

# Curriculum Vitae

## Address

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## Dr. Abdou ALI

- **Senior Hydroclimatologist** at AGRHYMET Regional Center, Niamey, Niger
  - In charge of the coordination of the regional water resource monitoring and forecasting in CILSS member countries;
  - Coordinator of hydrological seasonal forecasting forum in West-Africa;
  - Scientific coordinator of a number of projects at AGRHYMET;
  - Chairman of the "Climate and Water Resource Sciences" Committee of AGRHYMET Scientific Coordination Unit.
  - Specialist in hydrological modeling, geostatistics and hydro-climate network optimization
- Qualified as Lecturer (Maître de conférences) in February 2006 from the French Ministry of High Education and Scientific Research;
- PhD defended in December 2004;
- 2004 START Young scientist Award
- Nationality: Nigerien;
- Born in 1969, in Bolsi II, Niger
- Married, with four sons

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## Education and Diploma

- 2001~2004: PhD thesis, defended in December 2004 at Institut National Polytechnique Grenoble, France and LTHE (Laboratoire des Transferts en Hydrologie et Environnement). PhD topic: "Modeling the scale invariance of Sahelian rain fields: application to estimation algorithms and climate variability studies".
- 2000~2001: Master's degree in Mechanics of Geophysical Environment (DEA Mécanique des Milieux Géophysiques Environnement) from Joseph Fourier Grenoble I University, France. The topic of the Master thesis: Geostatistical modeling of hydrometeorological variables.
- 1994~1997: Civil Engineering Diploma from Ecole Nationale Polytechnique d'Alger, Algeria, option Hydrology. Topic of the thesis: modeling the spatial structure of the Beni Slimane groundwater quality.
- 1993~1994: Diploma in Mathematics, Physic and Technology from Houari Boumediene Sciences and Technology University in Alger, Algeria.
- 1992: Diploma of Baccalauréat Mathématique Technique (Series E) from lycée technique Dan Kassawa de Maradi, Niger.

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## Further training and scientific visits

- Danish Hydrologic Institute (DHI) on Water Observation and Information System (WOIS),

September 2014 in Copenhagen, Denmark.

- Australian Bureau of Meteorology in July 2011 on extended hydrological prediction, Australia;
- TIGER training workshop in South Africa, in December 2011, on Earth Observation data integration in hydrological models;
- International Research Institute on Climate and Society (IRI) and the Water Center of the Columbia University, NY, USA: one and half month scientific visit in 2011, on seasonal forecasting techniques;
- Regional Center for mapping of resources for development (RCMRD), Nairobi, Kenya: scientific visit in 2010, on the Geospatial Stream Flow Hydrological Model (GeoSFM);
- Training workshop on Project development in Ouagadougou, Burkina Faso, February 2009;
- Training workshop on journalistic communication, Niamey, Niger, December 2008
- Training in scientific writing, Niamey, Niger, July 2008;
- training workshop on strategic environmental assessment, October 2008 at AGRHYMET;
- Two months professional training course on the topic "Tools and practice for impact studies on the environment; EIE", CEFOC - Center of Continuous Training EIER/ETSHER. Ouagadougou Burkina-Faso. Preliminary study, February 1999 and detailed study, November, 1999.
- AMMA summer school: 1-12 September 2003 at Lannemezan-France. Topic: Understanding West-African Monsoon System and its impacts on society.

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## Professional experience

- **AGRHYMET Regional Centre:** Hydroclimatologist, in charge of the regional water resources and climate risks monitoring in CILSS member countries, since September 2007;
- **France:** Post-doctoral position at Ecole Polytechnique de Paris, the Laboratoire de Météorologie Dynamique; from January 2007 to August 2007, on the topic: Satellite rainfall estimation algorithm development for the MeghaTropi satellite mission;
- **AGRHYMET Regional Center:** Sahelian representative in AGRHYMET/IRD (Institute of Research for Development, France) project (1998~1999) on hydrometric and meteorology networks optimization ;
- **National civic service** at the Office of the High Commission of Kandadji dam on the Niger River (evaluation of environmental impact of Dam project) 1997~1998;
- **Ministry of Hydraulics** of Niger: National civic service Water Resources Office (1995), participation to the gauging activities;
- **National Company of Water (SNE):** three months training course at the pumping station of GOUDEL, water quality treatment (1994).

## Teaching experience and coordination of workshops and projects

### Workshop coordination

Below are some of the workshops that I have initiated and coordinated:

- Hydrological modeling for flood forecasting in the Wolta Basin, Workshop held in Niamey, Niger, April 2015
- Expert meeting workshop on improving the seasonal forecasts in West-Africa at the Université Cheik Anta Diop in Dakar (Senegal), June 2014;
- Regional training workshop on hydro-climatic data analysis in collaboration with the Danish Meteorological Institute and ANACIM, Dakar, June 2014;
- Regional training workshop on climate scenarios for impact assessment in water sector for West-

- Africa, January 2014, Ouagadougou.
- Regional Training workshop on flood mapping with the GIS Flood Tool, in collaboration with USGS. February 2014, Niamey, Niger.
- Regional Workshop on rainfall estimation techniques based on merging satellite and ground-based observation data in 2013.
- Regional workshop on hydrological forecasting based on SWAT hydrological model at AGRHYMET in December 2013, in collaboration with University of Ottawa;
- Regional workshop on drought monitoring at AGRHYMET in 2012, in collaboration with Princeton University and UNESCO;
- Regional training workshop on hydroclimatic data quality control techniques, in February 2012;
- Regional Workshop on Hydrological seasonal forecasting in collaboration with IRI, Columbia-University, USA, in May 2011;
- Regional workshop on the development on regional flood management project in collaboration with UNESCO and ICHARM including six countries (Ghana; Benin, Burkina-Faso, Mali, Niger, Togo), in July 2010;
- Annual Regional seasonal discharge forecasting workshop for the main River Basin in West-Africa within the PRESAO process, since 2008;
- Coordination of one month Hydrological modeling workshop with the GeoSFM tool in January 2008 at AGRHYMET;
- Coordination of two weeks workshop, in 2006, at AGRHYMET, on the topic of Rain gauges and hydrometric stations network optimization.

#### Project coordination

Below are some projects that I am or I have been in charge of the development and implementation coordination:

- Coordinator of regional project "climate knowledge based adaption in West-Africa" supported by DANIDA (20012 - 2015);
- Assistant of the coordinator of the project Institutional Support for African Climate Institutions, financed by the African Development BANK (2009 - 2015);
- Coordinator of a joint SMHI (Sweden Meteorological and Hydrological Institute) and AGRHYMET project on the HYPE hydrological model adaptation in the Niger River basin (2012 - 2014);
- Coordinator of West-African component of TIGER Program, funded by the European Space Agency (ESA)
- Coordinator of AGRHYMET contribution in a Hydrological Forecasting project in the Niger River Basin (Projet de prevision hydrlogologique sur le Bassin du Niger - PHBN), founded par the European Commission, period 2008 - 2010
- Coordinator of AGRHYMET contribution in a project: "complementary study for the management scheme in the Niger River Basin: hydrological and climate scenarios for 2025" founded by the French cooperation, period 2009 - 2010.
- Coordinator of the West-African component of the Megha-Tropique satellite mission project (the satellite was launched in 2012)
- Member of the CILSS team in charge of preparing the World Bank Sahel-Initiative (Strengthening disaster resilience in the Sahel: the PRECA-Sahel project and the Sahel Irrigation Initiative Program: SIIP)

#### Teaching and supervision experience:

- Responsible of the hydrometeorology and applied geostatistics courses for the WASCAL master's program on climate change and energy at the University Abdou Moumouni de Niamey, Niger.
- Responsible of the course entitled hydrological expertise for the WASCAL PhD students at the

Abomey Calavi University in Benin.

- Responsible of the course IWRM for Food Security in the Mater of sustainable development at AGRHYMET.
- Responsible of the course: "water resources and climate change and variability" for the Master in IWRM at AGRHYMET
- Responsible of the course "Gridding techniques in water resources" for the engineers in hydrology at AGRHYMET;
- Responsible of the course hydrological modeling for the Master and Engineers degrees at AGRHYMET;
- Supervision of more than six master's degrees in integrated Water Resource management, 1 Engineer degree in hydrology and 1 Engineer degree in Agrometeorology between 2008 and 20123 at AGRHYMET.

## **Associative activity and Networking experience**

- Member of the Executive Committee of the Niger's Association for the Promotion of Invention and Innovation (ANPII) as the President of the Committee for popularization of science.
- Secretariat of the Sub-Saharan network of UNESCO G-WADI ("Water and Development Information for Arid Lands - a Global Network");;
- Chairman of the expert group of the ECOWAS flood Early Warning program.
- Member of WMO expert group on extended hydrological prediction;
- Member of UNESCO expert group on the revision of the hydrological norm;
- Member of The GEOSS (the Global Earth Observation System of Systems) African Water Cycle Coordination Initiative (AfWCCI);
- Chairman of FRIEND (Flow Regimes from International Experimental and Network Data) committee on hydrometrological extremes.
- Coordinator of the West-African component of the TIGER CAPACITY BUILDING FACILITY project led by international consortium (2009 to 2013).
- Coordinator of the West-African hydrological seasonal forecasting and the hydrological component of the PRESAO forum.
- Focal point of the collaboration between AGRHYMET and the International Research Institute on Climate and Society (IRI) of Columbia University, USA.
- Focal point of the collaboration between AGRHYMET and the Danish Meteorological Institute (DMI), Denmark.
- Focal point of the collaboration between AGRHYMET and the Swedish Meteorological and Hydrological Institute (SMHI), Sweden.
- Focal point of the collaboration between AGRHYMET and the Regional Center of Mapping of resources (RCMRD), Kenya, Nairobi.
- Focal point of the collaboration between AGRHYMET and the Regional Center of Mapping of resources (RCMRD), Kenya, Nairobi.

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## **Publications and participation in conferences**

### **Publications under International Review**

Andersson, J., A. Ali, B. Arheimer, F., Traoré: Adapting the Hype Model for Water Resource Assessment in the Niger River basin, 2016: Water Resources Research (submitted)

- Traore, Seydou, Ali A., Tinni H. et al.: AGRHYMET: A drought monitoring and capacity building center in the West Africa Region. *Weather and Climate Extremes* (2014), <http://dx.doi.org/10.1016/j.wace.2014.03.008>
- Andersson, J.C.M.; Ali, A.; Arheimer, B.; Traoré F. (2014) Niger-HYPE: How may climate change affect floods and droughts in the Niger River basin" Paper no. 2. in van Lanen H.A.J.; Demuth, S.; van der Heijden, A. (eds.) *Proceedings of the 7th Global FRIEND-Water conference "Hydrology in a Changing World: Environmental and Human Dimensions"*, held in Montpellier, France, 7-10 October 2014. Wageningen University, Wageningen and UNESCO, Paris
- Laura Vang Rasmussen, O. M. K. Rasmussen, H. Nieto, A. Ali and I. Maiga, 2014: Weather, climate, and resource information should meet the needs of Sahelian pastoralists? *Weather, Climate and Society, American Meteorological Society (in press)*
- Sheffield J., E. Wood; N. Chaney; K. Guan; S. Sadri; X. Yuan; L. Olang; A. Amani; A. Ali; S. Demuth, 2014: A Drought Monitoring and Forecasting System for Sub-Sahara African Water Resources and Food Security. *Bulletin of the American Meteorological Society*, 10.1175/BAMS-D-12-00124.1.
- Browne N., Sarr A., Sylla B., Lamptey B., Diedhiou A., Kamga A., Ali A., Gbobaniyi E., Owusu K., 2013: Climatology, Annual Cycle and Interannual Variability of Precipitation and Temperature in CORDEX Regional Climate. *International Journal of Climatology*
- Panthou G., Vischel T., Lebel T., Blanchet J., Quantin G., Ali A. 2013: Extreme rainfall in west africa : A regional modeling, *Water Resources Research*, DOI: 10.1002/qj.548
- Giannini A., S. Salack, T. Lodoun, A. Ali, A.T. Gaye and O. Ndiaye, 2012: A unifying view of climate change in the Sahel linking intra-seasonal, interannual and longer time scales. *Environ. Res. Lett.* 8 (2013) 024010 (8pp).
- Panthou, G., Vischel T., Lebel T., Quantin G., Favre A-C, Blanchet J., A. Ali, 2012 : From pointwise testing to a regionally vision: an integrated statistical approach to detect 2 non stationarity in extreme daily rainfall. Application to the Sahelian region
- Pierre, C., Bergametti, G., Marticorena, B., Mougou, E., Lebel, T., Ali, A., 2011: Pluriannual comparisons of satellite-based rainfall products over the Sahelian belt for seasonal vegetation modeling, *Journal of Geophysical Research A: Space Physics*, volume 116, issue 18.
- Ali A., 2010: Changements et variabilité climatiques au Sahel: ce que l'observation nous apprend sur la situation actuelle. *Revue grain de Sel*, n°49.
- Amogu O., Descroix L., Yéro K.S., Le Breton E., Mamadou I., Ali A., Vischel T., Bader J.-C., Moussa I.B., Gautier E., Boubkraoui S., Belleudy P. Increasing River Flows in the Sahel?. *Water*. 2010; 2(2):170-199.
- B. Russell, E. Williams, M. Gosset, F. Cazenave, L. Descroix, T. Lebel, A. Ali, and F. Metayer : Radar Rainage, 2010. Comparisons on Squall Lines in Niamey, Niger for the AMMA, *Quarterly Journal of the Royal Meteorological Society*, 1 FEB 2010, DOI: 10.1002/qj.548.
- Lebel T. and Ali A., 2009 : Recent trends in the Central and Western Sahel rainfall regime (1990 - 2007). *Journal of Hydrology*, doi:10.1016/j.hydro.2008.11.030.
- Janicot, S., Thorncroft, C. D., Ali, A., Asencio, N., Berry, G., Bock, O., Bourlès, B., Caniaux, G., Chauvin, F., Deme, A., Kergoat, L., Lafore, J.-P., Lavaysse, C., Lebel, T., Marticorena, B., Mounier, F., Nedelec, P., Redelsperger, J.-L., Ravegnani, F., Reeves, C. E., Roca, R., de Rosnay, P., Schlager, H., Sultan, B., Tomasini, M., Ulanovsky, A. & al (2008) Large-scale overview of the summer monsoon over West Africa during the AMMA field experiment in 2006. IN *Annales Geophysicae*, 26. 2569-2595
- Pellarin, T., A. Ali, F. Chopin, I. Jobard, and J. Bergès, 2008: Using spaceborne surface soil moisture to constrain satellite precipitation estimates over West Africa, *Geophys. Res. Lett.*, 35, L02813, doi: 10.1029/2007GL032243.

- Ali, A., & T. Lebel, 2008: Revisiting the Sahelian Rainfall Index. *International Journal of Climatology* : DOI : 10.1002/joc.1832.
- Ali A., A. Amani, T. Lebel, 2008: Signification et utilisabilité de l'indice pluviométrique au Sahel. *Revue Sécheresse*; vol 19 (4).
- Ali A., A. Amani, T. Lebel and S. Brahim, 2006: Utilisation optimale de l'information pluviométrique des Modèles de Circulation Générale Atmosphérique pour produire des scénarios de pluie aux échelles d'étude d'impact. *Climate Variability and change - Hydrological Impacts: Proceedings of the Fifth FRIEND World Conference held at Havana, Cuba, November 2006. IAHS Publ. 308, 2006.*
- Ali, A., A. Amani, A. Diedhiou, T. Lebel, 2005: Rainfall Estimation in the Sahel. Part 2: Evaluation of Raingauge Networks in the CILSS Countries and Objective Intercomparison of Rainfall Products. *Journal of Applied Meteorology. J. Appl. Meteorology*, **44(11)**, 1707-1722.
- Ali, A., T. Lebel, and A. Amani, 2005: Rainfall estimation in the Sahel. Part 1: Error Function. *Journal of Applied Meteorology*. **44(11)**, 1691-1706.
- Ali, A., A. Amani and T. Lebel, 2004: Utilisation d'un modèle d'erreur pour évaluer les réseaux de mesures pluviométriques et les produits satellitaires. *Revue Sécheresse*, N°4.
- Ali, A., T. Lebel, and A. Amani, 2003: Invariance in the spatial structure of Sahelian rain fields at climatological scales. *Journal of Hydrometeorology*, 4(6) 996-1011.

### Conference participations

I have presented AGRHYMET Regional Center and participated in more than thirty international workshops and conferences, since 2008. I am also an associated scientific reviewer for some International Journals.

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## Computer Skills

- Proficiency in programming languages FORTRAN and R
  - Knowledge of C programming language
  - Good knowledge of Windows and Linux environments
  - Good knowledge of office software: Word, Latex, Excel
  - Proficiency in Hydrological modelling software: GeoSFM, SWAT, Topmodel, HYPE
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## Award

"2004 START Young scientist Award» for the publication: Ali, A., T. Lebel, and A. Amani, 2003. Invariance in the spatial structure of Sahelian rain fields at climatological scales. *Journal of Hydrometeorology*, 4(6) 996-1011.

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## Languages

Zarma (mother tongue), French (writing and spoken, fluently), English (writing and spoken).

I hereby certify that all the information in this CV are right. Abdou Ali, Niamey, January, 2016

