

# Ramdane Orou Sannou

Environmental Economist | Data Scientist



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## Profile

Environmental Economist with strong analytical and quantitative skills. Has research experience in a variety of fields ranging from econometrics, natural resources management to population studies, with a keen interest in the use of data science to generate evidence for better decision-making.

## Education

### PhD in Integrated Management of Environmental Resources,

Technical University of Dresden, Germany | 05/2021 – present  
(Chair of Environmental Management and Accounting)

### Postgraduate Diploma of Environmental Management, *Best Paper Award*

Technical University of Dresden, Germany | 01/2018 – 07/2018

### M.Sc. in Rural Economics & Sociology, *Honors*

University of Parakou, Benin | 10/2015 - 07/2017

### B.Sc. in Rural Economics & Sociology, *Honors*

University of Parakou, Benin | 10/2011 - 07/2014

## Work Experience: Employment

### Doctoral Researcher (Personnel Service Agreement)

**United Nations University** - Institute for Integrated management of material Fluxes and of Resources (UNU-FLORES) | Dresden | 05/2021 – present

My research aims to explain the causal mechanisms underlying communities' social sustainability in agri-food systems. I examine the complex interactions between temporal, spatial, economic, and environmental dimensions of sustainability to provide evidence to help better measure progress toward social sustainability.

#### Key achievements:

- Produced the manuscript of a forthcoming scientific paper (in a peer reviewed journal) using panel data regression to capture the effect of the Africa Great Green Wall initiative on food security,
- Produced the manuscript of a scientific paper (in a peer reviewed journal) using qualitative content analysis and machine learning (word embeddings) to derive relevant indicators of social sustainability (food security, gender inequalities, labor, education, etc.) from the literature,
- Developed a research paper examining two cases of how natural resource management interventions affect rural communities' livelihoods in Benin.
- Completed advanced course modules in Statistics and Remote Sensing of Global environmental Change at TU Dresden.

## Data Fellow

**United Nations Population Fund** | Ouagadougou | 09/2019 – 04/2021

Contributed to UNFPA's research on Civil Registration and Vital Statistics (CRVS) by applying data science methods to understand the proximate determinants of vital events' registration and generate knowledge products related to vital statistics in Burkina Faso.

#### Key achievements:

- Developed R code to automate the production of tables and graphs presenting the completeness of birth registration of adolescent mothers at the sub-national level using DHS data,
- Performed statistical modelling to predict the effects of mothers' age and usual residence on birth registration and certificate detention in West and Central African countries,
- Applied Natural Language Processing (NLP) to derive the sensitive social determinants of vital events' registration,
- Delivered hands-on training on R for statisticians from the National Statistics Office in Morocco and Burkina Faso,
- Supported the deployment of *iCivil*, a technology for systematic birth, marriage, and death registration and data generation via a mobile application, computer software, and a data server,
- Produced the Burkina Faso country profile on CRVS: an analysis of the country's civil registration system, data completeness as well as the legal and political framework.

## Work Experience (continued)

### Researcher

**African Union Commission** - Human Resources, Science & Technology Department | Addis-Ababa | 08/2018 – 08/2019

As a Researcher, I worked with the Youth Division on several projects involving research and data analysis to enable senior management to develop policies and programs on youth development at the continental level.

#### Key achievements:

- Drafted the [State of African Youth Report 2019 \(SoAYR\)](#) and Dashboard as leader of a team of 14 Researchers. Work included data collection, centralization, analysis, and visualization - for 55 African countries - on several indicators,
- Participated in shaping the AUC Chairperson's "1 million Youth by 2021" initiative by conducting a feasibility study, data analysis, and visualization on several development indicators that served as evidence for the proposed strategic actions,
- Initiated and managed AUC's youth development-related data and data visualization central data hub on the [Humanitarian Data Exchange \(HDX\) web platform](#),
- Contributed to the African Plan of Action for Youth Empowerment (APAYE), through the development of measurable progress indicators.

## Work Experience: Freelance

### Data Science Consultant

**The Commonwealth Secretariat** | Home-based | Multiple assignments since 2022

- Developed and held sessions on the importance of data science and its applications in development research at the Commonwealth Data Science and Innovation Ecosystem Workshops in the Caribbean and in Africa.

### Research Analyst

**International Fund for Agricultural Development (IFAD)** - Independent Office of Evaluation | Home-based | 04/2021 – 09/2021

- Contributed to the [Sub-regional evaluation of IFAD](#) operations in countries with fragile situations in West Africa (G5 Sahel Countries plus Northern Nigeria), through desk review, data collection, analysis, visualization and reporting.

### Data Science Consultant

**Numbers and People Synergy (NAPS)** | Home-based | Multiple assignments since 2019

- Performed data cleaning and batch calculations for imputing missing values while ensuring cross-country comparability of indicators included in several Development Indices (Pakistan, Australia, ASEAN, African Union, Sports & SDGs, etc).

## Awards, Fellowships & Grants

### • United Nations Population Fund (2019)

Selected as one of 08 fellows from around the world to be part of the inaugural cohort of UNFPA fellows on population data with a special focus on civil registration and vital statistics.

### • Africa Union Commission (2018)

Selected as one of 14 young African researchers to conduct a study on Africa's potential to harness the demographic dividends and write the Status of African Youth Report 2019 (SoAYR).

### • Scholarship from the German Ministry for the Environment, Nature Conservation and Nuclear Safety (2018)

Received a scholarship to attend the 41<sup>st</sup> international postgraduate course on environmental management at the Centre for International Postgraduate Studies of Environmental Management of the Technical University of Dresden.

### • Best Final Paper Award (2018)

My Postgraduate paper at the Technical University of Dresden has been acknowledged - among the top three - with a final paper award, out of 21.

### • Young African Leaders Initiative – YALI (2016)

Selected as one of 100 young West-African with leadership potential to participate in the inaugural training of the YALI Regional Leadership Centre - West Africa in Public Management in Dakar, Senegal.

### • University of Namur, Belgium (2014)

Selected among the top 06 students from the University of Parakou to be part of an exchange program between Belgian and Beninese students.

### • Excellence scholarship from the Beninese Government (2011)

After graduating from high school as the top student in the Alibori region, one of Benin's 12 regions.

## Volunteerism

### Subject Matter Expert

Global Reporting Initiative (GRI) | Home-based | 01/2023 – 02/2023

- Peer reviewing of the French translation of the GRI 13 Sector Standard on Agriculture, Aquaculture, and Fishing.

### Africa Regional Director

International Association of students in Agricultural and related Sciences (IAAS) | 12/2016 – 01/2018

- Elected as IAAS Africa Regional Director, I developed and implemented IAAS regional strategic plan and initiated new IAAS chapters in Senegal, Burkina Faso, Cameroon, Burundi, Tanzania, South Africa.

## Certifications and Expertise

- Manage Successful Impact Evaluation Surveys Certificate by the World Bank Group
- Data Scientist with R Certificate by DataCamp
- Data Science Professional with Python Certificate by IBM on Coursera
- Statistician with R Certificate by DataCamp
- Strategic Planning /Results-Based Management Certificate, University of Wolverhampton - CIDT (UK)
- Public Management Certificate from YALI Regional Leadership Center - West Africa, Dakar
- Social and Economic Networks: Models and Analysis Certificate by Stanford University on Coursera

## Languages and Computer Skills

- **Languages:** French [native] - English [full proficiency / TOEFL : 107/120] - Arabic [basics] - German [basics]
- **Modeling & Programing:** R [advanced], Python [intermediate], SQL [intermediate]
- **Microsoft:** Word [advanced], Excel [advanced], PowerPoint [advanced],

## Publication & Scientific contributions

- **Peer reviewed paper:**  
**Orou Sannou R., Kirschke S., Guenther E. (forthcoming),** The social sustainability of agri-food systems: a review of indicators.  
  
**Orou Sannou R., Bako I., Moumouni I., Bako M. N., Olagoke A. (2019),** [Participatory Management of Tropical Dry Forests in Benin](#), In "Handbook of Research on the Conservation and Restoration of Tropical Dry Forests." Ch.11.
- **Other contributions:**  
**Orou Sannou R., Kirschke S., Guenther E. (2022),** The social sustainability of agri-food systems: a review of indicators  
[Poster presented at the 2022 Dresden Nexus Conference:](#) Biodiversity : stewardship for vital resources in Dresden, Germany.  
  
**Orou Sannou R. (2020),** Understanding Barriers to Vital Events Registration in Burkina Faso through Language Use: Integrating Field Research and Machine Learning Approach  
[Poster presented at the 2020 ConVERGE:](#) Connecting Vital Events Registration and Gender Equality conference co-organized by UNFPA and the International Development Research Center (IDRC) in Ottawa, Canada.

References available upon request.

Dresden, 15/04/2023



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