

**Markku Kanninen: Publications**

Google Scholar: h-index 56, i10-index 159, 16816 citations (February 2024).

**A Peer-reviewed scientific articles****A1 Journal article (refereed), original research**

1. Yirdaw, E., Kanninen, M., Monge, A. 2023. Synergies and trade-offs between biodiversity and carbon in ecological compensation. *Sustainability* 15, 11930.
2. Camargo, M.C., Sarsfield, R., Kanninen, M., Cashore, T. 2023. The role of private philanthropy in sustainability standards. *Sustainability* 15, 10635.
3. Djoudi, H., Dooley, K., Duchelle, A.E., Libert-Amico, A., Locatelli, B., Balinga, M.B., Colloff, M., Djenontin, N.I., Dirk, C., Duguma, L., Baa, O.E., Fedele, G., Gitz, V., Gorddard, R., Kachamba, D., Kanninen, M., Lavorel, S., Mbow, C., Meybeck, A., Minang, P.A., Mugabowindekwe, M., Munera, C., Pramova, E., Shackleton, S., Sonwa, D., Pinto, L.S., Candotti, S.W. 2022. Leveraging the Power of Forests and Trees for Transformational Adaptation (November 7, 2022). SSRN Preprint <http://dx.doi.org/10.2139/ssrn.4268299>, 1-26.
4. Arvola, A.M., Ha, H.T., Kanninen, M., Malkamäki, A., Simola, N. 2021. Financial Attractiveness of Wood Production in Smallholder Plantations of Central Vietnam in the Context of Developing Carbon Markets. *Journal of Tropical Forest Science* 33, 137-148.
5. Larjavaara, M., Davenport, T.R.B., Gangga, A., Holm, S., Kanninen, M., Tien, N.D. 2019. Payments for adding ecosystem carbon are mostly beneficial to biodiversity. *Environmental Research Letters* 14, 054001.
6. Krisnawati, H., Kallio, M.H., Kanninen, M. 2019. Stand growth scenarios for jabon (*Anthocephalus cadamba* Miq.) plantation management in Indonesia. *Agriculture and Natural Resources* 53, 120-129.
7. Hassan, B.A., Glover, E.K., Luukkanen, O., Kanninen, M., Jamnadass, R. 2019. Boswellia and Commiphora Species as a Resource Base for Rural Livelihood Security in the Horn of Africa: A Systematic Review. *Forests* 10.
8. Córdova, R., Hogarth, N., Kanninen, M. 2019. Mountain farming systems' exposure and sensitivity to climate change and variability: Agroforestry and conventional agriculture systems compared in Ecuador's indigenous territory of Kayambi people. *Sustainability* 11.
9. Camargo, M.C., Hogarth, N.J., Pacheco, P., Nhantumbo, I., Kanninen, M. 2019. Greening the Dark Side of Chocolate: A Qualitative Assessment to Inform Sustainable Supply Chains. *Environmental Conservation* 46, 9-16.
10. Córdova, R., Hogarth, N., Kanninen, M. 2018. Sustainability of Smallholder Livelihoods in the Ecuadorian Highlands: A Comparison of Agroforestry and Conventional Agriculture Systems in the Indigenous Territory of Kayambi People. *Land* 7. Doi: 10.3390/land7020045.
11. Larjavaara, M., Kanninen, M., Ruesta, H.G., Koskinen, J., Kukkonen, M., Käyhkö, N., Larson, A.M., Wunder, S. 2018. Global variation on the cost of increasing ecosystem carbon. *Nature Climate Change* 8, 38-42. Doi 10.1038/s41558-017-0015-7.
12. Malkamäki, A., D'Amato, D., Hogarth, N.J., Kanninen, M., Pirard, R., Toppinen, A., Zhou, W. 2018. A systematic review of the socio-economic impacts of large-scale tree plantations, worldwide. *Global Environmental Change* 53, 90-103.
13. Salih, E.Y.A., Julkunen-Tiitto, R., Lampi, A.M., Kanninen, M., Luukkanen, O., Sipi, M., Lehtonen, M., Vuorela, H., Fyhrquist, P. 2018. Terminalia laxiflora and Terminalia brownii contain a broad spectrum of antimycobacterial compounds including ellagitannins, ellagic acid derivatives, triterpenes, fatty acids and fatty alcohols. *Journal of Ethnopharmacology* 227, 82-96.
14. Räsänen, A., Nygren, A., Monge, A.M., Käkönen, M., Kanninen, M., Juhola, S. 2018. From divide to nexus: Interconnected land use and water management changes shaping risks and vulnerabilities. *Applied Geography* 90, 106-114.
15. Etongo, D., Kanninen, M., Epule, T.E., Fobissie, K. 2018. Assessing the effectiveness of joint forest management in

- Southern Burkina Faso: A SWOT-AHP analysis. *Forest Policy and Economics* 90, 31-38.
16. Etongo, D., Epule, T.E., Djenontin, I.N.S., Kanninen, M. 2018. Land management in rural Burkina Faso: the role of socio-cultural and institutional factors. *Natural Resources Forum* 42, 201-213.
  17. Fahmi, M.K.M., Dafa-Alla, D.-A.M., Kanninen, M., Luukkanen, O. 2018. Impact of agroforestry parklands on crop yield and income generation: case study of rainfed farming in the semi-arid zone of Sudan. *Agroforestry Systems* 92, 785-800.
  18. Yirdaw, E., Kanninen, M., Elfadl, M., Tsegai, D. 2017. Special issue: Drought and Dryland Management – a commentary. *Silva Fennica* 51, 1-2. . Doi: 10.14214/sf.6985
  19. Salih, E.Y.A., Fyhrquist, P., Abdalla, A.M.A., Abdelgadir, A.Y., Kanninen, M., Sipi, M., Luukkanen, O., Fahmi, M.K.M., Elamin, M.H., Ali, H.A. 2017. LC-MS/MS tandem mass spectrometry for analysis of 3 phenolic compounds and pentacyclic triterpenes in 4 antifungal extracts of Terminalia brownii (Fresen). *Antibiotics (Basel)* 6. Doi: 10.3390/antibiotics6040037.
  20. Räsänen, T. A., Juhola, S. K., Monge Monge, A. A., Käkönen, M-N. E., Kanninen, M. T. & Nygren, A. K.. 2017. Identifying mismatches between institutional perceptions of water-related risk drivers and water management strategies in three basin areas. *Journal of Hydrology*. Doi: 10.1016/j.jhydrol.2017.05.040.
  21. Larjavaara, M., Kanninen, M., Alam, S.A., Mäkinen, A., Poeplau, C. 2017. CarboScen: A tool to estimate carbon implications of land-use scenarios. *Ecography* 40. Doi: 10.1111/ecog.02576.
  22. Ravikumar, A., Larjavaara, M., Larson, A., Kanninen, M. 2017. Participatory land use scenarios: where can carbon drive conservation? *Environmental Research Letters* 12(1). Doi: 10.1088/1748-9326/aa5509.
  23. Tegegne, Y.T., Ramcilovic-Suominen, S., Fobissie, K., Visseren-Hamakers, I.J., Lindner, M., Kanninen, M. 2017. Synergies in social safeguards in FLEGT and REDD+ in Cameroon. *Forest Policy and Economics* 75:1-11. Doi 10.1016/j.forpol.2016.11.005.
  24. Fahmi, M.K.M., Sanjak, E.M., Kanninen, M., Luukkanen, O. 2017. Impacts of meteorological drivers and agricultural practices on sorghum, millet and sesame yields in semi-arid lands in Sudan. *Journal of Natural Resources and Environmental Studies* 5, 1-11.
  25. Salih, E.Y.A., Kanninen, M., Sipi, M., Luukkanen, O., Hiltunen, R., Vuorela, H., Julkunen-Tiitto, R., Fyhrquist, P. 2017. Tannins, flavonoids and stilbenes in extracts of African savanna woodland trees Terminalia brownii, Terminalia laxiflora and Anogeissus leiocarpus showing promising antibacterial potential. *South African Journal of Botany* 108, 370-386. doi: 10.1016/j.sajb.2016.08.020.
  26. Etongo, D., Djenontin, I.N.S., Kanninen, M., Glover, E.K. 2017. Assessing use-values and relative importance of trees for livelihood values and their potentials for environmental protection in Southern Burkina Faso. *Environment, Development and Sustainability* 19, 1141-1166.
  27. Malkamäki, A., Toppinen, A., Kanninen, M. 2016. Impacts of land use and land use changes on the resilience of beekeeping in Uruguay. *Forest Policy and Economics* 70, 113-123.
  28. Etongo, D., Djenontin, I.N.S., Kanninen, M., 2016. Poverty and environmental degradation in Southern Burkina Faso: An assessment Based on Participatory Methods. *Land* 5. doi: 10.3390/land5030020.
  29. Tegegne, Y.T., Lindner, M., Fobissie, K., Kanninen, M. 2016. Evolution of drivers of deforestation and forest degradation in the Congo Basin forests: exploring possible policy options to address forest loss. *Land Use Policy* 51:312–324. doi: 10.1016/j.landusepol.2015.11.024.
  30. Chia, E.L., Kalame, F., Kanninen, M. 2016. Exploring Opportunities for Promoting Synergies between Climate Change Adaptation and Mitigation in Forest Carbon Initiatives. *Forests* 7, 24. doi:10.3390/f7010024.

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32. Etongo, D., Djenontin, I.N.S., Kanninen, M., Kalame, F., 2015. Smallholders' Tree Planting Activity in the Ziro Province, Southern Burkina Faso: Impacts on Livelihood and Policy Implications. *Forests* 6, 2655-2677.
33. Negash, M & Kanninen, M. 2015. Modeling biomass and soil carbon sequestration of indigenous agroforestry systems using CO2FIX approach. *Agriculture, Ecosystems and Environment* 203, 147-155.
34. Fahmi, M.K.M., Mohamed, E.S., Kanninen, M., Luukkanen, O., Kalame, F.B., Eltayeb, A.M., 2015. Determinants and constraints of integrating natural acacias into mechanised rain-fed agricultural schemes Sennar State, Sudan. *GeoJournal* 80, 555-567.
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36. Kebede, M., Kanninen, M., Yirdaw, E., Lemenih., M., 2013. Vegetation structural characteristics and influence of topographic factors in the remnant moist Afromontane forest of Wondo Genet, south central Ethiopia *Journal of Forestry Research* 24, (in press).
37. Negash, M., Starr, M., Kanninen, M., Berhe, L., 2013. Allometric equations for estimating aboveground biomass of *Coffea arabica* L. grown in the Rift Valley escarpment of Ethiopia. *Agroforestry Systems* 87, 953–966.
38. Negash, M., Starr, M., Kanninen, M., 2013. Allometric equations for biomass estimation of *Ensete ventricosum* grown in indigenous agroforestry systems in the Rift Valley escarpment of southern-eastern Ethiopia. *Agroforestry Systems* 87, 571-581.
39. Kebede, M., Kanninen, M., Yirdaw, E., Lemenih, M., 2012. Soil Seed Bank and Seedlings Bank Composition and Diversity of Wondo Genet Moist Afromontane Forest South Central Ethiopia. *International Journal of Botany* 8(4), 170-180.
40. Kallio, M., Kanninen, M., Krisnawati, H., 2012. Smallholder teak plantations in two villages in Central Java: Silvicultural activity and stand performance. *Forests, Trees and Livelihoods* 21, 158-175.
41. Kallio, M.H., Kanninen, M., Rohadi, D., 2011. Farmers' timber tree planting activity in Indonesia- case studies in the provinces of Java, Riau, and South Kalimantan. *Forests, Trees and Livelihoods* 20, 191-210.
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45. Donato, D.C., Kauffman, J.B., Murdiyarso, D., Kurnianto, S., Stidham, M., Kanninen, M., 2011. Mangroves among the most carbon-rich forests in the tropics. *Nature Geoscience* 4, 293-297.
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- Role of *Boswellia* and *Commiphora* Species in Rural Livelihood Security and Climate Change Adaptation in the Horn of Africa: Case Study of North-Eastern Kenya. International Journal of Social Forestry 4, 86-112.
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#### **A2 Review article, literature review, systematic review**

1. Hassan, B.A., Glover, E.K., Luukkanen, O., Kanninen, M., Jamnadass, R. 2019. Boswellia and Commiphora Species as a Resource Base for Rural Livelihood Security in the Horn of Africa: A Systematic Review. *Forests* 10.
2. Malkamäki, A., Toppinen, A., Kanninen, M. 2016. Impacts of land use and land use changes on the resilience of beekeeping in Uruguay. *Forest Policy and Economics* 70, 113-123.
3. Räsänen, A., Juhola, S., Nygren, A., Kallio, M., Monge, A.M., Käkönen, M., Kanninen, M. 2016. Climate change, multiple stressors and human vulnerability – a systematic review. *Regional Environmental Change* 16(8): 2291–2302.
4. Marques, M.J., Schwilch, G., Crittenden, S., Lautenburg, N., Mehreteab, T., Stolte, J., Yirdaw, E., Zdruli, P., Evelpidou, N., Pétusdottír, T., Panagopoulos, T., Karkani, A., AsliYilmazgi, Yasemen, Rubio, J.L., Zucca, C., Schmiedel, U., Kanninen, M., Doko, A. 2016. Multifaceted impacts of Sustainable Land Management in drylands, a Review. *Sustainability* 8(2), 177. doi:10.3390/su8020177.

#### **A3 Book section, chapters in research books**

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#### **E Publications intended for the general public**

##### **E1 Popularised article, newspaper article**

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2. Seppälä, J., Kanninen, M., Vesala, T., Ollikainen, M. 2015. Suomi voi käyttää metsiä ilmastoviisaasti

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3. Nepstad, D., Asner, G., Angelsen, A., Artaxo, P., Baethgen, W.E., Boer, R., Brando, P., Bustamante, M., Campbell, B., Canadell, J., Chambers, J., Costa, M., DeFries, R., Fernandes, K., Field, C., Foley, J., Goddard, L., Hergoualc'h, K., Herold, M., Kanninen, M., Martius, C., Matson, P., Murdiyarso, D., Nobre, C., Rosswall, T., Sheil, D., Smith, P., Verchot, L., Victoria, R., Vitousek, P. 2014. Scientists rebut NYTimes op-ed 'To Save the Planet, Don't Plant Trees'. In, Mongabay, p. 1. <https://news.mongabay.com/2014/09/scientists-rebut-nytimes-op-ed-to-save-the-planet-dont-plant-trees/>
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8. Kanninen, M., 1990. Muuttuuko ilmastonme? Turun Sanomat 5.9.1990, p. 2.
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10. Kanninen, M., 1984. Portit auki, Las Compuertas. Kokemuksia Meksiko-ryhmän matkan alkutaipaleelta. Forstihuuto 2, 5-7.
11. Kanninen, M., 1981. Tutkijanura tavoitteena? Forstihuuto 3, 16-17.
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## G Theses

### G1 Bachelor's thesis

1. Kanninen, M., 1982. Deforestation and soil erosion in Mexico. Ympäristönsuojelun laudaturyö. Ympäristönsuojelun laitos. Helsingin yliopisto, Helsinki. 25 p.

### G2 Master's thesis

1. Kanninen, M., 1977. Männikön puiston ja varvoston maanpäällisen osan päivittäisen kuiva-ainetuotoksen dynamiikka. Metsänhoitotieteen pro gradu-työ. Helsingin yliopisto, Metsänhoitotieteen laitos. University of Helsinki, Helsinki. 105 p.

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## I. Audiovisual material, ICT software

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## **I2. ICT software**

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