

Date of Birth	December 1978	Phone	(+1) 530 219 8438
Nationality	Lebanese / British	Emails	adaccache@ucdavis.edu andre_daccache@hotmail.com

Education

PhD Hydraulic Engineering, Politecnico di Bari, Italy, 2008:

Title: “Integrated simulation models for the analysis of pressurized irrigation systems”

MSc in Land and water resources management, International Mediterranean Agronomic Institute of Bari, Italy, 2004:

Title: “Hydraulic interface between distribution network and on-farm irrigation system”

MSc in crop production, Lebanese University, Lebanon, 2002:

Title: “Effect of water stress timing on cotton production in the central Bekaa valley”

Agricultural Engineering, Lebanese University, Lebanon, 2000.

Other qualifications

- National Academic Qualification at Associate Professor level (Abilitazione Scientifica Nazionale 07/B1) valid till 4/4/2023
- “Rita Levi Montalcini” grant for early career researchers (March 2014)
- Associate Fellow of the Higher Education Academy (UK)
- Member of the Order of Engineers and Architects of Beirut - Lebanon

Languages

- Fluent in Arabic, French, English and Italian
- Intermediate in Spanish

Professional experience

Assistant Professor, University of California (Davis), Department of Biological and agricultural Engineering, September 2017.

Senior Consultant, International Mediterranean Agronomic Institute of Bari (CIHEAM), Feb 2015 to Jan 2017:

Activities:

- Writing proposals
- Develop tools and software for different water for agriculture application (Open access, available upon request)
 - COPAM GIS: Design and performance analysis model for large pressurized on-demand water distribution systems (GIS interface model)
 - SIM Safe Irrigation Management: Pathogens risk model for irrigation with treated waste water
 - OptGate: Optimization of gated pipes for uniform water application
- Teaching and supervision of MSc students
- Training and Cooperation with North African countries
- Projects:
 - Adaptation to Climate Change of the Mediterranean Agricultural System (ACLIMAS- EC SWIM program)
 - Fostering Water Agriculture Research and Innovation in Malta (FOWARIM- EU Twinning)

- Development and application of integrated technological and management solutions for wastewater treatment and efficient reuse in agriculture tailored to the needs of Mediterranean African Countries (MADFORWATER (EU H2020))
- Internet of Food & Farm 2020 (EU H2020)
- Strengthening Agricultural Water Efficiency and Productivity on the African and Global level (FAO)

Academic Fellow- Agricultural water management, Department of Environmental Science and Technology, Cranfield University, UK, Jan 2009- Feb 2015.

Research activities & consultancies:

- Hydro-social and environmental impacts of sugar cane production on land use and food security – an international programme to foster trans-disciplinary science, networking and community building
- Engineering better irrigation in turf: Quantifying impacts of application uniformity on turf quality in golf (Client: STERF)
- Blankney Estate irrigation scheme development – a management information system to optimise water and energy efficiency (Client: Blankney Estate)
- Design of water distribution network to irrigate 3,000 ha of grass for chlorophyll production (Client: Blankney Estates)
- Precision irrigation for field scale horticulture (Client: DEFRA)
- Assessing the international market for a control release animal repellent in the micro-irrigation sector (Client: Kaneka Corporation-Japan)
- Are potatoes a low-impact food for GB consumers compared with rice and pasta? (Client: Potato Council)
- Development of a horticulture water strategy for the Eden Project (Client: Eden Project)
- Assessment of the impacts of climate change and changes in land use on future water requirement and availability for farming, and opportunities for adaptation (Client: DEFRA)
- Assessing the winter drought risks to 2012 potato production in England and Wales (Client: AHDB)
- Climate change and seasonal variation impacts on electrical earthing installations (Client: EDF Energy Ltd)
- Metheringham Delph- An environmental and water resource appraisal for irrigation abstraction (Client: Environment Agency and Blankney Estate)
- Benchmarking irrigation efficiency and crop productivity in England (Client: DEFRA, McCain, Sainsbury and Branston)
- Climate change impact on potato production and water needs in UK (Client: AHDB)
- Systematic reviews:
 - What are the projected impacts of climate change on food crop productivity in Africa and South Asia? (Client DFID) (<https://goo.gl/CiOOYv>)
 - Knox, J., Daccache, A. and Hess, T. (2013) What is the impact of infrastructural investments in roads, electricity and irrigation on agricultural productivity? CEE review 11-007. Collaboration for Environmental Evidence: www.environmentalevidence.org/SR
- Climate change impacts on outdoor sport in England (Client: Sport England)
- Efficiency supply of water for agriculture: exploring collaborative approaches and use of on-farm storage (Client: Defra)
- Development of a Climate and Water Strategy for Cricket Grounds (Client: ECB)
- Water footprint of Branston potato supply chain (Client: Branston)
- Economic evaluation of the agricultural land loss at Woburn site (Client: Woburn golf Club)
- Assessing climate change impacts on land use in Suffolk Coastal Heath- Area of outstanding natural beauty (Client: National Farming Union)
- Understanding the impact of climate change on the growing and storage of PepsiCo's agricultural raw materials throughout Europe: Scoping study (Client: PepsiCo);
- Justification of need and efficient use of water at the Ashford Mannor Golf Club

Consultant, Euro Mediterranean Centre for Climate Change (CMCC), University of Sassari, Italy, Oct 2012 to March 2013:

Main activities:

- ClimAfrica (FP7): Climate and land use suitability for Maize, Sorghum and Millet under current and future climate.
- Current and future land suitability of winter wheat crop- Global analysis
- Water Availability and Security in Southern Europe and the Mediterranean (WASSERMED) (EU FP7): Assessing volumetric water need of irrigated crop of Sardinia Island under different technology, management and land use change scenarios.

Scientific Researcher, land and water resources department, International Mediterranean Agronomic Institute of Bari (CIHEAM), Italy, Nov 2003-Jan 2009:**Main activities and projects involved:**

- Re-orientation of the cropping pattern of Apulia Region for a sustainable rural development (Client: Apulia Region)
- Hydrogeologic safeguard for environment protection (Client: Apulia Region)
- Wetlands: Identification of sustainable strategies for environmental protection in the Candelaro wetland area (EU FP7 project)
- Water Scenarios for Europe and Neighboring States (SCENES project) (EU FP7 project)

Academic activities

- Cranfield University
 - Teaching and students supervision
 - Training courses for agribusinesses as part of Advanced Training Programme (AATP)
 - Workshop and training for UK farmers as part of UK Irrigation Association (UKIA)
 - Admission tutor for water programme (Environmental water management; Community & water sanitation; Water & waste water Engineering)
- International Mediterranean Agronomic Institute of Bari (IAMB)
 - Lecturer in the MSc Land & Water Resources Management course
 - Design, operation, maintenance and performance evaluation of farm trickle irrigation systems
 - Lecturer and tutor of an online training course (Innovation in agricultural engineering)
 - Sprinkler and trickle on-farm irrigation systems: impacts and interactions with off-farm irrigation systems

Training & Short Courses

- Do it yourself: Geoapps, ESRI, online course, March 2017
- Earth Imagery at Work, ESRI, online course, March 2017
- PGCAP (Postgraduate Certificate in Academic Practices), Cranfield University, 2012-2014.
- Project management and Business Skills development, School of Management, Cranfield University, 2011.
- Irrigation modeling, Utah State University, USA, 2007.
- Water Evaluation and Planning System, Stockholm Environment Institute, 2007.
- VB.net and ADO.net, Microsoft technical education center, Bari, Italy, 2005.
- Implementation of Environmental Impact Assessment, Mediterranean Agronomic Institute of Chania, Greece, 2005.
- Evaluation of irrigation systems, Centro Regional de Estudios del Agua, Spain, 2004.

Scientific Papers

- 1) González Perea R., **Daccache A.**, Rodríguez Díaz J. A., Camacho Poyato E. and Knox J. W. (2017). Precision Agriculture Modelling impacts of precision irrigation on crop yield and in-field water management. <http://doi.org/10.1007/s11119-017-9535-4>
- 2) Haro-monteagudo, D., **Daccache, A.**, & Knox, J. (2017). Exploring the utility of drought indicators to assess climate risks to agricultural productivity in a humid climate. *Hydrology Research*, 1–13. <http://doi.org/10.2166/nh.2017.010>
- 3) Morris, J., Else, M. A., El Chami, D., Daccache, A., Rey, D., & Knox, J. W. (2017). Essential irrigation and the economics of strawberries in a temperate climate. *Agricultural Water Management*, 194, 90–99.
- 4) Knox, J.W., **Daccache, A.**, Hess, T.M., and Haro, D. (2016). Meta-analysis of climate impacts and uncertainty on crop yields in Europe. *Environmental Research Letters* .Vol 11 number 11.
- 5) Fouial A., Khadra R., **Daccache A.**, Lamaddalena N. (2016). Modeling the impact of climate change on pressurized irrigation distribution systems: use of a new tool for adaptation strategy implementation. *Biosystems Engineering* 150 pp182-190.
- 6) Hess, T.M., Sumberg, J., Biggs, T., Georgescu, M., Haro-Monteagudo, D., Jewitt, G., Ozdogan M., Marshall M., Thenkabail P., **Daccache A.**, Marin F., Knox J.W. (2016). A sweet deal? Sugarcane, water and agricultural transformation in Sub-Saharan Africa. *Global Environmental Change* 39, 181–194.
- 7) Rey D., Holman I.P., **Daccache A.**, Morris J., Weatherhead E.K. and Knox J. W. (2016). Modelling and mapping the economic value of supplemental irrigation in a humid climate. *Agricultural Water management*. Volume 173:13–22.
- 8) Hess T.M., Chatterton J., **Daccache A.** (2016).The impact of changing food choices on the blue water scarcity footprint and greenhouse gas emissions of the British diet: The example of potato, pasta and rice. *Journal of Cleaner Production*. 112 pp 4558-4568
- 9) **Daccache A.**, D’Agostino D., Lamaddalena N. and El Chami D. (2016). A decision tool for sustainable agricultural policies: The case of water saving scenarios for Apulia Region (Southern Italy). *Water Policy* 18: 126–142
- 10) Mereu S., Sušnik J, Trabucco A., **Daccache A.**, Vamvakeridou-Lyroudia V, Renoldi S., Virdis A., Savić D., Assimacopoulos D. (2016). Operational resilience of reservoirs to climate change, agricultural demand, and tourism: a case study from Sardinia. *Science of the Total Environment*. Volume 543, Part B, , Pages 1028–1038
- 11) Perez-Ortola M., **Daccache, A.** And Knox J.W. (2016). Simulating Modelling irrigation and fertilizer use for chlorophyll production. *Japanese Society of Grassland Science* Volume 62, Issue 2 pp. 102–111
- 12) Hess T.M., **Daccache A.**, Daneshkhah A., Knox J.W. (2016). Scale impacts on spatial variability in reference evapotranspiration. *Hydrological Sciences Journal*.
doi: 10.1080/02626667.2015.1083105
- 13) El Chami D. and **Daccache A.** (2015). Assessing sustainability of winter wheat production under climate change scenarios in a humid climate - An integrated modelling framework. *Agricultural Systems*, **140** pp. 19 - 25.
- 14) Weatherhead E.K., Knox J.W., Hess T.M., **Daccache A.** (2015). Exploring irrigation futures: Developments in demand forecasting. *Outlook on Agriculture*. Volume 44, Number 2, pp. 119-126(8)
- 15) Watts G., Battarbee R.W., Bloomfield J.P., Crossman J., **Daccache A.**, Durance I., Elliott J.A., Garner G., Hannaford J., Hannah D.M., Hess T., Jackson C.R., Kay A.L., Kernan M., Knox J., Mackay J., Monteith D.T., Ormerod S.J., Rance J., Stuart M.E., Wade A.J., Wade S.D., Weatherhead K., Whitehead P.G. and Wilby R.L. (2015). Climate change and water in the UK – past changes and future prospects. *Progress in Physical Geography*, Vol. 39(1) 6–28

- 16) El-Chami, D., Knox, J.W., **Daccache, A.**, Weatherhead, E.K.(2015). The economics of irrigating wheat in a humid climate - A study in the East of England. *Agricultural systems* 133: 97-108
- 17) Perez-Ortola,M., **Daccache, A.** And Knox, J.W. (2015). Simulating impacts of irrigation heterogeneity on onion (*Allium cepa* L.) yield in a humid climate. *Irrigation Science*. 33:1-14
- 18) **Daccache, A.**, Knox, J.W., Weatherhead, E.K., Daneshkhah, A., and Hess, T. (2015). Implementing precision irrigation in a humid climate - recent experiences and on-going challenges. *Agricultural Water management*. Volume 147 Pages 135–143
- 19) Hess, T.M., Lennard, A.T. and **Daccache, A.** (2015) Comparing local and global water scarcity information in determining the water scarcity footprint of potato cultivation in Great Britain. *Journal of Cleaner Production*. Vol18: 666-674
- 20) **Daccache, A.**, Sataya, W. and Knox, J.W. (2015). Climate change impacts on rain-fed and irrigated rice yield in Malawi. *International Journal of Agricultural Sustainability*. Volume 13, Issue 2, pages 87-103.
- 21) **Daccache A.**, Ciurana J.S. , Rodriguez Diaz J.A. and Knox J.W (2014). Water and energy footprint of irrigated agriculture in the Mediterranean region. *Environmental Research Letters* Vol9: Issue 12: 4014
- 22) El-Naggar A., Lamaddalena N. and **Daccache A.** (2014). Can Energy saving be achieved by sectoring on-farm irrigation systems? Arab Water Council Journal, Vol. 5 n 2: 52-67
- 23) Mereu V., Trabucco A., **Daccache A.** and Spano D (2013). Assessing future land suitability of winter wheat crop. Proceedings of SISC first annual conference: Climate change and its implications on ecosystem and society, Lecce, 23-24/09/2013. pp. 773-790. ISBN: 978 – 88 – 97666 – 08 – 0.
- 24) Monaghan J., **Daccache A.**, Vickers L., Hess T., Grove I and Knox J. (2012). More ‘crop per drop’ – constraints and opportunities for precision irrigation in European agriculture. *Journal of the science of food and agriculture*. Volume 93, Issue 5: 977–980.
- 25) Knox, J.W., Hess, T.M., **Daccache, A.**, and Wheeler, T. (2012). Climate change impacts on crop production in Africa and South Asia. *Environmental Research Letters*. Volume 7, Issue 3: 4032
- 26) **Daccache, A.**, Lamaddalena, N., and Fratino, U. (2012). "Closure to "Assessing Pressure Changes in an On-Demand Water Distribution System on Drip Irrigation Performance—Case Study in Italy". *Journal of Irrigation and Drainage Engineering*, 138(8), 784–784.
- 27) **Daccache A.**, Weatherhead E.K. Keay C., Jones B., Stalham M.A. and Knox J.W. (2012). Climate change and land suitability for potato production in a humid environment: impacts and adaptation. *Journal for agricultural science*. 150: 161–177.
- 28) **Daccache A.**, Knox J.W., Weatherhead E.K., Stalham M.A. (2011). Impacts of climate change on irrigated potato production in England. *Agricultural and Forest Meteorology*. 151 (2011) 1641– 1653.
- 29) Knox J.W., Tyrrel S.F., **Daccache A.** and Weatherhead E.K. (2011). A geospatial approach to monitoring microbiological water quality risks associated with irrigation abstraction. *Water and Environment Journal*, 25: 282–289.
- 30) **Daccache A.**, Weatherhead K and Lamaddalena N. (2010). Climate change and the performance of pressurized irrigation water distribution networks under Mediterranean conditions: impacts and adaptations. *Outlook on Agriculture*. Vol 39, No4, 277-284.
- 31) **Daccache A.** and Lamaddalena N. (2010). Climate change impacts on pressurized irrigation systems. *Proceedings of the ICE – Engineering Sustainability*, Volume 163, Issue 2, 97-105.
- 32) **Daccache A.**, Lamaddalena N. And Fratino U. (2010). On-demand pressurized water distribution system impacts on sprinkler network design and performance. *Irrigation science*. 28:331-339.
- 33) **Daccache A.**, Lamaddalena N. and Fratino U. (2010). Assessing pressure changes in an on-demand water distribution system on drip irrigation performance – a case study in Italy. *Journal of Irrigation and Drainage Engineering*. Vol. 136, No. 4, 261-270.
- 34) Morris J, Graves A, **Daccache A.**, Hess T. and Knox J. (2010). Towards a framework for the economic assessment of drought risk – an ecosystems approach. *Options méditerranéennes*. Series A (95):139-148.

- 35) Lamaddalena N., Fratino U. And **Daccache A.**, (2007). On-farm Sprinkler Irrigation Performance as affected by the Distribution System: *Biosystems Engineering*, 96(1), 99-109.
- 36) Karam F., Lahoud R., Masaad R., **Daccache A.**, Mounzer O and Roupheal Y (2006). Water use and lint yield response of drip-irrigated cotton to the length of irrigation season: *Agricultural water management*, 85. 287-295.

Book Chapters

- El Chami, D. and **Daccache, A.** (2017). Sustainability of Irrigating Winter Wheat in the East of England—Adaptation at What Cost?. *Frontiers in Sustainability 2015* Volume 1: "Toward a Sustainable Agriculture: Farming Practices and Water Use". Selected papers from 5th World Sustainability Forum 7 – 9 September 2015, Basel, Switzerland. Series ISBN 978-3-03842-333-1 (pdf).
- Mediterra 2016. Zero Waste in the Mediterranean. Natural Resources, Food and Knowledge/ International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM) and Food and Agriculture Organization of the United Nations (FAO) – Paris: Presses de Sciences Po, 2016. ISBN pdf web 978-2-7246-2031-3. Chapter 3: Management of water resources
- Morris J., Ahodo K., Weatherhead E.K., **Daccache A.**, Patel A. and Knox J.W. (2014). Economics of rainfed and irrigated potato production in a humid environment, Economics of water management in agriculture Chapter 4, pp1-97 (Science Publishers)
- Knox J., Weatherhead K., **Daccache A.**, Hess T., and Morris J. (2012). Climate Change Risk Assessment- UK Government Report-Agricultural Sector
- Caliendo A., D'Agostino D.R., **Daccache A.**, De Santis S., Lamaddalena N. (2008). Riorientamenti Produttivi del Territorio Agricolo Pugliese per uno Sviluppo Rurale Sostenibile. CIHEAM- Istituto Agronomico Mediterraneo di Bari, ISBN: 2-85352-395-0.
- Lamaddalena N., **Daccache A.**, Fratino U. and Bonelli R (2006). Salvaguardia e Tutela Idrogeologica dell'Ambiente Naturale. CIHEAM- Istituto Agronomico Mediterraneo di Bari. ISBN: 88-95240-01-4.

Software Skills

- Visual Studio, FORTRAN, Matlab, ArcGis, MapWindow, DotSpatial, Surfer, Erdas Imagine, WEAP, DSSAT, AquaCrop, WaSim, Epanet, Copam.

15 September 2017

Signature

