
Hiber Sugar	Amhara	6000	Tana Beles	NA	NA	NA	Implementation started
Karuturi	Gambella	15000	Baro River	N A	NA	NA	At nursery stage
Total		330,000					

Source: Shete and Rutten (2014); NA= Data Not Available