

Dr. Oludunsin Tunrayo Arodudu

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Career Objective

Devise methodologies and provide information that directs nature-society and environmental research, policy, management and governance towards sustainability using spatial knowledge, ecological models, impact assessment tools, biophysical economic concepts and sustainability principles.

Research Interest and experience

Geographical Information systems, Remote sensing, Landscape Ecology, Industrial Ecology, Social Ecology, Applied ecology, Impact assessment, Biophysical Economics, Sustainability Science, Multi-Criteria Decision making (See also List of research interest and experience)

Educational background

2013-2017: PhD Geoecology (Dr. rer. nat-Doctor of Natural Resources), University of Potsdam, Germany.

2011-2012: EU Erasmus Mundus MSc. GEM (Geoinformation Science and Earth Observation for Modelling and Management-GEM) - ITC, University of Twente, Netherlands.

2010-2011: EU Erasmus Mundus MSc. GEM (Geoinformation Science and Earth Observation for Modelling and Management-GEM) - Lund University, Sweden.

2005-2008: BSc. Geography- Obafemi Awolowo University, Ile-Ife, Nigeria.

Work experience

Jan 2022-Date- Postdoctoral Research Associate at State University of New York, College of Environmental Science and Forestry (SUNY-ESF)

Duties

- Carbon accounting for harvested wood products
- Literature review, technical report and research article writing, research presentation

November 2020- Jan 2022- Senior Circular Economy Researcher at Irish Manufacturing Research

Duties

- Regional mapping of industry materials available for the Irish Circular Economy
- Development of Baseline Assessment and Carbon Estimation Framework
- Carbon Footprint and Hotspot analysis
- On-site inspection and development of register of circular economy opportunities for companies
- Development of sustainability indicators for monitoring and verification of circular economy activities
- Verification of corporate environmental sustainability commitments (energy, water and waste) for companies and helping them set internal targets in alignment with Government policies.
- Evaluation of Industrial symbiosis Pilot activity between a bakery and brewery (i.e. experimentation of brewer spent grain as baking flour, application of brewer yeast residue as baking yeast and use of surplus bread and cooked dough in place of malted barley).
- Scope 3 Carbon Emission Assessment, Circular Economy Assessment, Techno-economic analysis
- Literature review, technical report and research article writing, research presentation,
- Liasing with and reporting 29 industry partners on thier Circular Economy Activities including Coca Cola, Wyeth, Kerry, KerryGold, Aryzta, FreeFoam etc. and Policy partners such as Climate KIC, Environmental Protection Agency (EPA), Irish Bioeconomy Foundation (IBF) and the Department of Environment, Climate action and Communication (DECC).

July 2018-July 2019- Visiting Research and Teaching Fellow, Obafemi Awolowo University, Nigeria

Duties

- Teaching net energy indicators for assessment of energy and climate change mitigation strategies to sustainable development goals

August-September 2018- Lecturer, University of Technology Sydney, Australia

Duties

- Teaching industrial ecology and landscape ecology principles for sustainability assessment

April 2018- October 2020- AXA Research Fund Future Research Leader in Energy Transition Postdoctoral Research Fellow at Maynooth University, Ireland

Duties

- Bioenergy resource assessment, Climate change mitigation potential assessment, Sustainability assessment indicator development, Infrastructural and Institutional constraint analysis, environmental impact assessment
- Statistical modelling, Spatial clustering
- Literature review, technical report and research article writing, research presentation,

April 2017-March 2018-EPA-HSE Postdoctoral Research Fellow at Maynooth University, Ireland

- Green and blue space exposure and human health modelling, Health Impact Assessment
- Statistical modelling, Spatial clustering
- Literature review, technical report and research article writing, research presentation,
- Liaising with research partners at University College Dublin and Eastern and Midlands Regional Assembly, and ensuring compliance with research and policy objectives of Environmental Protection Agency and the Health Services Executive of Ireland

May 2013-June 2014- Teaching Assistant at Potsdam University, Germany and Leibniz Centre for Agricultural Landscape Research, Germany

Duties

- Teaching geographical information system (GIS) methodologies and life cycle assessment (LCA) methodologies for assessment of ecosystem services at Bachelors and Masters level at the University of Potsdam, Germany
- Teaching indirect sustainability effects of bioenergy production and the framework for participatory impact assessment (FoPIA) to a cross section of Doctoral students (from Germany, Finland, Sweden Austria and France) within the frame of the EU Marie Curie Sklodowska Doctoral Innovative Training Network CASTLE (Careers in Sustainability Excellence).

April 2013-June 2017- Junior Researcher (EU Marie Sklodowska Curie ITN CASTLE Doctoral Fellow) at Leibniz Centre for Agricultural Landscape Research (ZALF)

Duties

- Sustainability assessment and Sustainability Impact Assessment, Carbon and water footprint assessment and improvements, Material and Energy Flow Analysis, Life Cycle Assessment, Energy efficiency assessment and improvements, Participatory impact assessment
- Literature review, research article writing, research presentation
- Liaising with research partners within EU funded CASTLE Network, and ensuring compliance with research project agenda

April-July 2012- Volunteer researcher at ITC, University of Twente, Netherlands

Duties

- Sustainability assessment, Life Cycle Assessment, Environmental Impact Assessment, Strategic Environmental Assessment, Bioenergy resource assessment, Material and Energy Flow Analysis, Energy efficiency assessment and improvement
- Literature review, technical report and research article writing, research presentation
- Liaising with research partners at University of Twente, Netherlands and Government of Overijssel Province

- Recommendations and advisory on strategies for meeting 2030 Dutch renewable energy targets

March-August 2010- Researcher at Lime Associates, FCT Abuja, Nigeria

Duties

- Business proposal development, Conceptual modelling and development, Business research writing, Strategic planning and Client Management

April 2009-March 2010- Primary Five Teacher at NYSC Nursery and Primary School, Bunza, Nigeria

Duties

- Teaching Primary Five pupils Social Studies, Integrated Science, Agricultural Sciences and Computer Science and looking after their wellbeing

Fellowships, Honours, Awards and Travel Grants

May 2018-June 2020-AXA Research Fund Research Leader Fellowship in Energy Transitions: Towards a fair and just transition-**an environmental/climate/energy justice project** (124810 Euros)

September 2017-Cum Laude Honours, Potsdam University, Germany

September 2017-Yale Sustainability Leadership Forum Scholarship, Yale university, USA (2000 United States Dollars)

April 2017-March 2018- Environmental Protection Agency of Ireland and Health Services Executives Fellowship (73357.22 Euros)

March 2017-World Sustainable Energy Days (WSED) Conference Grant, WSED Conference 2017, Wels, Austria (800 Euros)

April 2016-US IALE Travel Award at the United States-International Association of Landscape Ecology (US-IALE) 2016 Annual Meeting, Asheville, North Carolina, USA (500 United States Dollars)

October 2015- USSEE Bursary Support at the Joint biennial Conference of the Canadian Society of Ecological Economics and the United States Society of Ecological Economics (CANSEE/USSEE), Vancouver, Canada (127 Canadian Dollars)

July 2015- NASA/MSU Professional Enhancement Award by the National Aeronautics and Space Administration and the Michigan State University, at the 9th IALE (International Association of Landscape Ecology) World Congress, Portland, Oregon, USA (780 United States Dollars)

July 2015- US IALE Foreign Scholar Travel Award at the 9th IALE (International Association of Landscape Ecology) World Congress, Portland, Oregon, USA (1200 United States Dollars)

June-August 2015-Young Scientist Summer Program (YSSP) Fellowship at the International Institute of Applied System Analysis (IIASA), Laxenburg, Austria (5500 Euros)

May 2013-IAIA Top 30 Under 30 Wall at the 33rd Annual conference of the International Association for Impact Assessment, Calgary, Canada (Honorary)

April 2013- October 2016: EU Marie Curie Sklodowska CASTLE (Careers in Sustainability Excellence) Innovative Training Network (ITN) Doctoral Fellowship (210000 Euros)

July 2012: SESYNC Travel Grant, National Socio-Environmental Synthesis Center Annapolis, Maryland, USA (3932.69 Euros)

November 2008: Best Final Year Dissertation, Department of Geography, Obafemi Awolowo, University, Ile-Ife, Nigeria (2nd Class Upper Division Honours)

Teaching Experience

June 2014- Ecosystem services-Life Cycle Concepts for Ecosystem Services Assessment- GHG, HANPP and EROEI accounting frameworks, MSc. Geoecology Class- University of Potsdam, Germany.

May 2014- Indirect Sustainability impacts of agricultural based bioenergy- US Maize ethanol Case Study, Ekenäs mansion, organized by the Skogforsk, Swedish University of Agriculture (SLU), Uppsala, Sweden, in the frame of the EU Marie Curie Sklodowska CASTLE (Careers in Sustainability Excellence) Innovative Training Network (ITN) Doctoral Programme.

April- July 2014- Introduction to GIS II-What is GIS (Geographical Information System), Digitization, Working with vector data (databases and operations), Model building, BSc. Geoecology Class-University of Potsdam, Germany

May 2013- Framework for Participatory Impact Assessment (FoPIA) training, Mekrijarvi Research Station, Iiomantsi, organized by the European Forest Institute (EFI), Joensuu, Finland, in the frame of the EU Marie Curie Sklodowska CASTLE (Careers in Sustainability Excellence) Innovative Training Network (ITN) Doctoral Programme.

April 2009-February 2010- Integrated Science, Agricultural Science, Social Studies and Computer Science for Primary 5 Pupils at NYSC Nursery and Primary School, Bunza, Kebbi State, Nigeria

Leadership, Editorial and Advisory Experience

2021- Associate Editor, Frontiers in Sustainability | Multi-criteria Decision Making

2021- Guest Editor, Journal of Industrial Ecology

2021- Senior Circular Economy Researcher, Irish Manufacturing Research, Ireland

2020- Board member, Life Cycle Sustainability Assessment Section, International Society for Industrial Ecology

2019-2021 Advisor (Volunteer), Radmol AI Ireland (on spatial component of deployment of artificial intelligence applications for improvement of medical imaging services in Sub-Saharan Africa)

2019- Principal Investigator and Lead researcher, AXA Research Fund Future Research Leader Fellowship

2014-Facilitator, Indirect Sustainability Assessment of bioenergy production, EU Marie Curie Sklodowska CASTLE (Careers in Sustainability Excellence) Innovative Training Network (ITN) Doctoral Programme

2013-Facilitator, Framework for Participatory Impact Assessment (FoPIA) course, EU Marie Curie Sklodowska CASTLE (Careers in Sustainability Excellence) Innovative Training Network (ITN) Doctoral Programme

2011- Group leader for data collection exercise for update of Lund City Land Cover map, Class of 2012, MSc. Geoinformation Science and Earth Observation for Environmental Modelling and Management (GEM) Program, Lund University, Sweden

2009-Platoon Football Coach (Platoon 3) at the 2009 Batch 'A' NYSC Orientation Camp in Jega, Kebbi State, Nigeria

2009-2010 Resuscitator and Coordinator of the NDLEA/NYSC Drug Free Club Pet Project named Life Club Programme in all the Secondary Schools in Bunza Local Government Area, Kebbi State

2009-2010 Coordinator of the 2009 Drug Free Sensitization Lectures and Seminar Series for all the Secondary Schools in Bunza Local Government Area, Kebbi State, Nigeria

2009-2010 Bible Study Coordinator of the Nigeria Christian Corpers Fellowship (NCCF), Bunza Zone, Bunza, Kebbi State, Nigeria

2008-2009 Financial Secretary, Corper's Welfare Association, Bunza Local Government Area, Kebbi State, Nigeria

2008-2009 Secretary General of the NDLEA/NYSC Drug Free Club

2008-Group leader for data collection exercise for update of Ile-Ife topographic map, Class of 2008, BSc. Geography Department, Obafemi Awolowo University, Ile-Ife, Nigeria

Summer-School/Workshop

June 2021-Application of net energy indicators for energy and climate change mitigation potential assessment, Department of Geography, Obafemi Awolowo University, Nigeria, in the frame of the **AXA Research Fund Future Research Leader in Energy Transition Fellowship**.

May 2014- Indirect Sustainability impacts of agricultural based bioenergy- US Maize ethanol Case Study, Ekenäs mansion, organized by the Skogforsk, Swedish University of Agriculture (SLU), Uppsala, Sweden, in the frame of the **EU Marie Curie Sklodowska CASTLE (Careers in Sustainability Excellence) Innovative Training Network (ITN) Doctoral Programme**.

May 2013- Framework for Participatory Impact Assessment (FoPIA) training, Mekrijarvi Research Station, Ilomantsi, organized by the European Forest Institute (EFI), Joensuu, Finland, in the frame of the **EU Marie Curie Sklodowska CASTLE (Careers in Sustainability Excellence) Innovative Training Network (ITN) Doctoral Programme**.

Scientific research visits

May-June 2019: Centre on Persuasive Systems for Wise Adaptive Living, Faculty of Engineering and Information Technology, University of Technology Sydney, Australia; **Sponsor-**AXA Research Fund Research Leader Fellowship in Energy Transitions

January 2019: Leibniz Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany; **Sponsor-**AXA Research Fund Research Leader Fellowship in Energy Transitions

October-December 2018: Institute for Social Ecology (SEC), University of Natural Resources and Life Sciences, Vienna (BOKU), Austria; **Sponsor-**AXA Research Fund Research Leader Fellowship in Energy Transitions

October-December 2018: Institute of Silviculture (WALDBAU), University of Natural Resources and Life Sciences, Vienna (BOKU), Austria; **Sponsor-** AXA Research Fund Research Leader Fellowship in Energy Transitions

June-August 2015: International Institute of Applied System Analysis (IIASA), Laxenburg, Austria- Three months experience with the EPIC (Environmental Policy Integrated Climate) Model; **Sponsor-**Young Scientist Summer Program (YSSP)

February 2014: Institute for Social Ecology, Vienna, Austria-Month-long exposure to the HANPP-MFA accounting; **Sponsor-**EU Marie Curie Sklodowska Innovative Training Network CASTLE (Careers in Sustainability Excellence)

Research Trainings

March 3 – March 4 2020

Venue/Hosts: Sphera Solutions GmbH, Stuttgart, Germany

Topics covered: GaBi LCA Training- Introduction to Sustainability and LCA, GaBi Jump-Start

Funder: AXA Research Fund Research Leader Fellowship in Energy Transitions

January 20 – January 24 2020

Venue/Hosts: Ecole De Centrales, Nantes, France

Topics covered: Open LCA Training- Theoretical and conceptual basis of LCA and life cycle thinking, Fundamentals of OpenLCA software, Building a LCA model, Conduct a simple LCA study, Analysis of LCA results, parts of a system, design of a simulation plan for sensitivity analysis, Conduct a parametrized LCA with sensitivity analysis, Actors, functionality, system modeling for multi-functionality, Monte Carlo simulation for calculating uncertainties, LCA indicators for impact categories

Funder: AXA Research Fund Research Leader Fellowship in Energy Transitions

May 30 – June 30 2019

Venue/Hosts: University of Technology Sydney, Australia

Topics covered: Agent-based modelling, Spatio-temporal modelling

Funder: AXA Research Fund Research Leader Fellowship in Energy Transitions

January 2 – January 31 2019

Venue/Hosts: Leibniz Centre for Agricultural Landscape Research, Germany

Topics covered: Biogeochemical Cycle Modelling- The Model for Nitrogen and Carbon in Agro-ecosystems (MONICA)

Funder: AXA Research Fund Research Leader Fellowship in Energy Transitions

2 October – December 31 2018

Venue/Hosts: University of Natural Resources (BOKU), Vienna, Austria

Topics covered: Multi-criteria Evaluation tools- Pairwise comparison-Analytic Hierarchy Process (AHP), Outranking methods- Preference ranking organization method for enrichment evaluation (PROMETHEE)

Funder: AXA Research Fund Research Leader Fellowship in Energy Transitions

15 February -19 February 2016

Venue/Hosts: VTT, Helsinki, Finland

Topics covered: Future and prospects of sustainability assessment; Career perspectives for researchers; Legal aspects and Intellectual Property Rights (IPR); Start-ups – from idea to profitability; and Writing the thesis summary

Funder: EU Marie Curie Sklodowska Innovative Training Network CASTLE (Careers in Sustainability Excellence)

19 October - 25 October 2015

Venue/Hosts: European Forest Institute, Barcelona, Spain

Topics covered: Science Communication Skills, Conference management Skills, Social Media Communications

Funder: EU Marie Curie Sklodowska Innovative Training Network CASTLE (Careers in Sustainability Excellence)

4 July - 5 July 2015

Venue/Hosts: Hilton Portland Oregon, IALE World Congress 2015

Topics covered: Telecoupling framework for studying cross-border and cross-scale interactions

Funder: Michigan State University and National Aeronautics and Space Administration

29 September - 3 October 2014

Venue/Hosts: BOKU, Vienna, Austria

Topics covered: Multi-criteria tools for sustainability assessment, information management skills

Funder: EU Marie Curie Sklodowska Innovative Training Network CASTLE (Careers in Sustainability Excellence)

30 June - 4 July 2014

Venue/Hosts: FCBA, Paris, France

Topics covered: GHG Emission accounting of forest products, Transport Sustainability, Bio-energy specific enterprise resource planning (ERP)

Funder: EU Marie Curie Sklodowska Innovative Training Network CASTLE (Careers in Sustainability Excellence)

5 May – 9 May 2014

Venue/Hosts: Ekenäs mansion/Skogforsk, Swedish University of Agriculture (SLU), Uppsala, Sweden

Topics covered: Forest operations and biodiversity, International and EU policies and agreements, Indirect sustainability impacts (land use change, global market reactions)

Funder: EU Marie Curie Sklodowska Innovative Training Network CASTLE (Careers in Sustainability Excellence)

February 1 – February 28 2014

Venue/Hosts: IFF Vienna, Austria

Topics covered: Human Appropriation of Net Primary Production (HANPP) Modelling, Material Flow Accounting (MFA)

Funder: EU Marie Curie Sklodowska Innovative Training Network CASTLE (Careers in Sustainability Excellence)

November 3 – November 8 2013

Venue/Hosts: IFER, Czech Republic

Topics covered: LULUCF, carbon accounting, GHG Mitigation in the Forest Sector

Funder: EU Marie Curie Sklodowska Innovative Training Network CASTLE (Careers in Sustainability Excellence)

July 21 - August 7 2013

Venue/Hosts: Thünen Institute, Hamburg, Germany

Topics covered: LCA methodology, LCA of Forestry Sector, Forest Management, Short Rotation Coppice, Wood Products

Funder: EU Marie Curie Sklodowska Innovative Training Network CASTLE (Careers in Sustainability Excellence)

17 October 2013

Venue/Hosts: ZALF Müncheberg, Germany

Topics covered: NetMap: Stakeholder network mapping for natural resource governance

Funder: EU Marie Curie Sklodowska Innovative Training Network CASTLE (Careers in Sustainability Excellence)

6 May - 17 May 2013

Venue/Hosts: Mekrijärvi Research Station, Ilomantsi/ European Forest Institute (EFI), Joensuu, Finland.

Topics covered: Sustainability Impact Assessment-Introduction and theory, SIA tools- Sustainability Impact Assessment tools-Framework for participatory impact assessment-FoPIA and Tools for Sustainability Impact Assessment-ToSIA-value chains and topologies, Material Flow Analysis, Sustainability footprints of companies and products, Sustainability communication

Funder: EU Marie Curie Sklodowska Innovative Training Network CASTLE (Careers in Sustainability Excellence)

April 2013

Venue/Hosts: ZALF Müncheberg, Germany

Topics covered: FoPIA-Framework for Participatory Impact Assessment

Funder: EU Marie Curie Sklodowska Innovative Training Network CASTLE (Careers in Sustainability Excellence)

Publications

Peer reviewed publications (19)

Research Articles

Bulley, H.N.N., **Arodudu, O.T.**, Obonyo, E.A., Polo-Akpisso, A., Ibrahim, E.S., Bamutaze, Y. (2022). Conservation planning in rapidly changing landscapes and disturbance regimes in the Global South, *International Journal of Applied Geospatial Research*, 14 (1),

Ibrahim, E.S., Ahmed B., **Arodudu, OT**, Abubakar, J.B., Dang, B.A., Mahmoud, M.I., Shaba, H.A., Shamaki, S.B. (2022). Desertification in the Sahel Region: A Product of Climate Change or Human Activities? A Case of Desert Encroachment Monitoring in North-Eastern Nigeria Using Remote Sensing Techniques. *Geographies*, 2(2):204-226. <https://doi.org/10.3390/geographies2020015>

Arodudu, O.T, Holmatov, B., Voinov, A. (2020). Ecological impacts and limits of biomass use-A critical review. *Clean Technology and Environmental Policy*, 22 (8), 1591 – 1611. DOI: 10.1007/s10098-020-01911-1

Arodudu, O.T., Helming, K., Voinov, A., Wiggering, H. (2017). Integrating agronomic factors into energy efficiency assessment of agro-bioenergy production – A case study of ethanol and biogas production from maize feedstock, *Applied Energy*, 198, 426–439, doi:j.apenergy.2017.02.017

Arodudu, O.T., Helming, K., Wiggering, H., Voinov, A. (2017). Towards a more holistic sustainability assessment framework for agro-bioenergy systems- a review. *Environmental Impact review*, 62, 61–75, doi:10.1016/j.eiar.2016.07.008

Arodudu, O.T., Helming, K., Wiggering, H., Voinov, A. (2017). Bioenergy from Low-Intensity Agricultural Systems: An Energy Efficiency Analysis, *Energies* 10(1), 29; doi:10.3390/en10010029

Voinov, A., **Arodudu, O. T.**, van Duren, I., Morales, J., Qin, L. (2015). Estimating the potential of roadside vegetation for bioenergy production. *Journal of Cleaner Production*, 102, 213-225, doi:10.1016/j.jclepro.2015.04.034

van Duren I., Voinov A., **Arodudu O.T.**, Firissa M.T. (2014). Where to produce rapeseed biodiesel and why? Mapping European RME energy efficiency in different agro-ecological conditions. *Renewable energy*, 74, 49-59, doi:10.1016/j.renene.2014.07.016

Arodudu O.T., Ibrahim E.S, Voinov A., van Duren I. (2014). Exploring bioenergy potentials of built-up areas based on NEG-EROEI indicators. *Ecological indicators*, 47, 67-79, doi:10.1016/j.ecolind.2014.04.042

Arodudu O.T., Voinov A., van Duren I. (2013). Assessing bioenergy potentials in rural areas-A NEG-EROEI approach. *Biomass and Bioenergy*, 58, 350-364. <http://dx.doi.org/10.1016/j.biombioe.2013.07.020>

Book chapters

Ogbodo, J. A., Egbuche, C. T., **Arodudu, O. T.** (2014). Detecting logging roads and clearcuts with TerraSAR and RADARSAT data. In: Lac, S., McHenry, M. P. (eds), *Climate change and forest ecosystems*. Nova Science Publishers, Hauppauge, NY, pp. 71-88.

Arodudu, O.T. (2021). Chapter 4: Elements of holistic sustainability assessments for energy systems, In: Ren, J. (ed), *Energy Systems Evaluation (Volume 1)- Sustainability assessment*. Springer Nature, Switzerland AG, Gewerbestrasse 11, 6330 Cham, Switzerland, pp. 71-106

Book series chapters

Arodudu O.T (2013) - RS and GIS for City's environmental intelligence and precision planning, "Aachener Geographische Arbeiten" (AGA) Series, Heft. 50, S. 13-34

Conference Paper

Arodudu O.T., Voinov A., van Duren I. (2012) Assessing bioenergy potentials in rural landscapes, p. 6 <http://www.iaia.org/conferences/iaia12/uploadpapers/Final%20papers%20review%20process/Arodudu,%20Oludunsin.%20%20Assessing%20bioenergy%20potentials%20in%20rural%20landscapes.pdf>

Datasets

Arodudu, O.T., Helming, K., Wiggering, H., Voinov, A. (2016). Supplementary Materials: Bioenergy from Low-Intensity Agricultural Systems: An Energy Efficiency Analysis, *Energies*

Arodudu, O.T., Helming, K., Voinov, A. Wiggering, H. (2017). Supplementary Materials: Integrating agronomic factors into energy efficiency assessment of agro-bioenergy production – A case study of ethanol and biogas production from maize feedstock, *Applied Energy*

Thesis

Arodudu O.T. (2008) - Land Use Characterization of Ile-Ife. A dissertation submitted in partial fulfillment of the degree of Bachelor of Science (Geography), Faculty of Social Sciences, Obafemi Awolowo University, Ile-Ife. Pp 109. Unpublished

Arodudu O.T. (2012) - Analysis of bioenergy potential in the rural landscape of the Overijssel province using energy efficiency indices. A thesis submitted in partial fulfillment of the requirements for graduation for the EU Erasmus Mundus Master of Science in Geo-information Science and Earth Observation for environmental modelling and management (GEM) programme, Faculty ITC, University of Twente. Pp 59.
http://www.itc.nl/library/papers_2012/msc/gem/arodudu.pdf

Arodudu O.T., Helming, K., Wiggering, H., Voinov, A., Erb, K-H. (2017)-Sustainability assessment of agro-bioenergy systems using energy efficiency indicators. A thesis submitted in partial fulfillment of the requirements for graduation for the Doctorate of Natural Sciences (Dr.rer.nat.) degree in Geoecology (Landscape management), Faculty of Sciences, Institute of Earth and Environmental Sciences, University of Potsdam, Germany.

Non-peer review publications (48)

Technical Reports

Arodudu, O., Brennan, G. (2022). Regional Material Mapping of Irish Circular Economy. Climate-KIC Report, pp. 37

Arodudu, O., Reynolds, S. (2022). Sectoral Guide for Circular Agriculture and Biobased Sectors in Ireland, CIRCULÉIRE Sectoral Guide, pp. 48

Arodudu, O., Martinelli, F.G., Jegathese, S.J.P., Ryan, K. (2021) Circular Bioeconomy 2020 Summary Report, CIRCULÉIRE Thematic Working Group Report, pp. 27

Arodudu, O., Impocco, G., Brennan, G. (2021) Industrial Symbiosis 2020 Summary Report, CIRCULÉIRE Thematic Working Group Report, pp. 13

Impocco, G., **Arodudu, O.,** Brennan, G., McCormack, D. (2021). SymbioBeer Pilot Demonstration Report, EPA Green Enterprise Fund Research Report, pp. 57

Impocco, G., **Arodudu, O.,** Brennan, G., (2021). SymbioBeer Industrial Symbiosis Industry Guide, CIRCULÉIRE Industry Guide pp.10

Impocco, G., **Arodudu, O.,** Brennan, G., (2021). SymbioBeer Industrial Symbiosis Policy Guide, CIRCULÉIRE Industry Guide pp.7

Impocco, G., **Arodudu, O.,** Brennan, G., (2021). SymbioBeer Industrial Symbiosis Case study, CIRCULÉIRE Case study Report pp. 6

Foley, R., Brennan, M., **Arodudu, O.,** Mills, G., Ningal, T., Bradley M. (2018) Green and Blue Spaces and Health: A Health-Led Approach, EPA Synthesis Report, Research 264, pp. 73

Arodudu O.T (2015). Spatio-temporal analysis of LCA indicators for sustainability assessment of agro-bioenergy systems- An HANPP based approach. **IIASA Young Scientist Summer School 2015 Report, International Institute of Applied System Analysis (IIASA), Laxenburg, Austria.**

Contribution to information on the FoPIA (Framework for participatory impact assessment) tool: In: Scenario Development to Strengthen National Forest Policies and Programmes- A review of future oriented tools and approaches that support policy-making; **Forest Policy and Institutions Working Paper of the Food and Agricultural Organization (FAO) of the United Nations, Rome, Italy, 2014.**

Policy Brief

Foley, R., Arodudu, O., Brennan, M., Mills, G., Bradley, M., Ningal, T. (2018). GBI Health Policy Brief I: Finding the Right Geography for Health Data for Ireland.

Newspaper Article

Osafehinti E. K., **Arodudu O.T.** (2011). Blueprint for Economic Transformation: An Agenda for Nigerian Policy Makers. A two part series on potential strategies for revamping the Nigerian economy by the active promotion of the manufacturing sector, *Manufacturing Today*, 1, 17-18.

Research Articles (for resubmission)

Arodudu, O.T. (2021). Towards a more holistic and integrated sustainability assessment framework for urban land use in Sub-Saharan Africa, *Journal of Land Use Science*

Arodudu, O.T., Helming, K., Voinov, A., Wiggering, H. (2021) Operationalizing the life cycle assessment-land use function framework for sustainability assessment of agro-bioenergy land use systems, *Science of the Total Environment*

Arodudu, O.T., Moleman-Bais, A.L.S., Helming, K., Gingrich, S., Erb, K-H., Voinov, A., Wiggering, H. (2021). Assessing the energy efficiency of global agricultural bioenergy systems- A Human Appropriation of Net Primary Production (HANPP) Approach, *Resources, Conservation and Recycling*

Arodudu, O.T., Moleman-Bais, A.L.S., Helming, K., Gingrich, S., Erb, K-H., Voinov, A., Wiggering, H. (2021). Assessing the global bioenergy potential of crop residues using net energy gain indicators, *Bioresources technology*

Research Articles (in preparation)

Arodudu, O.T. (2022). Towards a sustainable circular bioeconomy: The role of hydrothermal conversion technologies, *Frontiers in Energy Research*

Arodudu, O., Voinov, A. (2022). Decarbonizing the global economy and creating a sustainable circular global bioeconomy: Hope or Hoax? *Environmental Innovation and Societal Transitions*

Arodudu, O. (2022). Comments on EROI- Re: Land, water and carbon footprints of circular bioenergy production systems, *Renewable and Sustainable Energy Reviews*,

Arodudu, O. (2022). Future sustainability assessments of energy systems, *Renewable and Sustainable Energy Reviews*,

Arodudu, O. (2022). Basic elements of sustainability research, *Nature Sustainability*

Arodudu, O. (2022). Life cycle sustainability assessment as sustainability assessment, Impact assessment and Project appraisal

Report (in preparation)

Arodudu, O.T., Adesina F.A., Ibrahim, E.S., Mahmoud, M.I., Osafehinti, E.K. (2021). Biomass, energy and climate change mitigation potential of waste resources in Nigeria

Pitch, Poster and speed talk presentation

Arodudu O.T. (2019)- Assessing bioenergy potential of waste in Nigeria. A pitch given to the Scientific Committee of the AXA Research Fund on the 21st of November, 2019 at the AXA Headquarters in Paris, France

Arodudu, O.T., Foley, R., Brennan, M., Mills, G., Bradley, M. and Ningal, T. (2017). Green and Blue Infrastructure and Human Health. A poster presentation presented on the September 15, 2017 at the Yale Sustainability Leadership Forum, New Haven, Connecticut, USA

Arodudu, O.T., Foley, R., Brennan, M., Mills, G., Bradley, M. and Ningal, T. (2017). Green-Blue Infrastructures: A Health-Led Approach. *Mindscape: Nature based solutions for Campus & Community Well-Being*. An elevated presentation presented on the October 14, 2017 at the EPA/GreenEX/NEARHealth International Workshop, University of Limerick, Ireland

Arodudu, O.T., Foley, R., Brennan, M., Mills, G., Bradley, M. and Ningal, T. (2017) Mapping associations between Health Indicators and Green-Blue Infrastructures. A poster presentation presented on the November 29, 2017 at the EPA-HSE 2nd Annual Conference on Environment and Health, Dublin, Ireland

Arodudu O.T (2015) - Sustainability assessment framework for agro-bioenergy land use. A poster and speed talk presentation presented on the 21st of October, 2015 at the CASTLE Conference, Sant Pau Art Nouveau Site, Barcelona, Spain

Arodudu O.T (2012)- Land Characterization for City's environmental intelligence. A poster presentation presented on the 23rd of July, 2012 at a Workshop on Visualization Technologies to Support Research on Human-Environment Interactions at the National Socio-Environmental Synthesis Center Annapolis, Maryland, U.S.A

Conference proceedings

Arodudu, O.T., Murphy, D.J.R (2020). The role of life cycle assessment/life cycle sustainability assessment based net energy analysis indicators in assessing impact categories listed within the UN Sustainable development goals (SDGs). International Society of Biophysical Economics 2021, September 7th -10th, 2021, Online

Arodudu, O.T., Foley,R., Brennan,M.,Mills, G., Bradley,M.and Ningal,T.(2019). Towards a more holistic framework for a health-led approach at the green and blue infrastructure and human health interface-Case study of Ireland, IALE (International Association of Landscape Ecology) World Congress, July 1-5, 2019, Milano, Italy

Arodudu, O.T. (2019). Synergies between Ecological Restoration and Energy Production- A Case of Bioenergy and Climate Change Mitigation Potential of Arid Wastelands in Northern Nigeria, IALE (International Association of Landscape Ecology) World Congress, July 1-5, 2019, Milano, Italy

Arodudu, O.T. (2019). Synergies between Ecological Restoration and Energy Production- A Case of Bioenergy and Climate Change Mitigation Potential of Arid Wastelands in Northern Nigeria, US IALE (International Association of Landscape Ecology) Annual Meeting, April 7-11, 2019, Fort Collins, Colorado,USA

Arodudu, O.T. (2018). The impact of agricultural production systems on the energy efficiency of agro-bioenergy systems, International Society of Biophysical Economics 2018, June 13-17, 2018, Wells College, Aurora, New York, USA

Arodudu, O.T., Brennan, M., Mills, G., Ningal, T., Bradley, M. and Foley, R. (2018) Health Data within the Irish Statistical System: Identifying new sources and geographies, 50th Conference of Irish Geographers, May 8-10, 2018, Maynooth University, Ireland

Arodudu, O.T., Foley, R., Brennan, M., Mills, G., Bradley,M. and Ningal,T.(2018). Towards a more holistic framework for a health-led approach at the green and blue infrastructure and human health interface, US IALE (International Association of Landscape Ecology) Annual Meeting, April 8-12, 2018, Chicago, Illinois,USA

Arodudu, O.T., Foley, R., Brennan, M., Mills, G., Bradley, M. and Ningal, T. (2017). Green-Blue Infrastructures: A Health-Led Approach, 17th Medical Geography International Symposium, July 2-7, 2017, Angers, France.

Arodudu, O.T., Foley, R., Brennan, M., Mills, G., Bradley, M., and Ningal, T. (2017). Green-Blue Infrastructures: A Health-Led Approach, Conference of Irish Geographers 2017, May 4-6, 2017, University College Cork, Cork, Ireland.

Arodudu, O.T. (2017). Assessing the sustainability of using agricultural biomass flows for bioenergy. World Sustainable Energy Days (WSED) Conference, March 1-3, 2017, Wels, Austria

Arodudu, O. T., Helming, K., Wiggering, H., Erb, K.H, Voinov, A.A. (2016). Spatio-temporal assessment of agro-bioenergy systems-a Human appropriation of net primary production (HANPP) approach. US IALE (International Association of Landscape Ecology) Annual Meeting, April 3-8, 2016, Asheville, North Carolina, USA

Arodudu, O. T., Helming, K., Voinov, A.A., Wiggering, H. (2015). Sustainability assessment of agro-bioenergy land use: Industrial agriculture vs. Ecological Agriculture. CASTLE Conference. October 21-23, 2015, Barcelona, Spain.

Arodudu, O. T., Helming, K., Voinov, A.A., Wiggering, H. (2015). Reconstructing energy efficiency of bioenergy from arable land. Joint Biennial Conference of the Canadian Society of Ecological Economics and the United States Society of Ecological Economics (CANSEE/USSEE), October 1-4, 2015, Vancouver, Canada

Arodudu, O. T., Helming, K (2015). Reconstructing greenhouse gas balance indicators for agricultural bioenergy production. The 5th World Sustainability Forum (WSF), 7–9 September 2015, Basel, Switzerland

Arodudu, O. T., Helming, K., Erb, K.H, Voinov, A.A., Wiggering, H. (2015). Applying HANPP for sustainability assessment of agro-bioenergy ecosystem services. 9th IALE (International Association of Landscape Ecology) World Congress, July 5-10, 2015, Portland, Oregon, USA

Arodudu O.T, Voinov A., van Duren I. (2012) Assessing bioenergy potentials in rural landscapes. A conference paper presented on the 31st of May 2012 at the 32nd Annual conference of the International Association for Impact Assessment, Porto, Portugal.

Arodudu O.T (2013) - RS and GIS for City's environmental intelligence and precision planning. A conference paper delivered on the 18th of April, 2012 at the City 2020+ Conference, Human Technology Centre, RWTH Aachen University, Germany. Conference proceedings in: "Aachener Geographische Arbeiten" (AGA) Series, Heft. 50, S. 13-34

Seminar and Colloquium Presentations

June 2019-Assessing the energy and climate change mitigation potential of organic wastes and wastelands at the Centre on Persuasive Systems for Wise Adaptive Living, Faculty of Engineering and Information Technology, University of Technology Sydney, Australia

November 2015- Sustainability assessment of agro-bioenergy production using net greenhouse gas balance indicators, a talk delivered at the PhD Seminar of the University of Potsdam, Germany

August 2015- Spatial-temporal assessment of HANPP based LCA indicators for sustainability assessment of agro-bioenergy related ecosystem services, a talk delivered at the Final YSSP (Young Scientists Summer Program) Colloquium, at the International Institute of Applied System Analysis (IIASA), Laxenburg, Austria

December 2014- Sustainability assessment of agro-bioenergy production using EROEI based indicators, a talk delivered at the PhD Seminar of the University of Potsdam, Germany

Publication reviews

Resources, Conservation and Recycling (5), Applied Energy (7), Ecological indicators (9), Environmental Modelling & Software (3), Renewable and Sustainable Energy Reviews (3), Sustainable Cities and Society (2), Sustainability (1), Science of the Total Environment (4), Journal of Cleaner Production (1), Environmental Impact Assessment Review (1), Journal of Industrial Ecology (1), Journal of Biophysical Economics and Sustainability (1).

Successful grant applications

Principal investigator: Assessing energy and climate change mitigation potential of organic wastes and wastelands in Sub-Saharan Africa (ATECPA)-AXA Research Fund Future Research Leader in Energy Transition Fellowship

Contributor to State-of-the-art Review: Developing REsilient African cities and their urban environMent facing the pro-vision of essential urban SDGs -Belmont Forum

Professional affiliations and membership

International Society of Biophysical Economics (ISBPE)
International Society of Industrial Ecology (ISIE)
International Association of Impact Assessment (IAIA)
International Association of Landscape Ecology (IALE)
International Network of Research on Coupled Human and Natural Systems (CHANS-Net)

List of research interest and experience

Geography, Landscape Ecology and Spatial Analysis-Remote sensing, Geographical Information Systems, GIS programming (Visual Basic, R, Matlab), Health Geography, Land Cover/Use Mapping Studies, Green and Blue Infrastructure and Human Health Mapping/Modelling OR Ecosystem services and human health modelling, Spatial Clustering and Statistics, Spatial and Statistical Modelling, Local/Regional/National/Global assessments, Urban Sustainability Studies, Urban ecology, Future cities, Integrated Rural Development Studies, Agricultural Production Systems, Climate/Environmental/Energy Justice, Wasteland Restoration/Biodiversity Conservation, Roadside Utilization, Forestry Resource Assessment/Monitoring, Desert/Sand dune Progression Monitoring/Assessment, Land use planning and risk assessments, Bioresource Mapping/Assessment, Food Systems (agricultural production systems), Ecosystem Valuation and Mapping

Impact Assessment-Impact Assessment, Health Impact Assessment, Environment Impact Assessment, Life Cycle Assessment, Sustainability Impact Assessment, Strategic Environmental Assessment, Participatory/Stakeholder Impact Assessment and modelling, Sustainability Assessment/Analysis, Scenario Modeling, Stakeholder Influence Mapping, Multi-criteria Assessment, Framework for Participatory Impact Assessment, Footprinting (Ecological, Carbon, Water, human and Land use footprinting), Tool for Sustainability Impact Assessment, Human Appropriation of Net Primary Production

Biophysical Economics-Energy return on energy invested analysis, Net energy analysis, Energy Efficiency Analysis, Comparative Renewable Energy Assessments, Energy return on energy Invested (EROEI or EROI) analysis, Greenhouse gas balance analysis, Biomass Potential and Bioenergy Potential Assessment, Energy System Analysis, Sustainability Evaluation Of Bioenergy Resources, Optimization of Raw Materials for Biogas Production. Material Flow Analysis

Sustainability Sciences-Conceptual framing/modeling, Driver-Pressure-State-Impact and Response Analysis, Space-Time-Impact and Stakeholder Studies, Metacoupling Studies-Telecoupling, Pericoupling and Introcoupling Analysis, Sustainable development

References

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