



# Curriculum vitae

MESFIN TEWOLDE

Version of 15 January 2021

Name and Surname	Mesfin TEWOLDE	Nationality	Eritrean
Profession	Civil Engineer (BScEng) and hydrologist (MScEng)	Date of Birth	07.08.1968
Registration	<a href="#">REG A [REG/2017/1205]</a> / <a href="#">SIA</a>		
Present functions	3D modeler and Civil Engineer	<a href="#">[Online CV]</a>	
Driving License	B (Suisse and South African)		

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## Principal qualifications

- Building construction, design, and supervision,
  - Topographic Survey with Total-Station and Theodolite,
  - 3D building modeler, BIM collaboration with Revit and AutoCAD, Revizto 4, Solibri, BIM360 software
  - Irrigation Infrastructures and dam construction supervision,
  - Small scale earth dam and reservoir design,
  - Study the dynamics of river flows
  - Hydraulic and hydrologic modeling using (HEC-RAS, HEC-HMS, HEC-GeoRAS, HEC-GeoHMS ArcGIS, ArcGIS-Pro, WebGIS and Bentley software such as PondPack, Flow Master, Civil-Storm),
  - Revitalization and development of river course,
  - Flood protection and flood routing,
  - Catchment and reservoir studies, and
  - Protection of berms and river alluvial zones.
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## Languages

Amharic (Lang of Ethiopia)	Maternal Language
French	Good level (B2-C1)
English	Fluent (C2)
Tigrina (Lang of Eritrea)	Fluent (C2)

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## Formal Training

- 2002-2005 **MScEng Degree:** School of Environmental Engineering and hydrology (BEEH), Faculty of Engineering, University of KwaZulu-Natal, Pietermaritzburg, and Durban (South Africa). Research title: « **Flood Routing in Ungauged Catchments Using Muskingum Methods.** » The project was financed by the Water Research Institute of South Africa.
- 1991-2006 **BScEng Degree:** Civil engineering, University of Arbaminch, formerly called: Arbaminch Water Technology Institute, Ethiopia. Project title: « **Hare Irrigation Project, Design Report.** »
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## Further studies

- 2018-2019 **CADSchool, Geneva:** training of Revit (basic and advanced levels) and Autocad 2D basic and advanced level (CAD),
- 2011-2012 **HES-SO (HES-SO.ch), Lausanne (Swiss),** attended engineering courses such as advanced Geomatique and its applications (GEO), Project management and communication (GPR), Construction and environment law (DCN), construction and Structural engineering (CSR), Management and development of water (EAX), Cartography and GIS (SIC), Water treatment and quality and geology and hydrogeology,
- 2008-2011 **University of Fribourg, Switzerland, Collaborator, and Research fellow (Doctoral candidate):** I have studied ArcGIS et IDRISI, PCI-Geomatica (Orthoeng), ERDAS imagery (Orthobase), satellite images and SLEUTH growth model and subsidence of alluvial soils caused by intensive water withdrawal,
- 1999 (10 days) **Sponsored by the University of Bern, Swiss.** Training location - Asmara (Eritrea): 10 days of training management of geographic information WIN 95/NT ArcView, and GPS. Center for the Development and Environment, University of Bern,
- 1997 (6 months) **Sponsored by the Natural Resources Conservation Service, USA,** training location-**Asmara (Eritrea):** hydrology for engineers, geology for engineers, structural analyses for engineers, Documentation for construction projects, irrigation techniques, a study of soil Mechanics,
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## Position held

- 2004-2007 **Researcher in hydrology,** University of Kwazulu-Natal and Central University of Technology (CUT) South Africa,
- 2000-2002 **Construction engineer: Ministry of defense, Eritrea:** Construction of Assab Hospital,



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- 1997-2000 **Construction engineer and design engineer for small scale earth and rockfill dams, Ministry of Agriculture, Asmara (Éritrea)**, Site engineer and dam designer, and
- 1996-1997 **Construction engineer, Sustainable Agriculture, and Environmental Rehabilitation Commission in Tigray Region (SAERT), Mekele (Ethiopia)**: project engineer and leader at the infrastructure construction of Adigudem irrigation project, Mekelle, Region of Tigray. (Northern region of Ethiopia)
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## Professional Experience

- 2019 (3 months) **CSD.ch, Lausanne Building Technique department**: [3D modeling of buildings](#) with Revit. I also worked with Revizto, Navisworks, BIM360, Solibri.
- 2014-still **Geneva, Hydro Engineers (Civileng.ch)**: Hydrological studies and Civil engineering, independent researcher,
- 2014-2014 (3 months) **Canton Geneva, SECOE – dynamic sector for water and meteorology**. Studying and evaluating the hydrology of the “L’Aire” river and the infrastructures along the river. Temporary post. [link](#),
- 2008-2011 **University of Fribourg, Switzerland**: Scientific collaborator (Doctorat): Research in hydrology, geomatics, and GIS, worked with software such as GIS, Geomatica, and IDRISI,
- 2005-2007 **South Africa, Central University of Technology (CUT)**: Research collaborator, Small-scale Rain Water Harvesting Technology,
- 2004-2005 **South Africa, University of Kwazulu-Natal, Collaborator and researcher**: Département of hydrology, worked in the area of hydrological modeling and engineering hydrology,
- 2000-2002 **Eritrean Gov., Construction Engineer**: Supervision of ground plus one building complex, built on an area of 124 square meters of land, including concrete mix control as well as guiding reinforcement bar placement and management of construction material,
- 1997-2000 **Eritrea, Ministry of Agriculture Design section**: Surface irrigation system design and construction such as Chute, drop structures, culverts, primary, secondary and tertiary canals. Design and construction of small scale earth dam and reservoirs,
- 1996-1997 **Ethiopia, Sustainable Agriculture, and Environmental Rehabilitation Commission in Tigray Region (SAERT)**: Irrigation infrastructure construction such as drop structures and earthen canals. Supervision of small scale earth and rockfill dam construction, and
- 1995-1996 **Internship, (Graduation Year) the University of Arbaminch**, formerly called Arbaminch Water Technology Institute, Arbaminch (Ethiopia): a longitudinal and cross-sectional survey of the Kulfo river.



## Publications

### Books and Chapters in Books:

- 2005      Tewolde MH (2005) Flood Routing in Ungauged Catchments using Muskingum Methods. Universal Publishers, Florida, USA. [book-Link](#),
- 2007      Smithers JC, KT Chetty, Frezghi MS, DM and Knoesen Tewolde MH (2007) Development and assessment of a continuous simulation modeling system for design flood estimation, WRC Report No. 1318/1/07. Water Resources Commission, Pretoria, RSA. [Link](#)
- 2009      P S van Heerden, C T Crosby, B Grové, N Benadé, E Theron, R E Schulze & MH Tewolde (2009), Integrating and Updating of SAPWAT and PLANWAT to Create a Powerful and User-Friendly Irrigation Planning Tool, WRC report No. TT 391/08. Water Resources Commission, Pretoria, RSA. [Link](#)

### Peer-reviewed Articles and Reports

- 2006      Tewolde MH and JC Smithers (2006) Flood routing in ungauged catchments using Muskingum methods. Journal of Water South Africa. [Journal- link](#)

### Conferences:

- 2005      Tewolde MH and Smithers JC (2005) Flood Routing in Ungauged Catchments Using Muskingum Methods. Poster International Conference on Integrated Assessment of Water Resources and Global Change: A North-South Analysis, Bonn, Germany. [Link](#).

### Seminars:

- 2008      Tewolde MH (2008), Seminar in Geomorphology: Subsidence in alluvial soils caused by intensive water withdrawal, University of Fribourg, Switzerland. [Link](#)
- 2008      Tewolde MH (2008), Image Orthorectifying and mosaicking using PCI-Geomatica, (Steps are shown using an aerial photograph in Bulle area) and preparation of files for SLEUTH urban and land-use change model, University of Fribourg, Switzerland. [Link](#)
- 2006      Tewolde MH (2006), Rainwater Harvesting Technology for Small Households, School of Civil Engineering and Built Environment, Central University of Technology, Free State, South Africa. [link](#)



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2002                      Tewolde MH (2002), Flood Routing, School of Bioresources Engineering and Environmental Hydrology, University of KwaZulu-Natal, Pietermaritzburg, RSA. (link)

**Accessing Excellence ("Honors Class"):** Before transitioning towards a master's program in hydrology.

2002                      Tewolde MH (2002) Hydrological dam design, School of Bioresources Engineering and Environmental Hydrology, University of KwaZulu-Natal, Pietermaritzburg, RSA (link).

2002                      Tewolde MH (2002) Forest Hydrology, Seven Oaks Experiment Station, School of Bioresources. Engineering and Environmental Hydrology, University of KwaZulu-Natal, Pietermaritzburg. Link

## Undergraduate Papers:

1995                      Tewolde MH, Mitiku B, Tamir M. and Seid S. (1995) Hare Irrigation Project Design Report, Department of Irrigation Engineering, Arbaminch Water Technology Institute, Arbaminch, Ethiopia link

## Sample Project Design Paper, Eritrea:

2000                      Tewolde MH, Tareke, S and Gebrehiwot, T. (2000) Berhnet earth-fill dam report, Land and Water Resource Department, Ministry of Agriculture, Asmara, Eritrea. Link