

## Dr Yacouba YIRA – CV

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### I. Personal information

- Name(s): Yacouba
- Surname: Yira
- Expertise: Climate change, land management & Hydrology
- Email: yira\_y@yahoo.fr
- Phone : +226 70132869
- Skype ID: yira\_y



### II. Education

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- 2012- 2016: PhD in Hydrological impacts of climate and land use change, University of Bonn, Germany.
- 2010 -2011: Master in Integrated Water Management, University of Florence, Italy.
- 2003- 2008: Development Engineering, University of Bobo Dioulasso, Burkina Faso.

### III. Knowledge and Skills

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- Areas of Expertise: Hydrology; integrated water management; Agronomy; Inland valley development; Climate impact study; Water management policy; Irrigation system design; Water supply facility design; hydro-meteorological network design & instrumentation etc.
- Analytical skills: Analytical skills: Numerical modeling methods; process management, inductive reasoning, statistical methods; predictive analytics, multi-variate methods; multi-criteria methods; mathematical programming methods, data mining etc.
- Computer skills: hydrology and water resources management software packages (WASIM, HBV, GR4J, EPANET, HEC-RAS, WEAP, HYDRUS, etc.); GIS, RS and statistical software package (QGIS, ArcGIS, R, STATA, MATLAB etc.); MS-Office.

### IV. Employment history

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- **2016 – to date:** Researcher, Applied Science and Technology Research Institute-IRSAT, Ouagadougou, Burkina Faso.
- **2016 – 2019:** Postdoc, Associate Researcher in hydrology and water management at West Africa Science Centre for Climate Change and Adapted land use (WASCAL), Ouagadougou, Burkina Faso.
- **2012 – 2016:** Junior Researcher, University of Bonn and Center for Development Research (ZEF), Dept. of Geography & Ecology, Hydrology and Water Resources Management, University of Bonn, Germany.
- **2009 – 2012:** Agronomy engineer, Ministry of Agriculture, hydraulic and water resources, Burkina Faso.

### V. Research Interests

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My research interests include hydrological modeling; agricultural water management; hydrological system design and diagnosis; climate impact assessment; land use and land cover change impact; irrigation scheme analysis; hydro-met network design and implementation.

### VI. Contribution to research projects/Institutions

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I have expertise in operational hydrology, hydrological instrumentation and monitoring, climate impacts assessment, and Water management. I have a long-standing experience in agricultural water management working as Regional Coordinator of Irrigated Agriculture for the Ministry of Agriculture, hydraulic and water resources of Burkina Faso for over 5 years. This experience was further extended to inland valley development over two years as Associated researcher for WASCAL under several projects. My expertise in Climate and land use/cover change impact assessment was developed over the past Seven years and included: the instrumentation of several hydro-meteorological observation networks in Ghana, Benin and Burkina Faso, Disaster risk management, specifically hydrological modeling and policy evaluation. Works undertaken that best illustrate my achievements and capabilities include:

**Name of assignment or project** (international competitive call): Disaster Risk Reduction Practice Research and Capacity Building Support to ECOWAS

**Year:** 2018-2019

**Location:** 15 ECOWAS countries

**Funder:** World Bank

**Positions held:** Team-Member

**Activities performed:** 1- Conduct a baseline study on trans-boundary floods and disasters in the ECOWAS region; 2- Develop a regional flood forecasting system integrating existing regional and national systems and provide guidance on open data management; 3- Develop a policy note on a regional (ECOWAS) approach for post disaster recovery and reconstruction planning (including Post Disaster Needs Assessments), capacity building and support through institutions in the region, such as universities; 4- Facilitate training and capacity enhancement for the ECOWAS Commission and experts from member states related to flood forecasting, disaster preparedness and post disaster recovery planning; 5- Provide guidance on strengthening the academic network related to disaster risk management across different disciplines in West Africa and contribute to relevant regional conferences.

**Name of assignment or project** (international competitive call): Capacity building in support of weather, water and climate services in Mali and Niger

**Year:**2019-2020

**Location:** Mali and Niger

**Funder:** World Bank

**Positions held:** Team-Member, Expert in DRR

**Activities performed:** 1-Provide guidance to the World Bank for strengthening technical and human capacity of all relevant stakeholders in Mali and Niger;2-provide tailored short courses to strengthen the technical capacity of the technical experts of the national hydrometeorological services in Mali and Niger;3-Provide guidance to the World Bank on investment planning for effective weather, water and climate services in Mali and Niger.

**Name of assignment or project** (international competitive call): Participatory assessment of flood-related disaster prevention and development of an adapted coping system in Ghana

**Year:** 2018 - 2022

**Location:** Ghana

**Funder:** German Ministry of Education & research through IKARIM “Disaster and Risk Management “ call

**Positions held:** Expert-Hydrology

**Activities performed:** (1) Investigate the current status, gaps, weaknesses, and challenges of the flood risk management and strategy; (2) identify possible actions on reducing the flood-related risk at national level; (3) develop and implement an innovative web-based DSS tool for an inter/trans-disciplinary participatory decision-making process.

**Name of assignment or project** (international competitive call): Managing new risks and opportunities of agricultural development of African floodplains

**Year:** 2016-2019

**Location:** Senegal and Burkina Faso

**Funder:** French Ministry of Foreign Affairs under AGRICORA programme (Agriculture and climatic risk management, tools and research in Africa)

**Positions held:** Expert-Hydrology

**Activities performed:** 1- Analysis of the evolution of agricultural development policies in floodplains 2- Regional and participatory diagnosis of the diversity of exploitation conditions in floodplains and the problems encountered on a sample of representative sites in the region and intervention policies 3- Assessment of hydro-climatic hazards and the effects of developments on water regimes in floodplains and lowland areas 4- Assessment of current risk management modalities and adaptive and resilient capacities of production systems and communities 5- Strengthening the capacities of national research and stakeholder organizations.

**Name of assignment or project** (international competitive call): Climate information for integrated renewable electricity generation

**Year:** 2017 - 2020

**Location:** Volta-Niger basins

**Funder:** German Ministry of Education & research through ER4CS (European Research Area for Climate Services)

**Positions held:** Expert-Hydropower

**Activities performed:** (1) Contribute to screening and mapping potentials of hydropower Renewable Electricity Generation (REG) in West Africa (W/A); (2) regional mapping of peak/low flows in the Volta-Niger basins for the identification of potential locations of mixed hydropower demonstrator; (3) perform WASIM model evaluation, potential impacts of extreme events on hydropower REG, mixed-REG suitability for the case study areas.

## VII. Capacity Building

### Supervision/mentorship of thesis

- MSc. students: 5
- Bachelor: 1

## VIII. Measures of Esteem

Yira Yacouba won a number of research grants from various funding agencies such as World Bank, African Union, European Union, French Government, German Federal Ministry of Education and Research. Yira Yacouba was awarded the WASCAL Core Research Program Fellowship in 2012 in Germany and The Italian Cooperation Fellowship in 2010 in Italy. Yira Yacouba has been serving as a reviewer for several peer-reviewed scientific journals such as Journal of Hydrology, and Water.

## IX. Selected publications

### Peer-reviewed:

- Badou F.D., Hounkè J., Yira Y., Ibrahim M., Bossa A.Y., 2017. Increasing devastating flood events in West Africa: who is to blame? Working Paper: WASCAL Perspective on floods in West Africa.
- Bliefernicht, J., Berger, S., Salack, S., Guug, S., Hingerl, L., Heinzeller, D., Mauder, M., Steinbrecher, R., Steup, G., Bossa, A.Y., Waongo, M., Quansah, E., Balogun, A.A., Yira, Y., Arnault, J., Wagner, S., Klein, C., Gessner, U., Knauer, K., Straub, A., Schönrock, R., Kunkel, R., Okogbue, E.C., Rogmann, A., Neidl, F., Jahn, C., Diekkrüger, B., Aduna, A., Barry, B., Kunstmann, H., 2018. The WASCAL Hydrometeorological Observatory in the Sudan Savanna of Burkina Faso and Ghana. *Vadose Zone Journal* 17. <https://doi.org/10.2136/vzj2018.03.0065>
- Okyere, C.Y., Yira, Y., Gilgenbach, D., 2013. The problem of annual occurrences of floods in Accra: an integration of hydrological, economic and political perspectives. *Theoretical and Empirical Researches in Urban Management* 8, 45–79.
- Salack, S., Bossa, A., Bliefernicht, J., Berger, S., Yira, Y., Sanoussi, K.A., Guug, S., Heinzeller, D., Avocanh, A.S., Hamadou, B., Meda, S., Diallo, B.A., Bado, I.B., Saley, I.A., Daku, E.K., Lawson, N.Z., Ganaba, A., Sanfo, S., Hien, K., Aduna, A., Steup, G., Diekkrüger, B., Waongo, M., Rogmann, A., Kunkel, R., Lamers, J.P.A., Sylla, M.B., Kunstmann, H., Barry, B., Sedogo, L.G., Jaminon, C., Vlek, P., Adegoke, J., Savadogo, M., 2019. Designing Transnational Hydroclimatological Observation Networks and Data Sharing Policies in West Africa. *Data Science Journal* 18, 33. <https://doi.org/10.5334/dsj-2019-033>
- Yira, Y., Aymar, B.Y., Amadou, K., -Louis, F.J., Georges, S., Thomas, Y.B., Mouhamed, I., Bruno, L., 2019. Failure of inland valleys development: a hydrological diagnosis of the Bankandi valley in Burkina Faso. *Model. Earth Syst. Environ.* Yira, Y., Bossa, Y.A., Keita, A., Fusillier, J.L., Serpantié, G., Yaméogo, B.T., Idrissou, M., Lidon, B., 2019. Failure of inland valleys development: a hydrological diagnosis of the Bankandi valley in Burkina Faso. *Modeling Earth Systems and Environment*. <https://doi.org/10.1007/s40808-019-00628-5>.
- Yira, Y., Bossa, A.Y., 2019. Agricultural Expansion-Induced Infiltration Rate Change in a West African Tropical Catchment. *Applied and Environmental Soil Science*, Volume 2019, Article ID 2434512, 9 pages, <https://doi.org/10.1155/2019/2434512>.
- Yaméogo, T, Bossa, A.Y., Torou, B, Fusillier, J-L, Da, D, Yira, Y, Serpantié, G, Somé, F & Dama-Balima, M 2018, 'Socio-Economic Factors Influencing Small-Scale Farmers' Market Participation: Case of Rice Producers in Dano', *Sustainability*, vol. 10, no. 12, p. 4354.
- Yira, Y., Diekkrüger, B., Steup, G., Bossa, A.Y., 2017. Impact of climate change on hydrological conditions in a tropical West African catchment using an ensemble of climate simulations. *Hydrol Earth Syst Sci* 21, 2143–2161. doi:10.5194/hess-21-2143-2017.
- Yira, Y., Diekkrüger, B., Steup, G., Bossa, A.Y., 2016. Modeling land use change impacts on water resources in a tropical West African catchment (Dano, Burkina Faso). *Journal of Hydrology*, 537, 187–199.
- Op de Hipt, F., Diekkrüger, B., Steup, G., Yira, Y., Hoffmann, T., Rode, M., 2018. Modeling the impact of climate change on water resources and soil erosion in a tropical catchment in Burkina Faso, West Africa. *CATENA* 163, 63–77. <https://doi.org/10.1016/j.catena.2017.11.023>
- Op de Hipt, F., Diekkrüger, B., Steup, G., Yira, Y., Hoffmann, T., Rode, M., 2017. Applying SHETRAN in a Tropical West African Catchment (Dano, Burkina Faso)—Calibration, Validation, Uncertainty Assessment. *Water* 9, 101. <https://doi.org/10.3390/w9020101>
- Op de Hipt, F., Diekkrüger, B., Steup, G., Yira, Y., Hoffmann, T., Rode, M., Näschen, K., 2019. Modeling the effect of land use and climate change on water resources and soil erosion in a tropical West African catchment

(Dano, Burkina Faso) using SHETRAN. Science of The Total Environment 653, 431–445.  
<https://doi.org/10.1016/j.scitotenv.2018.10.351>

**Project Reports:**

- Bossa Y.A., Yira Y., T. B. Yaméogo, Torou B. M., G. Serpentier, J.C Poussin, Balima D. M., B. Lidon, Fusillier J. L., Compaoré H., Da Dapola E., B. Barbier, M. Sall, R. Ndiaye, Madiame Cissé, Mollar, Lavigne-Delville, A. Adamczewski, D. Martin, A. Ogilvie, J. Y. Jamin, Girres. 2018. Managing new risks and opportunities of agricultural development of West African floodplains: Scientific report II.
- Bossa, A.Y., Yaméogo, T.B., Yira, Y., Da Dapola, E.C., Somé, F., Serpantié, G., Fusillier, J.L., Lidon, B., Balima, M., 2017. Regional participatory diagnosis of agricultural use of lowlands in Ioba Province, Burkina Faso. Preliminary report, August 2017. GENERIA project, 51p.
- Bossa, A.Y., Yira Y., Yaméogo, T.B., Serpantié, G., Poussin, J.C., Balima, D. M., Lidon, B., Fusillier J.L., Compaoré, H., Da Dapola E., Barbier, B., Sall, M., Ndiaye, R., Madiame, C., Mollar, E., Lavigne-Delville, C., Adamczewski, A., Martin, D., Ogilvie, A., Jamin, J.Y., Girres, J.F., 2017. Managing new risks and opportunities of agricultural development of African floodplains. Progress report, September 2017. GENERIA Project, 32p.

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**Certification**

I certify that (1) to the best of my knowledge and believe, this CV correctly describes me, my qualifications, and my experience.



Date: 25/October/2019