

Hakim Abdi, Ph.D.

Full Name: Abdulhakim M. Abdi

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Citizenship: Somalia and United States of America.
Permanent Resident of Sweden.

Languages: English (Native), Somali (Fluent), Arabic (Fluent), Hindi/Urdu (Intermediate Spoken Only), German (Basic/B1), Swedish (Beginner/A1)



Social Media

Twitter: /@HakimAbdi
Facebook: /Abdulhakim.Abdi
LinkedIn: /in/hakimabdi
Website: www.hakimabdi.com

EDUCATION

- **Doctor of Philosophy** in Geobiosphere Science (03/2017). *Supervisor: Prof. Jonas Ardö.*
Department of Physical Geography & Ecosystem Science, Lund University, **Sweden**.
 - **Dissertation:** *Primary Production in African Drylands – Quantifying Supply and Demand Using Earth Observation and Socio-ecological Data.*
- **Master of Science** in Geospatial Technologies (03/2010). *Supervisor: Prof. Dr. Edzer Pebesma.*
 - Joint Degree: Institute for Geoinformatics - University of Muenster, **Germany**
School of Information Management - New University of Lisbon, **Portugal**
Department of Computer Languages and Systems - Universitat Jaume I, **Spain**
 - **Thesis:** *Investigating Habitat Association of Breeding Birds Using Open Access Satellite Imagery and Land Cover Data.*
- **Bachelor of Science** in Geoscience (08/2007). Montclair State University, Montclair, NJ, **USA**.

RESEARCH STAYS

- **Visiting Scholar:** Department of Earth and Environment, Boston University, Boston, MA, **USA**.
08/2015 – 12/2015. *Supervisor: Prof. Dr. Ranga Myneni.*
- **Visiting Researcher:** Smithsonian Conservation Biology Institute, Front Royal, VA, **USA**.
04/2010 – 08/2010. *Supervisor: Dr. Peter Leimgruber.*

PUBLICATIONS

PEER-REVIEWED RESEARCH ARTICLES

13. F. Rizinjirabake, **A. M. Abdi**, D. E. Tenenbaum, P. Pilesjö. (2018). *Dissolved organic carbon loading in stream waters in Rukarara River watershed in Rwanda*. **Science of the Total Environment** 643, 793-806.
12. D. B. Metcalfe, [...], **A. M. Abdi**. (2018). *Identifying gaps and priorities in environmental research across the terrestrial Arctic biome*. **Nature Ecology and Evolution**. Accepted.
11. N. Boke-Olén, V. Lehsten, **A. M. Abdi**, J. Ardö, A. Khatir. (2018). *Implementing daily carbon allocation for grasses in a dynamic vegetation model for grazing applications in Sudan*. **Rangeland Ecology and Management**. Accepted.
10. F. Sallaba, S. Olin, K. Engström, **A. M. Abdi**, N. Boke-Olén, V. Lehsten, J. Ardö, and J. W. Seaquist. (2017). *Future supply and demand of net primary production in the Sahel*. **Earth System Dynamics** 8, 1191-1221.
9. S. Georganos, **A. M. Abdi**, D. E. Tenenbaum, S. Kalogirou. (2017). *Examining the NDVI-rainfall relationship in the semi-arid Sahel using geographically weighted regression*. **Journal of Arid Environments** 146, 64-74.
8. L. Eklund, **A. M. Abdi**, M. Islar. (2017). *From Producers to Consumers: The Challenges and Opportunities of Agricultural Development in Iraqi Kurdistan*. **Land** 6(2) 44.
7. T. Tagesson, J. Ardö, B. Cappelaere, L. Kergoat, **A. M. Abdi**, S. Horion, R. Fensholt. (2017). *Modelling spatial and temporal dynamics of GPP in the Sahel from Earth observation-based photosynthetic capacity and quantum efficiency*. **Biogeosciences** 14, 1333.
6. **A. M. Abdi**, N. Boke-Olén, D. E. Tenenbaum, T. Tagesson, B. Cappelaere, J. Ardö. (2017). *Evaluating water controls on vegetation growth in the semi-arid Sahel using field and Earth observations data*. **Remote Sensing** 9(3) 294.
5. N. Boke-Olén, **A. M. Abdi**, O. Hall, V. Lehsten. (2017). *High-resolution African population projections from radiative forcing and socio-economic models, 2000 to 2100*. **Scientific Data** 4: 160130.
4. **A. M. Abdi**, A. Vrieling, G. T. Yengoh, A. Anyamba, J. Seaquist, C. C. Ummenhofer, J. Ardö. (2016). *The El Niño-La Niña cycle and recent trends in the supply and demand of net primary production in African drylands*. **Climatic Change** 38(1), 111-125.
3. **A. M. Abdi**, J. Seaquist, D. E. Tenenbaum, L. Eklundh, J. Ardö. (2014). *The Supply and Demand of Net Primary Production in the Sahel*. **Environmental Research Letters** 9: 094003.
2. R. E. Bell, K. Tinto, I. Das, M. Wolovick, W. Chu, T. T. Creyts, N. Frearson, **A. M. Abdi**, J. D. Paden. (2014). *Deformation, warming and softening of Greenland's ice by refreezing meltwater*. **Nature Geoscience**, 7, 497-502.
1. **A. M. Abdi**. (2013). *Integrating Open Access Geospatial Data to Map the Habitat Suitability of the Declining Corn Bunting Miliaria calandra*. **ISPRS International Journal of Geoinformation**. 2(4):935-954.

MANUSCRIPTS IN PREPARATION

16. A. Mechiche-Alami and **A. M. Abdi**. (2018). *Recent changes in growing season phenology and their relationship to climate in West African livelihoods*.
15. **A. M. Abdi**, H. Jin, N. Boke-Olén, L. Eklundh, T. Tagesson, V. Lehsten, J. Ardö. (2018). *Potential of the plant phenology index to estimate gross primary productivity in semi-arid Africa*.
14. E. L. Johansson and **A. M. Abdi**. (2018). *Mixing methods to understand land use and land cover change in Kilombero Valley, Tanzania*.

BOOK CHAPTERS

- **A. M. Abdi**, A. Nandipati. (2009). *Abu Dhabi Island: Analysis of Development and Vegetation Change Using Remote Sensing (1972-2000)*. In E. Chuvieco, J. Li, and X. Yang (Eds.). **Advances in Earth Observation of Global Change** (Chapter 4: pp. 62-74). Berlin: Springer-Verlag.
DOI:10.1007/978-90-481-9085-0

FIELD REPORTS

- **A. M. Abdi**, C. R. Drew (2000). *Black-necked Grebe (Podiceps nigricollis) – A New Breeding Species for the United Arab Emirates*. Phoenix 17:20-21. Compiled by Mike C. Jennings, Atlas of the Breeding Birds of Arabia. Published by NCWCD, Riyadh, Kingdom of Saudi Arabia. ISSN 0268-487X.
- **A. M. Abdi**, Salim Javed. (2001). *Breeding of Greater Flamingoes (Phoenicopterus roseus) in Abu Dhabi, United Arab Emirates*. IUCN Species Survival Commission/Flamingo Survival Group Bulletin. ISSN 1680-1857.

TEACHING

- Introduction to R Programming – Introduction to Spatial Statistics (Spring 2015, 2016, 2017)
- GIS & Remote Sensing in Urban and Rural Sustainable Development (Spring 2015, 2016, 2017)
- Advanced Geographic Information Systems (*Online*) (Fall 2014, 2015)
- GIS in Physical Planning (*Online*) (Spring 2014, Fall 2014)
- Intro to Species Distribution Modeling, Smithsonian Conservation Biology Institute (Summer 2010)

SUPERVISED MASTER THESES

1. Deborah Bowyer (2015). *Measuring Urban Growth, Urban Form and Accessibility as Indicators of Urban Sprawl in Hamilton, New Zealand*. **Master of Science in Geographical Information Sciences. (Main Supervisor)** Department of Physical Geography and Ecosystem Science, Lund University.
2. Stefanos Georganos (2016). *Exploring the spatial relationship between NDVI and rainfall in the semi-arid Sahel using geographically weighted regression*. **Master of Science in Geomatics. (Main Supervisor)** Department of Physical Geography and Ecosystem Science, Lund University.

3. Abdalla Eltayeb (2017). *Mapping woody canopy cover in the semi-arid Sahel: an approach using satellite remote sensing and Google Earth imagery*. **Master of Science in Geomatics. (Main Supervisor)** Department of Physical Geography and Ecosystem Science, Lund University.
4. Enzo Zerega (2018). *Assessing edge pixel classification and growing stock volume in forest stands using a machine learning algorithm and Sentinel-2 data*. Master of Science in Geomatics. **(Co-supervisor)** Department of Physical Geography and Ecosystem Science, Lund University.

GRANTS & AWARDS

- Swedish Resource Council (Vetenskapsrådet): International Postdoctoral Grant, June 2018. (**SEK 3.150.000** / € 306,310 / US\$ 360,460)
- Annual Prize of the Torsten Hägerstrands Foundation for the Promotion of Geographical Research, May 2017 (**SEK 12.000** / € 1.245 / US\$ 1,350)
- Japan Geoscience Union / American Geophysical Union: PhD Travel Grant attend the JpGU/AGU Joint Meeting in Chiba, Japan, April 2017. (**US\$ 1,000** / € 900 / SEK 8.900)
- NordForsk/Atmosphere-Biosphere Studies: Grant to attend Summer School on Effects of Climate Change on Arctic Ecosystems and Societies in Nuuk, Greenland, July 2016. (**€ 3.000** / SEK 29.000 / US\$ 3,275)
- Royal Physiographic Society of Lund: PhD Travel Grant to visit Boston University, USA, September 2015 (**SEK 13.500** / € 1.400 / US\$ 1,500)
- Lund University Centre for Studies of Carbon Cycle and Climate Interactions: Project Seed Grant, July 2015 (**SEK 30.000** / € 3.100 / US\$ 3,400)
- Faculty of Science, Lund University: Travel Grant to attend Doctoral Summer School on “Climate Change – Uncertainties, Thresholds and Coping Strategies” in Graz, Austria, June 2014. (**SEK 9.300** / € 970 / US\$ 1,050)
- Royal Swedish Academy of Science: Margit Althin Grant to present at the 4th iLEAPS Science Conference on "Terrestrial ecosystems, atmosphere, and people in the Earth system" in Nanjing, China, May 2014. (**SEK 14.500** / € 1.500 / US\$ 1,640)
- National Science Foundation of the United States / American Association of Geographers: Junior Scholar Travel Grant to attend the International Geographical Congress in Cologne, Germany, August 2012. (**US\$ 1,250** / € 1,150 / SEK 11,000)
- National Science Foundation of the United States / American Association of Geographers: Junior Scholar Travel Grant to attend the International Geographical Union Regional Conference in Santiago, Chile, November 2011. (**US\$ 1,100** / € 1.000 / SEK 9.750)
- Association of Geographic Information Laboratories for Europe: Student Travel Grant to attend the 12th International Conference on Geographic Information Science in Hannover, Germany, June 2009. (**€ 500** / SEK 4.800 / US\$ 545)
- European Commission Full Graduate Fellowship: MSc in Geospatial Technologies, 09/2008 – 03/2010. (**€ 25.600** / SEK 247.000 / US\$ 27,900)

DEPARTMENTAL / UNIVERSITY RESPONSIBILITIES

- Lund University: Physical Geography Doctoral Student Council, Chair (Spring 2014 – Spring 2015)
- Lund University: Science Doctoral Student Union Working Group, Member (Fall 2014, Spring 2015)
- Lund University: Doctoral Student Union Executive Board, Member (Spring 2015)
- University of Muenster: Erasmus Mundus Student Association Course Representative (Fall 2009)
- Montclair State University: International Student Organization, President (Fall 2004 – Spring 2006)
- Montclair State University: Student Government, Director of Multicultural Affairs (2003 – 2004)

CONFERENCES / SYMPOSIA / WORKSHOPS

INVITED LECTURES

- Abdulhakim Abdi (2017). How the Emirates Natural History Group put me on the road to science. Emirates Natural History Group 40th Anniversay, Abu Dhabi, **United Arab Emirates**.
- Abdulhakim Abdi (2017). Mapping the supply and demand of primary production in African drylands. University of Richmond, Richmond, VA, **United States**.
- Abdulhakim Abdi (2017). On the causes of drought and famine in Somalia. Drought Emergency Meeting, Diaspora Emergency Action and Coordination / Danish Refugee Council, Stockholm, **Sweden**.
- Abdulhakim Abdi (2017). Processing Primary Production Data for Africa. Big Data for a Small Planet, Lund, **Sweden**.
- Abdulhakim Abdi (2015). Supply and Demand of NPP in the Sahel. Less for More or More for Less? Adaptation to decreasing resource availability in the Sahel, Lund, **Sweden**.
- Abdulhakim Abdi (2014). Supply and demand of the products of photosynthesis in Sahelian Africa. Information for Meeting Africa's Agricultural Transformation and Food Security Goals (IMAAFS) Conference, Addis Ababa, **Ethiopia**.

CONFERENCE PRESENTATIONS

- Abdulhakim Abdi (2015). Accounting for the balance between supply and demand of the products of photosynthesis. Barents Summer School on Climate Change Effects, Abisko, **Sweden**.
- Abdulhakim Abdi (2017). Impact of the El Niño – La Niña cycle on African dryland vegetation. Japan Geoscience Union – American Geophysical Union Joint Meeting, Chiba, **Japan**.
- Abdulhakim Abdi, Anton Vrieling, Genesis T Yengoh, Assaf Anyamba, Jonathan Seaquist, Caroline C Ummenhofer, Jonas Ardö (2015). Climatic and Socioeconomic Determinants of the Supply and Demand of Net Primary Production in sub-Saharan Drylands. Annual Meeting of the American Geophysical Union, San Francisco, CA, **USA**.

- Abdulhakim Abdi, Jonathan Seaquist, Lars Eklundh, David E. Tenenbaum, Jonas Ardö. (2014). Dynamics of Supply and Demand of Net Primary Production in the Semi-arid Sahel. Second Global Land Project Open Science Meeting, Berlin, **Germany**.
- Abdulhakim Abdi (2013). Preliminary analysis of ecosystem supply and human demand for net primary production in the semi-arid Sahel. European Space Agency Living Planet Symposium, Edinburgh, **Scotland**.
- Abdulhakim Abdi, Michael Wolovick, Kirsty Tinto, Indrani Das, Timothy Creyts, Robin E. Bell. (2011). Mapping the Spatial Extent of Basal Frozen-on Ice in Northern Greenland. Annual Meeting of the American Geophysical Union, San Francisco, CA, **USA**.

SCIENCE COMMUNICATION

POPULAR SCIENCE ARTICLES

- *Somalia conflict and famine: the causes are bad governance, not climate change.* (2017) **The Conversation**: <https://theconversation.com/somalia-conflict-and-famine-the-causes-are-bad-governance-not-climate-change-84166>
- *Chad is the country most vulnerable to climate change – here's why.* (2017) **The Conversation**: <https://theconversation.com/chad-is-the-country-most-vulnerable-to-climate-change-heres-why-78423>
- *The downward spiral of conflict and famine in Somalia is due to the absence of good governance, not climate.* (2017) **Medium**: <https://medium.com/@hakimabdi/the-downward-spiral-of-conflict-and-famine-in-somalia-is-due-to-the-absence-of-good-governance-b24d3f4940d7>

MEDIA COVERAGE

- **The Guardian**: 'Population growth outpaces food supply' in conflict-ravaged Sahel. (Oct. 22, 2014)
- **Climate News Network**: Climate renews famine risk to Africa's Sahel. (Oct. 20, 2014)
- **Skånska Dagbladet (Local Swedish newspaper)**: Problemen öskar i Sahel. (Oct. 18, 2014)

SCIENCE SERVICE

Associate Editor: Remote Sensing in Ecology and Conservation, published by the Zoological Society of London. 12/2017 – Present.

REVIEWED FOR:

- Biogeosciences
- Physical Geography
- Global Ecology and Biogeography
- Land Degradation and Development
- Environment, Development and Sustainability

WORK EXPERIENCE

- **Project Assistant:** Department of Physical Geography and Ecosystem Science, Lund University, Lund, Sweden. 01/2018 – 08/2018. *Supervisor: Prof. Jonas Ardö.*

- **Parental Leave (100%):** 04/2017 – 01/2018.
- **PhD Candidate:** Department of Physical Geography and Ecosystem Science, Lund University, Lund, Sweden. 10/2012 – 03/2017. *Supervisor: Prof. Jonas Ardö.*
- **Geographic Information Specialist:** Lamont-Doherty Earth Observatory, Columbia University, New York, NY, USA. 08/2010 – 10/2012. *Supervisor: Prof. Robin E. Bell.*
- **Project Geoscientist:** Energy, Environment and Infrastructure Unit, Science Applications International Corporation, Hackensack, NJ, USA. 05/2007 – 08/2008. *Supervisor: Mark Hasting.*
- **Geotechnician:** Energy, Environment and Infrastructure Unit, Science Applications International Corporation, Hackensack, NJ, USA. 04/2005 – 05/2007. *Supervisor: Jillian M. Loughlin.*
- **Intern:** Energy, Environment and Infrastructure Unit, Science Applications International Corporation, Hackensack, NJ, USA. 08/2004 – 04/2005. *Supervisor: Yvonne Ciccone.*
- **Ecology Technician:** Terrestrial Environmental Research Center, Environmental Research and Wildlife Development Agency, Abu Dhabi, UAE. 08/1999 – 08/2001. *Supervisor: Dr. Chris R. Drew.*

ADDITIONAL TRAINING

- Atmosphere-Biosphere Studies Summer School: Climate Change Effects on Arctic Ecosystems and Societies in **Greenland** and **Iceland**, *July 2016.*
- Barents Summer School: Climate Change Effects on Arctic Landscapes, Abisko Scientific Research Station, Abisko, **Sweden**, *June 2015.*
- Doctoral Summer School: Climate Change - Uncertainties, Thresholds and Coping Strategies, Graz, **Austria**, *September 2014.*
- European Space Agency 4th Advanced Training Course in Land Remote Sensing, Harokopio University, Athens, **Greece**, *July 2014.*
- Graduate Course on Earth Observation for Climate Change Research, University of Copenhagen, **Denmark**, *October 2012.*