

Dossier of Professor Ayana Angassa Abdeta

1. PERSONAL PARTICULARS

1.1. Full Name: AYANA ANGASSA ABDETA

1.2. Date of Birth: 05 August 1967

1.3. Marital Status, Nationality and Addresses

1. Married and with four children; Spouse: Fetlework Mengistu Ketsela; Children: Obse Ayana Angassa (daughter, year of birth: April 1996), Lemlem Ayana Angassa (daughter, year of birth: November 1998), Temesgen Ayana Angassa (son, Year of birth December 2000) and Benami Ayana Angassa (daughter, year of birth: January 2010).
2. Nationality: Ethiopian
3. Addresses: Botswana, Gaborone
Phone: +267-75974362 (mobile) +2673650701 (office);
ayana.angassa@gmail.com
Website: <http://www.ayanangassa.com/>

1.4. Professional Qualifications

1. 2018: Certificate of Competence-Moderators Course following the assessment against BQA Unit standards. Training period ended 19th January 2018, Gaborone, Botswana.
2. 2017: Certificate of Competence-Assessors Course following the assessment against BQA Unit standards. Training period ended 08th December 2017, Gaborone, Botswana.
3. 2017: Certificate of Competence-Training of Trainers Course following the assessment against BQA Unit standards. Training period ended 30th June 2017, Gaborone, Botswana.
4. 2015: Certificate in Disaster Risk Management, Humboldt University of Berlin, August 2015, Berlin, Germany.
5. 2013: Postdoctoral Certificate, Alexander von Humboldt Foundation, University of Cologne, Botanical Institute, Range Ecology and Management Group, April 2013, Cologne, Germany.
6. 2010: Postdoctoral Certificate, University of Hohenheim, Institute of Plant Production and Agro-ecology in the Tropics and Sub-tropics and Food security Centre, Stuttgart, Germany.
7. 2007: PhD in Range Ecology, Norwegian University of Life Sciences, Department of International Environment and Development Studies, Aas, Norway.
8. 1999: MSc in Animal Production and Range Ecology, Alemaya University of Agriculture, Alemaya, Ethiopia.
9. 1990: BSc in Agriculture (majoring in Animal Sciences), Alemaya University of Agriculture, Alemaya, Ethiopia.

1.5. Positions Held at Other Universities and Different Organizations

1. **Head of Department** of Animal and Range Sciences, College of Agriculture, Hawassa University, Hawassa, Ethiopia (November 2008-February 2011).
2. **Associate Professor**, Department of Animal and Range Sciences, College of Agriculture, Hawassa University, Hawassa, Ethiopia (15 March 2010-22 July 2016).
3. **Assistant Scientist**, Centre for Ecological and Evolutionary Synthesis, University of Oslo, Oslo, Norway (November 2007-February 2008).

4. **Visiting Postdoctoral Researcher**, University of Hohenheim, Institute of Plant Production and Agro-ecology in the Tropics and Sub-tropics and Food security Centre, Stuttgart, Germany (January-May 2010).
 5. **Alexander von Humboldt Foundation, Georg Forster Postdoctoral Research Fellow**, University of Cologne, Botanical Institute, Range Ecology and Management Group, Cologne, Germany (March 2011 – April 2013).
 6. **Research Fellow**, Norwegian University of Life Sciences, Department of International Environment and Development Studies Aas, Norway (January 2003-October 2007).
 7. **Assistant Professor**, Department of Animal and Range Sciences, College of Agriculture, Debub/Hawassa University, Hawassa, Ethiopia (November 2002-March 2010).
 8. **Lecturer**, Department of Animal Production and Range Management, College of Agriculture, Debub University, Hawassa, Ethiopia (March 1999-October 2002).
 9. **Acting Head of Department** of Animal Production and Range Management Debub/Hawassa University, Hawassa, Ethiopia: September 2000-April 2001.
 10. **MSc Student**, Alemaya University of Agriculture, Alemaya, Ethiopia (October 1997-February 1999).
 11. **Manager**, Borana Cattle Breed Improvement and Genetic Conservation Ranch under the Federal Ministry of Agriculture, Borana, Yabello, Ethiopia (June 1993-October 1997).
 12. **Range and Forage Development Team Leader**, Borana Cattle Breed Improvement and Genetic Conservation Ranch under the Federal Ministry of Agriculture, Borana, Yabello, Ethiopia (July 1992 to May 1993).
 13. **Junior Range and forage development expert**, Borana Cattle Breed Improvement and Genetic Conservation Ranch under the Federal Ministry of Agriculture, Borana, Yabello, Ethiopia (September 1990 to June 1992).
 14. **Internship** in Apiculture production, Kefa Administrative Region, Bonga Awraja Agricultural office, Bonga, Ethiopia (July 1989-September 1989).
- 1.6. Positions Held at Botswana University of Agriculture and Natural Resources**
1. **Associate Professor**, Range Ecology and Management, Botswana University of Agriculture and Natural Resources, Gaborone, Botswana (25 July 2016-to date).
- 1.7. Current Rank**
1. Rank: Associate Professor.
- 1.8. Purpose of Application: Applying for promotion to the rank of Full Professor**
- 1.9. Date of First Employment at Botswana University of Agriculture and Natural Resources**
1. 25 July 2016.
 2. Current Status: Applying for promotion to the rank of Full Professor

2. TEACHING

2.1. Current Teaching Load for Each Semester

Semester 1: 2018/2019					
Academic year	Courses taught	Course code	No. of students	Contact hours/week	SECAT scores
January-May 2019	Range Plant Ecophysiology	RSB212	13	3	4.37
	Range Resource Management	RSB421	10	3	4.3

Semester 1: 2018/2019					
Academic year	Courses taught	Course code	No. of students	Contact hours/week	SECAT scores
August-Dec 2018	Range Ecology	RSB211	14	3	4.85
	Range Grasses, Forbs and Woody Plants	RSB223	12	3	4.28

Semester 2: 2017/2018					
Academic year	Course taught	Course Code	No. of students	Contact hours/week	SECAT score
Jan-May 2018	Range Plant Ecophysiology	RSB212	13	3	4.6

Semester 1: 2017/2018					
Academic year	Courses taught	Course code	No. of students	Contact hours/week	SECAT scores
August-Dec 2017	Range Ecology	RSB211	16	3	4.8
	Range Grasses, Forbs and Woody Plants	RSB223	12	3	4.7

2.2. Courses Ever Taught at Botswana University of Agriculture and Natural Resources

Semester 2: 2016/2017					
Academic year	Course taught	Course Code	No. of students	Contact hours/week	SECAT scores
Jan-May 2017	Range Plant Ecophysiology	RSB212	16	3	4.5

Semester 1: 2016/2017					
Academic year	Course taught	Course code	No. of students	Contact hours/week	SECAT scores
August-Dec 2016	Range Ecology	RSB211	16	3	4.3
	Range Grasses, Forbs and Woody Plants	RSB223	16	3	4.2

2.2.1. Co-Supervision of PhD Thesis Research Projects

1. Berhanu, Yonas. Livelihood diversification potentials of climate-smart based agriculture and adaptation to climate change in southern Ethiopia. PhD Thesis, Norwegian University of Life Sciences, Aas, Norway (to be completed in 2019).
2. Feyissa, K. Impacts of rangeland management practices and land use dynamics on carbon sequestration potentials in Borana rangelands of southern Ethiopia. PhD Thesis, Hawassa University, Hawassa, Ethiopia (completed in October 2018).
3. Debeko, D. Human-climate induced drivers as a process of landscape change in mountain grasslands of Sidama southern Ethiopia. PhD thesis, Hawassa University, Hawassa, Ethiopia (to be completed 2020).
4. Megersa, B. Climate change, cattle herd vulnerability and food insecurity: Adaptation through livestock diversification in Borana pastoral systems of Ethiopia. PhD Thesis, University of Hohenheim, Stuttgart, Germany (completed in December 2013).
5. Teka, H.K. The impacts of changes in land use pattern and rainfall variability on range condition and pastoral livelihood in southern Ethiopia. PhD Thesis, University of Pretoria, Pretoria, South Africa (completed in June 2013).
6. Tadesse, A. Effects of climate change on livestock production and land use dynamics in Sidama zone southern Ethiopia. PhD Thesis, College of Veterinary Medicine, Addis Ababa University, Addis Ababa, Ethiopia (to be completed in 2017).
7. Bora, Z. PhD thesis research on Shrubs invasion as processes of landscape variation: impact on rangeland ecological resources and shrubs-herbaceous species relations in Borana, Southern Ethiopia at University of Chinese Academy of Science, Xinjiang Institute of Geography and Ecology, Urumiqi (to be completed in 2020).

2.2.2. Supervision of Undergraduate Research Projects

I have designed and planned to supervise or co-supervise undergraduate research projects (ABP410 and ABP420) with the following topics:

1. Mabula, S. Role of farmers' indigenous knowledge for adaptation and mitigation to Climate change in Kgalagadi-North District. APB420 project (Supervisor)
2. BARUTI B G KAGO Assessment and comparison of woody plant species composition on BUAN and University of Botswana campuses, and ministry of agricultural development and food security-APB420 project (Supervisor)
3. O.L. Mbenga. The impact of soil moisture or water interval and soil depth on grasses growth: a case study of *Cenchrus ciliaris* and *Panicum maximum* at BUAN and DIBETE (Co-supervisor with Dr. Nsinamwa).
4. K.M. Bulale. Effects of Milking Frequencies on Milk Yield in Donkeys in Werde (Co-supervisor with Dr. Boitumelo).
5. Manko, O. Farmers' indigenous knowledge of the impact of drought and fire on rangeland productivity from 1930's to 2000's in Botswana: an historical perspective

(Supervisor).

6. Tshenolo, S. Role of honeybees in the agricultural landscapes and farmers' indigenous knowledge on the value of honeybees and their Flora in Kgatleng District (Supervisor).
7. Ramogola, T. Effects of bush encroachment on grass species composition and biomass under communal and ranch management systems in Kgatleng district, Botswana (Supervisor).
8. Galefete, L. R. Effects of tree canopy (shading) on herbaceous plant biomass and species composition in Kweneng district (Supervisor).
9. Onkemetse, T.N. The effects of soil types and time of the day on the rate of photosynthesis on Tswana red bean legumes under controlled and uncontrolled environments (Supervisor).
10. Masisa, O. K. Effects of watering frequency and time of the day on the efficiency of photosynthesis in legume plant (Tswana cowpeas) at BUAN (Supervisor).

2.2.3. Mentoring of Post- and Under-Graduate Students

1. Mabula, S. Role of farmers' indigenous knowledge for adaptation and mitigation to Climate change in Kgalagadi-North District. APB420 project (Supervisor)
2. Kago B G Assessment and comparison of woody plant species composition on BUAN and University of Botswana campuses, and ministry of agricultural development and food security-APB420 project (Supervisor)
3. Mbenga, O.L. The impact of soil moisture or water interval and soil depth on grasses growth: a case study of *Cenchrus ciliaris* and *Panicum maximum* at BUAN and DIBETE (with Dr. Nsinamwa).
4. Bulale, K.M. Effects of Milking Frequencies on Milk Yield in Donkeys in Werde (with Dr. Boitumelo).
5. Manko, O. Farmers' indigenous knowledge of the impact of drought and fire on rangeland productivity from 1930's to 2000's in Botswana: an historical perspective (Supervisor).
6. Tshenolo, S. Role of honeybees in the agricultural landscapes and farmers' indigenous knowledge on the value of honeybees and their Flora in Kgatleng District (Supervisor).
7. Ramogola, T. Effects of bush encroachment on grass species composition and biomass under communal and ranch management systems in Kgatleng district, Botswana (Supervisor).
8. Galefete, L. R. Effects of tree canopy (shading) on herbaceous plant biomass and species composition in Kweneng district (Supervisor).
9. Onkemetse, T.N. The effects of soil types and time of the day on the rate of photosynthesis on Tswana red bean legumes under controlled and uncontrolled environments (Supervisor).
10. Masisa, O. K. Effects of watering frequency and time of the day on the efficiency of photosynthesis in legume plant (Tswana cowpeas) at BUAN (Supervisor).
11. Sechele, M. E. MSc candidate (member of advising committee). (In progress). The effect of supplementary feeding with buffel grass (*Cenchrus ciliaris*) and old man saltbush (*Atriplex nummularia* L.) on camels' daily milk yield, milk composition, physico-chemical characteristics and microbial quality.
12. Sunkurta D. 2017. Climate Smart-based Agricultural Technologies for improving feed and livestock productivity reducing GHGE through diversified forage production, feeds and feeding management in southern Ethiopia. MSc Thesis, Hawassa University, Hawassa, Ethiopia.

13. Samuel S. 2017. Impact of climate change on livestock production trend and farmer responses to climate change in crop-livestock farming system in Loka Abaya southern Ethiopia. MSc Thesis, Hawassa University, Hawassa, Ethiopia.
14. Melak, Y. Effects of distance from water points from grassland condition, biomass production and nutritional quality of forage species in Chagni Ranch North-west Ethiopia. MSc Thesis, Hawassa University, Hawassa, Ethiopia.
15. Tonda, O.O. Pastoralists' land rights in southern Ethiopia: Evidences from Gujii and Borana zones.

New research proposals and projects

1. Restoration of degraded rangeland and catchment areas in Malladiepe/Ratauyagae Bamalete Tribal Authority, South East district, Botswana- A project proposal submitted to the National Environmental Fund.

Research team

- Prof. Christopher Tsopito:
 - Prof. Ayana Angassa Abdeta:
 - Dr. Moagi Letso:
 - Dr. Mackenzie Nsinamwa
 - Dr. Koketso Tshireletso
 - Dr. Lawrence Akanyang
 - Professor Benedict Kayombo: Soil and water conservation Scientist
 - Ramotswa District Department of Forest and Range Resources: Facilitate the joint collaboration with the local communities and their active participation for the implementation of the research activities.
 - Malladiepe/Ratauyagae Farmers Association
2. An opportunity or a threat? The use of invasive Prosopis species in the Kgalagadi District, South-western Botswana as feed for livestock, charcoal and bee habitat- A project proposal submitted to the National Environmental Fund.

Research team

- Prof. Ayana Angassa Abdeta
 - Prof. O. R. Madibela
 - Dr. W.S. Boitumelo
 - Prof. Eyassu Seifu
 - Others
3. Role and use of indigenous plants resources as potential feed sources for donkeys in the Kgalagardi District of western Botswana.

Research team

- Prof. O. R. Madibela
- Prof. Ayana Angassa Abdeta
- Dr. W.S. Boitumelo
- Others

4. Livelihood diversifying potential of camel based food security and climate-smart sustainable development in Botswana-Research proposal ongoing and funded by BUAN-RPC-49.

Research team

- Prof. Eyassu Seifu
- Prof. Othusitse Ricky Madibela
- Prof. Demel Teketay Fanta
- Prof. Ayana Angassa Abdeta
- Dr. W.S. Boitumelo
- Others

5. Project proposal for the establishment of New Botanical Garden at Botswana University of Agriculture and Natural Resources. Developed and ready for grant submission.

Research team

- Prof. Ayana Angassa Abdeta
- Prof. Othusitse Ricky Madibela
- Prof. Demel Teketay Fanta
- Professor Mojeremane
- Dr. Eyassu Seifu
- Dr. M. Nsinamwa
- Dr. K. Tshireletso
- Dr. Ricks Chabo
- Others

6. Role of farmers' indigenous knowledge for adaptation and mitigation to Climate change in Kgalagadi-North District, Botswana (BSc student supervision and student name: Summer Mabula)
7. Assessment and comparison of woody plant species composition on BUAN and University of Botswana campuses, and Ministry of Agricultural Development and Food Security-APB420 project (BSc student supervision and student name: Baruti B G Kago)
8. Effect of supplementary feeding with buffel grass (*Cenchrus ciliaris*) and Old man saltbush (*Atriplex nummularia* L.) on yield and composition of free-ranging dromedary camels' milk produced in Tsabong.
 - MSc student: Mosarwa Evans, Sechele
 - Supervisor: Dr. W. Boitumelo,
 - Co-Supervisors: Prof. Ayana A. Abdeta & Prof. Eyassu Seifu
9. The effect of bush encroachment on grass biomass and species composition under communal and ranch management systems in Kgatleng district, Botswana (BSc student supervision and student name: Thabiso Ramogola).
10. Effect of watering frequency and time of the day on the efficiency of photosynthesis on herbaceous plant legume under controlled and uncontrolled environment at Botswana University of Agriculture (BSc student supervision and student name: Ookeditse Masisa).
11. The effect of soil types and time of the day on the rate of photosynthesis on herbaceous

- legume plant under controlled and uncontrolled environment at Botswana University of Agriculture (BSc student supervision and student name: Tiny Ntshebiseng).
12. Role of honeybees in agricultural landscape and farmers' indigenous knowledge about the value of floras and honeybees in Kgatleng district, Botswana (BSc student supervision and student name: Tshenelo Sebopelo).
 13. Farmers' indigenous knowledge on the impact of drought and fire on rangelands productivity from 1930 to year 2000 in Botswana (BSc student supervision and student name: Olerato Manko).
 14. The effect of tree canopy (shading) on herbaceous species biomass and species composition in Kgatleng district, Botswana (BSc student supervision and student name: L. R. Galefete).

2.3. Courses Ever Taught in Other Universities

2.3.1. Supervision at the Botswana University of Agriculture and Natural Resources

1. Berhanu, Y. Livelihood diversification potentials of climate smart based agriculture and adaptation to climate change in southern Ethiopia. PhD Thesis, Norwegian University of Life Sciences, Aas, Norway (to be completed in 2019).
2. Feyissa, K. Impacts of rangeland management practices and land use dynamics on carbon sequestration potentials in Borana rangelands of southern Ethiopia. PhD Thesis, Hawassa University, Hawassa, Ethiopia [part published in *Agroforestry* (2016) doi: 10.1007/s10457-016-9997-9] (to be completed in 2018).
3. Debeke, D. Human-climate induced drivers as a process of landscape change in mountain grasslands of Sidama southern Ethiopia. PhD thesis, Hawassa University, Hawassa, Ethiopia (to be completed 2018).
4. Tadesse, A. Effects of climate change on livestock production and land use dynamics in Sidama zone southern Ethiopia. PhD Thesis College of Veterinary Medicine Addis Ababa University, Addis Ababa, Ethiopia (to be completed in 2018).
5. Bora, Z. Shrubs invasion as processes of landscape variation: impact on rangeland ecological resources and shrubs-herbaceous species relations in Borana, Southern Ethiopia at University of Chinese Academy of Science, Xinjiang Institute of Geography and Ecology, Urumiqi.
6. Sunkurta D. 2017. Climate Smart-based Agricultural Technologies for improving feed and livestock productivity reducing GHGE through diversified forage production, feeds and feeding management in southern Ethiopia. MSc Thesis, Hawassa University, Hawassa, Ethiopia.
7. Samuel S. 2017. Impact of climate change on livestock production trend and farmer responses to climate change in crop-livestock farming system in Loka Abaya southern Ethiopia. MSc Thesis, Hawassa University, Hawassa, Ethiopia.
8. Melak, Y. Effects of distance from water points from grassland condition, biomass production and nutritional quality of forage species in Chagni ranch North-west Ethiopia. MSc Thesis, Hawassa University, Hawassa, Ethiopia.
9. Tonda, O. O. Pastoralists' land rights in southern Ethiopia: Evidences from Gujii and Borana zones. MSc Thesis, Hawassa University, Hawassa, Ethiopia.

2.3.2. Teaching at College of Agriculture, Former Debub University and currently Hawassa University, Hawassa, Ethiopia.

Course Title	Programme	Course Code	Credits	Years
Climate Change and Pastoral Systems	MSc	CCSA523	3	2015-2016
Rangeland and Pasture Science	MSc	ARSc5610	3	2008-2016
Range and Pasture Management	MSc	ARSc5612	3	2008-2016
Range Ecology	BSc	APRM345	3	1999-2002
Range Management	BSc	APRM407	3	1999-2002
Livestock and Pastoral Development	MSc	RD583	3	2014
Feeds and Feeding	BSc	APRM253	2	1999-2001
Forage and Pasture Crops and Management	BSc	APRM326	3	1999-2002
Camel Production	BSc	APRM447	1	2000-2001

2.3.3. Teaching at Wondo-Genet College of Forestry, Hawassa University, Hawassa, Ethiopia

Course Title	Programme	Course Code	Credits	Years
Range Management and Fire Ecology	MSc	DIFO525	3	2009

2.3.4. Teaching in Department of International Environment and Development Studies, Norwegian University of Life Sciences, Aas, Norway (Chapter on pastoral Development)

Course Title	Programme	Course Code	Credits	Years
Dryland Resource Management (part on Pastoralism in Africa)	MSc	EDS350	3	2006

2.3.5. Teaching at Horn Institute of Governance and Development, Ethiopian Civil Service University, Addis Ababa, Ethiopia (class of students from 11 East African countries)

Course Title	Programme	Course Code	Credits	Years
Pastoralism and socio-economic transformation	MSc	HDG5105	3	2015

3.3.6. Teaching in Institute of Plant Production and Agro-ecology in the Tropics and Sub-Tropics University of Hohenheim, Stuttgart, Germany (Chapter on Plant-Animal Interactions and savanna ecosystems).

Course Title	Programme	Course Code	Credits	Years
Agro-ecosystem-Parts on Plant-Animal interaction and African savanna	MSc		3	2010

2.3.7. Supervision of Post-Graduate Students Enrolled in Various Universities

1. Bora, Z. (2017). Shrubs invasion as processes of landscape variation: impact on rangeland ecological resources and shrubs-herbaceous species relations in Borana, Southern Ethiopia at University of Chinese Academy of Science, Xinjiang Institute of Geography and Ecology, Urumiqi.
2. Teka, H.K. (2013). The impacts of changes in land use pattern and rainfall variability on range condition and pastoral livelihood in southern Ethiopia. PhD Thesis, University of Pretoria, Pretoria, South Africa. [Parts published in Indian Journal of Animal Nutrition 29 (4) Online ISSN: 2012) 2231-6744, African Journal of Agricultural Research. (2013) 8 (46), 5872-5883, Asian-Australian Journal of Animal Sciences (2013) 26, No. 3: 366-377 and two others accepted for publication].
3. Megersa, B. (2013). Climate change, cattle herd vulnerability and food insecurity: Adaptation through livestock diversification in Borana pastoral systems of Ethiopia. PhD Thesis University of Hohenheim, Stuttgart, Germany (completed in December 2013). [Published in Agricultural Systems (2014) 130, 23-34, Food Security (2014) 6, 15-28 and Human Ecology (2014) 42, 509-520.

4. Berhanu, Y. Livelihood diversification potentials of climate smart based agriculture and adaptation to climate change in southern Ethiopia. PhD Thesis, Norwegian University of Life Sciences, Aas, Norway (to be completed in 2019).
5. Feyissa, K. Impacts of rangeland management practices and land use dynamics on carbon sequestration potentials in Borana rangelands of southern Ethiopia. PhD Thesis, Hawassa University, Hawassa, Ethiopia [part published in *Agroforestry* (2016) doi: 10.1007/s10457-016-9997-9 and in *Catena* (to be completed in 2018).
6. Debeke, D. Human-climate induced drivers as a process of landscape change in mountain grasslands of Sidama southern Ethiopia. PhD thesis, Hawassa University, Hawassa, Ethiopia (to be completed 2018).
7. Tadesse, A. Effects of climate change on livestock production and land use dynamics in Sidama zone southern Ethiopia. PhD Thesis College of Veterinary Medicine Addis Ababa University, Addis Ababa, Ethiopia (to be completed in 2017).
8. Sechele, M. E. MSc candidate (member of advising committee). (In progress). The effect of supplementary feeding with buffel grass (*Cenchrus ciliaris*) and old man saltbush (*Atriplex nummularia* L.) on camels' daily milk yield, milk composition, physico-chemical characteristics and microbial quality at Tsabong Camel Park.
9. Sunkurta D. (2017). Climate Smart-based Agricultural Technologies for improving feed and livestock productivity reducing GHGE through diversified forage production, feeds and feeding management in southern Ethiopia. MSc Thesis, Hawassa University, Hawassa, Ethiopia.
10. Samuel S. (2017). Impact of climate change on livestock production trend and farmer responses to climate change in crop-livestock farming system in Loka Abaya southern Ethiopia. MSc Thesis, Hawassa University, Hawassa, Ethiopia.
11. Melak, Y. (2017). Effects of distance from water points on grassland condition, biomass production and nutritional quality of forage species in Chagni ranch North-west Ethiopia. MSc Thesis, Hawassa University, Hawassa, Ethiopia.
12. Abera, A. (2017). Pastoralists' strategy and adaptation to climate variability and trends of livestock production in Borana lowland, southern Ethiopia (major advisor).
13. Doyo, J. (2017). Indigenous knowledge practices in response to climate variability: Pastoral herd mobility in semi-arid rangelands of Borana, southern Ethiopia (major advisor).
14. Tonda O.O. (2017). Pastoralists' land rights in southern Ethiopia: Evidences from Gujii and Borana zones. MSc Thesis, Hawassa University, Hawassa, Ethiopia.
15. Daniel, B. (2016). Pastoralists' Indigenous knowledge of soil characterization and management practice in Borana, Southern Ethiopia (co-advisor).
16. Tilahu, M. (2016). Perceptions and attitude of pastoralists on the use and conservation of rangeland resources in Afar region, Ethiopia (major advisor).
17. Asrat, M. (2015). Assessment of rangeland condition, herbaceous productivity and feed quality in Lega-Hidha woreda, Bale/Oromia region (major advisor).
18. Gudisa, M. (2015). Assessment of grazing land condition, herbaceous biomass and chemical composition in Adami Tulu Jido-Kombolcha and Arsi-Negele woredas (major advisor).
19. Tegegn, A. (2012). The impact of water development intervention on pastoral and agro-pastoral communities' livelihoods: The case of Filtu woreda, Somali region. MSc Thesis, Haramaya University (co-advisor).
20. Bora, Z. (2011). Impacts of invasive woody plants on herbaceous species and pastoralists' perception in Borana, Ethiopia. MSc Thesis, Department of Animal and

- Range Sciences, Hawassa University, Ethiopia (major advisor).
21. Teklehaimanot, N. (2011). Pastoralists' perception on rangeland degradation and effect of *Prosopis juliflora* canopy on herbaceous species in Gode district, Somali rangeland, Eastern Ethiopia. MSc Thesis, Department of Animal and Range Sciences, Hawassa University (major advisor).
 22. T/Mariam, T. (2011). Impact of Climate Change and Food Insecurity on Smallholder Farmers' Coping Strategies in Boricha Woreda, Ethiopia. MSc Thesis, Department of Governance and Development Studies, Hawassa University, Ethiopia (co-advisor).
 23. Thomas, M. (2011). Evaluation of local perception, chemical composition and degradability of enset (*Ensete ventricosum*) as animal feed in Wolayta, southern Ethiopia MSc Thesis, Department of Animal and Range Sciences, Hawassa University, Ethiopia (coadvisor).
 24. Teklu, B. (2009). Effect of farming systems on livestock feed resources and feeding systems in Benishangul- Gumuz region, western Ethiopia. MSc Thesis, Department of Animal and Range Sciences, Hawassa University, Ethiopia (co-advisor).
 25. Dula, C.B. (2007). Effects of traditional and project water ponds and herder perceptions on vegetation changes in Borana rangelands of southern Oromia, Ethiopia. MSc Thesis, Department of International Environment and Development Studies, Norwegian University of Life Sciences (co-advisor).
 26. Abebe M.H. (2006). The role of area enclosures and fallow age in the restoration of plant diversity in Northern Ethiopia. MSc Thesis, Department of International Environment and Development Studies, Norwegian University of Life Sciences (co-advisor).

2.4. Other Teaching Assignments.

1. Offered consultative training on "Range condition in relation to veld fires and livestock production and management of invasive and noxious plants" during the workshop on "Fire Management Training for Ranchers/Farmers" in Jwaneng on 25th April 2017 in Botswana, Jwaneng.
2. Invited talk on Indigenous knowledge for enhancing adaptation and resilience in arid ecosystems: Case of Borana pastoralists. International conference on Oromo Studies, May 21-22, 2016 Jimma University, Ethiopia, Jimma.
3. Invited Keynote speech on Challenges of Scientific Approach to Development, March 21 to 22, 2014: National Symposium on "Science, Technology and Innovation for National Development" held at Wollega University, Nekemte, Ethiopia.
4. Invited talk on Pastoral Ecosystems: Challenges and approaches in strengthening drought resilience in the Horn of African pastoral Systems. International Conference on drought resilience in the Horn of Africa, Organized by the German Federal Ministry for Economic Cooperation and Development, March 1, 2012, Berlin, Germany.
5. Invited speech and panel discussion on Pastoralism: Concepts, different perceptions and change, 21-22 January 2011: Oromia Regional State's Pastoral Day held at Robe, Bale Zone, Ethiopia.
6. Offered a six day training on the topic "Rangeland Management and Pastoral Development for extension experts and Development Agents organized by Farm Africa, May 2009, Turmi-South Omo, Hamer-Bena, Ethiopia.
7. Offered a one day training on dryland ecosystems for a group of Post-Graduate students from University of Saskatchewan in 2009 organized by Hawassa

- University, Hawassa, Ethiopia.
8. Offered three days training on rangeland management and utilization for extension workers and pastoral community representatives in April 2009 in Southern Nation Nationalities and Peoples Regional State organized by USAID, Hawassa, Ethiopia.
 9. Offered two days training on rangeland management and utilization for extension workers and pastoral community representatives in August 2009 in Oromia Regional State organized by USAID, Yabello, Ethiopia.
 10. Offered three days training on rangeland management and utilization for extension workers and pastoral community representatives in September 2009 in Afar Region organized by USAID, Awash, Ethiopia.
 11. Public lecture offered on the relative importance of the determinants of African savannas along a dry to mesic gradient: how and why the scientific perception of these determinants has been changed through history. October 9, 2007. Public Lecture, Norwegian University of Life Sciences, Aas, Norway.
 12. Offered four days training on pastoralism and rangeland ecology with special focus on spatial and temporal patterns of resource use October 1999, organized by SOS Sahel, Negelle-Borana, Ethiopia.

3. RESEARCH AND PUBLICATIONS

3.1. Books

3.2. Book Chapters

1. Rangeland restoration initiatives in Ethiopia. In: Pasture and Rangeland Research and Development in Ethiopia (E.D. Yami, A., Assefa, G. and Gizachew, L.), Ethiopian Society of Animal Production, Addis Ababa, Ethiopia. pp 27-43.

My contribution: contributed to the write-up of the chapter and data

2. Past development interventions and current range condition in Borana, southern Ethiopia. In: Rural Development Policies, Trends, Changes and Continuities (E.D. Berhanu, K. And Fantaye, D.) Addis Ababa University, Addis Ababa, Ethiopia. pp. 107-119.

My contribution: Initiated the idea and wrote the chapter.

3.3. Refereed Journal Articles

1. Mabula, S. and **Angassa, A.** (2020). Role of farmer's indigenous knowledge for adaptation and mitigation to Climate Change in Kgalagadi-North District, Botswana. Botswana Journal of Agriculture and Applied Sciences, Volume 14(1): 28–37.

My contribution: Research work conceptualization and design, co-drafted and write up, edited and final proof reading and corresponding Author.

2. Gudisa, M., **Angassa, A.**, Abebe, A., Feyisa, K., Mengistu, A. (2020). Effects of enclosures and rangeland ecological sites on chemical composition of herbaceous species in south central Ethiopia. Botswana Journal of Agriculture and Applied Sciences, 14, (1) 38–46.

My contribution: Research work conceptualization and design, co-drafted and write up, edited, final proof reading and corresponding Author.

3. Berhanu, Y., Olav, L., Nurfeta, A., **Angassa, A.** and Aune J.B. (2019). Methane Emissions from Ruminant Livestock in Ethiopia: Promising Forage Species to Reduce CH₄ Emissions. *Agriculture*, MDPI. *Agriculture* 9(6):130 (1-16) <https://doi.org/10.3390/agriculture906013>.

My contribution: Research work conceptualization and design, co-drafted and write up, edited and final proof reading.

4. Seifu, E., **Angassa, A.** and Shimane, B. W. (2018). Community-based camel ecotourism in Botswana: Current status and future perspectives. *Journal of Camelid Science* 11: 33–48.

My contribution: Research work conceptualization and design, data collection, analysis, co-drafted, write up, edited and final proof reading.

5. Melak, Y., **Angassa A.** and Abebe, A. (2019). Effects of grazing intensity to water source on grassland condition, yield and nutritional content of selected grass species in North-West Ethiopia. *Ecological Processes*. 8:12 (1-13), <https://doi.org/10.1186/s13717-019-0162-z>.

My contribution: Research work conceptualization and design, supervision, co-drafted, write up, edited and final proof reading and corresponding Author.

6. Berhanu, Y., Aune J.B. and **Angassa, A.** (2019). Unlocking the Agricultural Potential of Manure in Agropastoral Systems: Traditional Beliefs Hindering Its Use in Southern Ethiopia. *Agriculture* 2019, 9, 45 (1-17); doi:10.3390/agriculture9030045.

My contribution: Research work conceptualization and design, supervision, co-drafted, write up, edited and final proof reading.

7. Feyisa, K., **Angassa, A.** and Beyene, S. (under review). Effects of long-term ban of fire on carbon dynamics and soil properties in Borana rangelands of Southern Ethiopia. Submitted to *Catena*.

My contribution: Research work conceptualization and design, supervision, co-drafted, write up, edited and corresponding Author and corresponding Author.

8. Feyisa, K., Beyene, S., **Angassa, A.**, Burka, A. and Aynekulu, E. (Under review). Assessment of land use changes and its effect on soil organic carbon and total nitrogen stocks in savanna rangelands, Southern Ethiopia. Submitted to *Journal: Geoderma*.

My contribution: Research work conceptualization and design, supervision, co-drafted, write up, edited and corresponding Author.

9. **Angassa, A.** (under revision). Strengthening drought resilience in the Horn of African pastoral systems: synthesis of existing knowledge from East Africa. Submitted to Botswana Journal of Agriculture and Applied Sciences.

My contribution: Research work conceptualization and design, write up and corresponding Author.

10. Debeke, D., **Angassa, A.**, Abebe, A., Burka, A. and Tolera, A. (2018). Human-climate induced drivers of mountain grassland over the last 40 years in Sidama, Ethiopia: perceptions versus empirical evidence. *Ecological Processes* 7:34 (1-16), <https://doi.org/10.1186/s13717-018-0145-5>.

My contribution: Research work conceptualization and design, supervision, co-drafted, write up, edited and corresponding Author.

11. Koerner, S. E., Smith, M. D., Burkepile, D.E., Hanan, N. P., Avolio, M. L., Collins, S. L., Knapp, A. K., Lemoine, N. P., Forrester, E. J., Eby, S., Thompson, D. I., Aguado-Santacruz, G. A., Anderson, J. P. Anderson, T. M., **Angassa A.**, *et al.*,. Change in dominance determines herbivore effects on plant biodiversity. *Nature Ecology and Evolution* 2, 1925–1932 <https://doi.org/10.1038/s41559-018-0696-y>.

My contribution: Research work conceptualization, data contribution, and design, co-drafted and write up, edited.

12. Teka, H., Madakadze, I. C., Botai, J. O., Hassen, H., **Angassa A.** and Mesfin, Y. (2018). Evaluation of land use land cover changes using remote sensing Landsat images and pastoralists' perceptions on range cover changes in Borana rangelands, Southern Ethiopia. *International Journal of Biodiversity and Conservation* 10(1): 1-11. DOI: 10.5897/IJBC2017.1123, ISSN 2141-243X.

My contribution: Member of supervisory committee, Research work conceptualization and design, co-drafted and write up, edited.

13. Teka, H., Madakadze, I. C., Hassen, A., **Angassa, A.** and Mussa, M. (2018). Impacts of a mineral lick centred land use system on woody vegetation cover in an East African Savanna. *African Journal of ecology*, DOI: 10.1111/aje.12503.

My contribution: Member of supervisory committee, Research work conceptualization and design, co-drafted and write up, edited.

14. Aynekulua, E., Mekuria, W., Tsegaye, D., Feyissa, K., **Angassa, A.**, and Leeuw, J. D. and Shepherd, K. (2017). Long-term livestock enclosure did not affect soil carbon in southern Ethiopian rangelands. *Geoderma* 307 (2017) 1–7.

My contribution: Co-initiated the conceptualization and design of the research work, co-drafted and edited article.

15. Feyisa, K., Beyene, S., **Angassa, A.**, Said, M. Y., Leeuw, J. D., Abebe, A. and Megersa, B. (2017). Effects of enclosure management on carbon sequestration, soil properties and vegetation attributes in East African rangelands. *Catena* 159 (2017) 9–19.

My contribution: Initiated and co-lead the Thesis research work from conceptualization and design, co-drafted, edited and corresponding author.

16. Tilahun, M., **Angassa, A.** and Abebe, A. (2017). Community-based knowledge towards rangeland condition, climate change, and adaptation strategies: the case of Afar pastoralists. *Ecological processes* (2017) 6:29 DOI 10.1186/s13717-017-0094-4.

My contribution: Main supervisor, Research work conceptualization and design, co-drafted and write up, edited and corresponding author.

17. Wako, G Menfese Tadesse and **Ayana Angassa** (2017). Camel management as an adaptive strategy to climate change by pastoralists in southern Ethiopia. *Ecological Processes* (2017) 6:26 DOI 10.1186/s13717-017-0093-5.

My contribution: Main supervisor, Research work conceptualization and design, co-drafted and write up, edited and corresponding author.

18. Linstädter, A., Bora, Z., Tolera, A., **Angassa, A.** (2016). The more invasive the less facilitative? Canopy effects of encroaching and non-encroaching *Acacia* species on understory vegetation in an East African savanna landscape. *Journal of Vegetation Science*. 19: (2) 291–303.

My contribution: Main supervisor, Research work conceptualization and design, co-drafted and write up, edited.

19. Berhanu, Y., Beyene, F., Negatu, L., **Angassa, A.** (2016). Impact of resettlement on vegetation status and rangeland condition in southern Ethiopia. *African Journal of Agricultural Research* 11 (7) 233-542.

My contribution: Research work conceptualization and design, co-drafted and write up, edited and corresponding author.

20. **Angassa, A.** (2016). Vegetation responses to site, elevation and land use in semi-arid rangeland of Southern Ethiopia. *African Journal of Agricultural Research* 11 (5) 379-391.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

21. Tilahun, M., **Angassa, A.**, Abebe, A. and Mengistu, A. (2016). Perception and attitude of pastoralists on the use and conservation of rangeland resources in Afar region, Ethiopia. *Journal of Ecological processes*. 20165:18 DOI 10.1186/s13717-016-0062-4.

My contribution: Main supervisor, Research work conceptualization and design, co-drafted and write up, edited and corresponding author.

22. Abate, T. and **Angassa, A.** (2016). Conversion of savanna rangelands to bush dominated landscape in Borana, southern Ethiopia. *Journal of Ecological Processes* 5:6 DOI 10.1186/s13137-016-0049-1.

My contribution: Research work conceptualization and design, co-drafted and write up, edited and corresponding author.

23. Feyissa, K., Beyene, S., **Angassa, A.**, Megerssa, B., Said, M. Y. and Leeuw, J. D. (2016). Allometric equations for predicting above-ground biomass of selected woody species to estimate carbon in East African rangelands. *Agro-Forestry Systems* DOI: 10.1007/s10457-016-9997-9.

My contribution: Initiated and co-lead the Thesis research work from conceptualization and design, co-drafted, edited and corresponding author.

24. Asrat, M., **Angassa, A.** and Abebe, A. (2015). The effects of area enclosure on rangeland condition, herbaceous biomass and nutritional quality in south East Ethiopia. *Star Journal-Science Technology and Arts Research Journal* 4 (2) 79-88.

My contribution: Main supervisor, Research work conceptualization and design, co-drafted and write up, edited and corresponding author.

25. Takele, T. D., Solomon, R.A.J., Nemomisa, S. Woldemaria, T., **Angassa, A.** (2012). The effect of environmental variables on woody plant species distribution: the case of Boke Salt Valley landscape in Borana, Ethiopia. *Journal for Nature Conservation* 24 (1), 1-11.

My contribution: Research work conceptualization and design, co-drafted and write up, edited and corresponding author.

26. Megersa, B., Markemann, A., **Angassa, A.**, Ogutu, J.O., Piepho, H. and Zárata, A.V. (2014). Impacts of Climate Variability and Change to Cattle Production in Southern Ethiopia: Perceptions and Empirical Evidences. *Agricultural Systems* 130, 23-34.

My contribution: Member of supervisory committee, Research work conceptualization and design, co-drafted and write up, edited.

27. Megersa, B, André Markemann, **Angassa, A.**, Ogutu, J.O., Piepho, H. and Zárata A. V. (2014). Livestock diversification: an adaptation strategy to climate and rangeland ecosystem changes in southern Ethiopia. *Human Ecology* 42, 509-520.

My contribution: Member of supervisory committee, Research work conceptualization and design, co-drafted and write up, edited.

28. Megersa, B., Markemann, A., **Angassa, A.** and Zárata, A.V. (2014). Role of livestock

diversification in ensuring household's food security under changing climate in Borana, Ethiopia. *Food security (Springer)* 6 (1), 15-28.

My contribution: Member of supervisory committee, Research work conceptualization and design, co-drafted and write up, edited.

29. **Angassa, A.** (2014). Effects of grazing intensity and bush encroachment on herbaceous species and range condition in southern Ethiopia. *Land Degradation and Development* 25, 438-451.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

30. Teka H., Madakadze, I. C., Hassan H. and **Angassa, A.** (2013). Mineral lick - centered land use and its effects on herbaceous vegetation in Southern Ethiopia. *African Journal of Agricultural Research*. Vol. 8 (46), 5872-5883.

My contribution: Member of supervisory committee, Research work conceptualization and design, co-drafted and write up, edited.

31. Berhanu, Y., Beyene, F., Negatu, L., and **Angassa, A.** (2013). Influence of resettlement on pastoral land use and local livelihoods in southwest Ethiopia. *Tropical and Subtropical Agroecosystems* 16, 103-117.

My contribution: Research work conceptualization and design, co-drafted and write up, edited and corresponding author.

32. **Angassa, A.**, Oba, G. (2013). Cattle herd vulnerability to climate change: Responses to two-management scenarios in Borana, southern Ethiopia. *Tropical Animal Health and Production* 45 (3) 715-721.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

33. Teka H, Madakadze, I. C., **Angassa, A.** and A Hassen. (2013). Nutritive value of grasses in semi-arid rangelands of Ethiopia: local experience based herbage preference evaluation versus laboratory analysis. *Asian Australian Journal of Animal Sciences*. 26, No. 3: 366-377.

My contribution: Member of supervisory committee, Research work conceptualization and design, co-drafted and write up, edited.

34. Österle, N., **Angassa, A.**, Tadesse, A., Ebro, A., Sauerborn, J., Treydte, A.C. (2012). Crop-livestock farming systems varying with different altitudes in Southern Ethiopia. *Star Journal-Science Technology and Arts Research Journal* 1 (4) 1-13.

My contribution: Co-advisor, Research work conceptualization and design, co-drafted

and write up, edited and corresponding author.

35. Teka, H., Madakadze, I. C., **Angassa, A.** and Hassen, A. (2012). Effects of seasonal variation on the nutritive quality of key herbaceous species in semi-arid areas of Borana, Ethiopia. *Indian Journal of Animal Nutrition* 29 (4) Online ISSN: 2231-6744.

My contribution: Member of supervisory committee, Research work conceptualization and design, co-drafted and write up, edited.

36. Takele, T. D., **Angassa, A.**, Namomisa, S. and Woldemariam, T. (2012). Savanna Land Use and its Effect on Woody Plant Species Diversity in Borana, Southern Ethiopia. *Star Journal, Science Technology and Arts Research* 1 (2), 43-52.

My contribution: Research work conceptualization and design, co-drafted and write up, edited and corresponding author.

37. **Angassa, A.**, Oba, G., Stenseth, N.C. (2012). Community-based knowledge in monitoring the status of indigenous vegetation in African arid landscape. *Consilience: The Journal of Sustainable Development* 8, 70-85.

My contribution: Lead in the review and synthesis of information related to this article work, co-drafted and write up, edited and corresponding author.

38. **Angassa, A.**, Oba, G., Tolera, A. (2012). Bush encroachment control demonstrations and management implications in savannas of southern Ethiopia: 2. herbaceous species adaptations. *Tropical and Subtropical Agroecosystems* 15, 173-185.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

39. **Angassa, A.**, Beyene, S., Oba, G., Treydte, A.C., Linstädter, A., Sauerborn, J. (2012). Savanna land use and its effect on soil characteristics in southern Ethiopia. *Journal of Arid Environments* 81, 67-76.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

40. Terefe, B., Limenih, M., Gure, A., **Angassa, A.** (2011). Impact of *Acacia drepanolobium* (an invasive woody species) on gum-resin resources and local livelihood in Borana, southern Ethiopia. *Tropical and Subtropical Agroecosystems* 14, 1063-1074.

My contribution: Research work conceptualization and design, co-drafted and write up, edited and corresponding author.

41. Beyene, T., Negesse, T., **Angassa, A.** (2011). Effect of farming systems on livestock feed resources and feeding systems in Benishangul-Gumuz region, western Ethiopia. *International Research Journal of Agricultural Science and Soil Science* 1, 020-028.

My contribution: Main supervisor, Research work conceptualization and design, co-drafted and write up, edited.

42. **Angassa, A.**, Oba, G., Treydte, A.C., Weladji, R.B. (2010). Role of traditional enclosures on the diversity of herbaceous vegetation in a semi-arid rangeland, southern Ethiopia. *Livestock Research for Rural Development* 22 (163). <http://www.lrrd.org/lrrd22/9/anga22163.htm>

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

43. Beyene, T., Negesse, T., **Angassa, A.** (2010). Effects of farming systems on floristic composition, yield and nutrient content of forages at the natural pasture of Assosa zone (western Ethiopia). *Tropical and Subtropical Agroecosystems* 12, 583 -592.

My contribution: Main supervisor, Research work conceptualization and design, co-drafted and write up, edited.

44. **Angassa, A.**, Oba, G. (2010). Effects of grazing pressure, age of enclosures and seasonality on bush cover dynamics and vegetation composition in southern Ethiopia. *Journal of Arid Environments* 74, 111-120.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

45. **Angassa, A.**, Oba, G. (2009). Bush encroachment control demonstrations in southern Ethiopia: 1. Woody species survival strategies with implications for herder land management. *African Journal of Ecology* 47, 63–76.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

46. **Angassa, A.**, Oba, G. (2008). Herder perception on impacts of Range Enclosures, Farms and Bush encroachment on the rangelands of Borana, Southern Ethiopia. *Human Ecology* 36, 201-215.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited.

47. **Angassa, A.**, Oba, G. (2008). Effects of management and time on mechanisms of bush encroachment in southern Ethiopia. *African Journal of Ecology* 46, 186-196.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

48. Oba, G., Patrick, B., **Angassa, A.** (2008). Participatory monitoring of biodiversity in East African grazing lands. *Land Degradation and Development* 19, 636–648.

My contribution: Research work conceptualization and design, co-drafted and write

up, edited.

49. **Angassa, A.**, Oba, G. (2007). Relating long-term rainfall variability to cattle population dynamics in communal rangelands and a government ranch in southern Ethiopia. *Agricultural Systems* 94, 715-725.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

50. Abebe, M. H., Oba, G., **Angassa, A.**, Weladji, R.B. (2006). The role of area enclosures and fallow age in the restoration of plant diversity in Northern Ethiopia. *African Journal of Ecology* 44, 507-514.

My contribution: Co-supervisor, research work conceptualization and design, data collection and analysis, drafted and write up, edited.

51. **Angassa, A.**, Tolera, A., Belayneh, A. (2006). The effect of physical environment on range condition in Borana, southern Ethiopia. *Tropical grasslands* 40, 33-39.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

52. **Angassa, A.** (2005). The ecological impact of bush encroachment on the yield of grasses in Borana rangeland ecosystem. *African Journal of Ecology* 43, 14-20.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

53. **Angassa, A.**, Beyene, F. (2003). Current range condition in southern Ethiopia in relation to traditional management strategies: The perception of Borana pastoralists. *Tropical grasslands* 37, 53-59.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

54. **Ayana Angassa.** (2002). The effect of clearing bushes or shrubs on the condition of rangelands in Borana. *Tropical grasslands* 36, 69-76.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited and corresponding author.

55. **Angassa, A.**, Baars, R.M.T. (2000). The ecological condition of encroached and non-encroached rangelands in Borana, Ethiopia. *African Journal of Ecology* 38, 321-328.

My contribution: Research work conceptualization and design, data collection and analysis, drafted and write up, edited.

3.4. Non-Refereed Journal Articles

56. **Angassa, A. (2011)**. Effects of drought on cattle herd dynamics and its implication on local livelihood systems in Borana, Ethiopia. FSC Brief No. 1, University of Hohenheim, Germany.

My contribution: Synthesized existing research work, reviewed relevant literature, write up and edited.

3.5. Conference Proceedings (peer-reviewed)

- 1) Aynekulu, E., Feyissa, K., **Angassa, A.**, Leeuw, J. D. and Shepherd, K. (2014). Effects of controlled grazing management on soil carbon stocks in a dry savannah ecosystem in Ethiopia. World Congress on Agro-Forestry, New Delhi, India; 02/2014.

My contribution: Research work conceptualization and design, drafted and write up, edited.

- 2) Megersa, B., Markemann, A., **Angassa, A.**, Ogutu, J.O., Piepho, H., and Zárata, A. V. (2014). Impacts of climate change and variability on cattle production and linkage with food insecurity in a pastoral region of East Africa. Nexus 2014 conference proceedings on Water, Food, Climate, and Energy, March 5 – 9, 2014, Chapel Hill, North Carolina, USA.

My contribution: Research work conceptualization and design, drafted and write up, edited.

- 3) Megersa, B., Markemann, A., **Angassa, A.**, and Valle Zárata, A. (2013). Climate shocks, food insecurity and its determinants in a pastoral region of southern Ethiopia. Conference proceedings on Global Food Security, Sept 29 to Oct 2, 2013, Noordwijkerhout, The Netherlands.

My contribution: Research work conceptualization and design, drafted and write up, edited.

- 4) Abate, T. and **Angassa, A.** (2013). Landscape change in arid and semi-arid rangeland of Borana, southern Ethiopia: implication for management. Proceedings 22nd International Grassland Congress 15-19 September 2013.

My contribution: Research work conceptualization and design, drafted and write up, edited.

- 5) Hasen-Yusuf, M., **Angassa, A.**, Baumgartner, S., Sauerborn, J., Treydte, A.C. (2012). Sustainable rangeland management: what have we learned about livestock and wildlife herbivory? 4th International Ecosummit Conference, 29 September - 06 October, 2012 Ohio, USA.

My contribution: Research work conceptualization and design, drafted and write up, edited.

- 6) **Angassa, A.**, Oba, G., Tolera, A., Linstädter, A. (2011). Effects of Bush Clearing, Prescribed Fire, and Grazing on Herbaceous Vegetation in Savannas of Southern Ethiopia. Proceedings of Tropentag, October 5 - 7, Bonn, Germany.

My contribution: Research work conceptualization and design, drafted and write up, edited.

- 7) Treydte, A.C., **Angassa, A.**, Bucher, F.S. (2011). Excluding savanna herbivores-what can we learn for trees and grasses? Proceedings of the 9th Kruger Park Networking meeting, Skukuza, South Africa.

My contribution: Research work conceptualization and design, drafted and write up, edited.

- 8) **Angassa, A.** (2011). Pastoralism: Concepts, different perceptions and change. January 2011, Presentation and Panel discussion. Oromia regional State's Pastoral Day in Bale Zone, Robe, Ethiopia.

My contribution: Reviewed relevant literature, preparation of PowerPoint and Presentation.

- 9) **Angassa, A.**, Oba, G., Treydte, A.C. (2010). Role of traditional enclosures and seasonality on herbaceous plant biodiversity in southern Ethiopia. Proceedings of the Tropentag 2010, Zürich, Switzerland.

My contribution: Research work conceptualization and design, drafted and write up, edited.

- 10) **Angassa, A.** (2009). Strategies for enhancing forage productivity in East African Rangelands. Proceedings of the Regional FAO Workshop held in Addis Ababa, Ethiopia.

My contribution: Research work conceptualization and design, drafted and write up, edited.

- 11) Beyene T., Negesse, T. and **Angassa, A.** (2009). Assessment of feed resources and feeding systems in western Ethiopia: The case of Assosa zone, Benshangul-Gumuz Region. In proceedings of 17th annual conference of ESAP "climate change, livestock and people: challenges, opportunities and the way forward" held in Addis Ababa, Ethiopia, September 24 to 25, 2009.

My contribution: Research work conceptualization and design, drafted and write up, edited.

- 12) **Angassa, A.** (2007). Synthesis-report on the MSc training under Global Environmental Facility-Indigenous Vegetation Project (GEF-IVP) University of Oslo, Centre for Ecological and Evolutionary Synthesis, Oslo December 2007. Final Report submitted to the UNEP Secretariat. University of Oslo, Oslo, Norway pp. 138.

My contribution: Summarized MSc theses of 12 students, drafted and synthesis write up of the full report and edited.

- 13) **Angassa, A.**, Baars, R.M.T. (1999). The condition of the Borana rangelands. Proceedings of Ethiopian Society of Animal production.

My contribution: Research work conceptualization and design, drafted and write up, edited.

3.6. Conference Proceedings (not peer-reviewed)

1. Angassa, A. (2017). Indigenous institution and knowledge vs. ecological approach for enhancing adaptation and resilience in Borana pastoral systems of Southern Ethiopia. Poster presentation, Impacts World 2017 Conference, Potsdam, Germany.

My contribution: Research work conceptualization and design, drafted and write up, edited.

2. Tilahun, M., **Angassa, A.** and Abebe, A. (2017). The overlooked knowledge towards range land condition, climate change and their coping strategies: the case of Afar region Ethiopia. National conference held at Ambo University, May 7-8, 2017, Ambo, Ethiopia.

My contribution: Research work conceptualization and design, drafted and write up, edited.

3. Tilahun, M., **Angassa, A.** and Abebe, A. (2017). Community based-knowledge towards rangeland condition, climate change and adaptation strategies: The case of Afar pastoralists. International conference on indigenous knowledge, biodiversity and climate change at Mettu University, Ethiopia. From Jan 27-29, 2017, Bedelle, Ethiopia.

My contribution: Research work conceptualization and design, drafted and write up, edited.

4. **Angassa, A.** (2016). Indigenous knowledge for enhancing adaptation and resilience in arid ecosystems: Case of Borana pastoralists. International conference on Oromo Studies, May 21-22, 2016 Jimma University, Ethiopia, Jimma.

My contribution: Research work conceptualization and design, drafted and write up, edited.

5. **Angassa, A.** (2014). Invited Keynote speech on Challenges of Scientific Approach to Development, 21 to 22 March 2014: National Symposium on “Science, Technology and Innovation for National Development” held at Wollega University, Nekemte, Ethiopia.

My contribution: Research work conceptualization and design, drafted and write up,

edited.

6. **Angassa, A.** (2012). Conference on challenges and approaches in strengthening drought resilience in the Horn of African pastoral systems. International conference on drought resilience in the Horn of Africa, Organized by the German Federal Ministry for Economic Cooperation and Development, March 1, 2012, Berlin, Germany.

My contribution: Research work conceptualization and design, drafted and write up, edited.

3.7. Other Publications

1. **Angassa, A.** (2015). Rangeland assessment methodology manual in Kenya and Ethiopia for the International Livestock Research institute, Nairobi, Kenya October 2015.

My contribution: Research work conceptualization and design, drafted and write up, edited.

2. **Angassa, A.** (2014). Resource Availability Assessment Methodology related to rangelands in the Wabi-Shebele and Genale-Dawa River Basins for Water and Land Resource Centre (WLRC), Ethiopia August 2014.

My contribution: Research work conceptualization and design, drafted and write up, edited.

3. **Angassa, A.** (2010). Technical report on Natural Resource Management impact assessment in Oromia regional State of Ethiopia for the final evaluation of Development Assistance Consortium (EDAC) USAID/FFP Title II DAP/MYAP/PAP assistance in support of the Productive Safety Net Program from 2005 to 2011 in Ethiopia, October 2010.

My contribution: Research work conceptualization and design, drafted and write up, edited.

4. **Angassa, A.** (2009). Technical report on sustainable pastoral land use and possible future interventions in Filtu Somali Region of Ethiopia for EECMY-DASSC Filtu Water and Sanitation Project (FWSP)-November 2009 for the Norwegian Relief Church.

My contribution: Research work conceptualization and design, drafted and write up, edited.

5. **Angassa, A.** (2007). Synthesis-report on the MSc training under Global Environmental Facility-Indigenous Vegetation Project (GEF-IVP) University of Oslo, Centre for Ecological and Evolutionary Synthesis, Oslo December 2007. Final Report submitted to the UNEP Secretariat. pp. 138.

My contribution: Summarized MSc theses of 12 students, drafted and synthesis write up of the full report and edited.

6. **Angassa, A.** (2007). The Dynamics of Savanna Ecosystems and Management in Borana, Southern Ethiopia. PhD Thesis, Norwegian University of Life Sciences, Department of International Environment and Development studies, NORAGRIC, Aas, Norway.

My contribution: Research work conceptualization and design, data collection, analysis, drafted, write up, edited and final proof reading.

7. **Angassa, A.** (1999). Rangeland condition and traditional grazing management in Borana, southern Ethiopia. MSc. Thesis, Alemaya University of Agriculture, Ethiopia.

My contribution: Research work conceptualization and design, drafted and write up, edited.

3.8. Published Abstracts

1. **Angassa, A.** (2017). Indigenous institution and knowledge vs. ecological approach for enhancing adaptation and resilience in Borana pastoral systems of Southern Ethiopia”, which has assigned to the challenge “Counting the economic costs of climate change” Impacts World 2017 Conference, 11-13 October 2017 Potsdam, Germany.

My contribution: Research work conceptualization and design, drafted and write up, edited.

2. **Angassa, A.** (2014). Changes in Scientific Perception: Alternative Approach in the Management of Pastoral Ecosystems. In; Proceedings of the National symposium on Science Technology and innovation for national development 21st – 22nd of March 2014, Wollege University, Nekemte, Ethiopia pp. 18.

My contribution: Research work conceptualization and design, drafted and write up, edited.

3. Abate, T. and **Angassa, A.** (2013). Landscape change in arid and semi-arid rangeland of Borana, southern Ethiopia: implication for management. Proceedings 22nd International Grassland Congress 15-19 September 2013 (responsible equally for the activities related to the preparation and publication of the abstract).

My contribution: Research work conceptualization and design, drafted and write up, edited.

4. Mabula, S. and **Angassa, A.** (2019). Role of farmer’s indigenous knowledge for adaptation and mitigation to Climate Change in Kgalagadi-North District, Botswana. Poster presentation at an international conference VizAfrica 2019 Botswana, November 2019, held at the University of Botswana, Gaborone.

My contribution: Research work conceptualization and design, drafted and write up, edited.

5. **Angassa, A.**, Nsinamwa, M., Bagwasi, N., Mahupeleng, G. N. and Demel Teketay (2019). Proposal to Introduce a Bachelor of Science Programme in Fisheries and Aquatic Sciences/Aquaculture at Botswana University of Agriculture and Natural Resources. International conferences on Aquatic resources and Aquaculture for Sustainable Development, Hawassa, Ethiopia.

My contribution: Participated in need assessment, bench marking, program development, review of literature, preparation and presentation at different levels at the university level and international conference.

3.9. Small Articles Published in Bulletins and Newsletters

1. **Angassa, A.** 2011. Effects of drought on cattle herd dynamics and its implication on local livelihood systems in Borana, Ethiopia. FSC Brief No. 1, University of Hohenheim, Germany.

My contribution: Research work conceptualization and design, drafted and write up, edited.

3.10. Technical Reports

1. **Angassa, A.** (2015). Rangeland assessment methodology manual in Kenya and Ethiopia for the International Livestock Research institute, Nairobi, Kenya October 2015.

My contribution: Desk top review, participated in field data collection, analysis, write up and edited.

2. **Angassa, A.** (2014). Resource Availability Assessment Methodology related to rangelands in the Wabi-Shebele and Genale-Dawa River Basins for Water and Land Resource Centre (WLRC), Ethiopia August 2014.

My contribution: Desk top review, participated in field data collection, analysis, write up and edited.

3. **Angassa, A.** (2010). Technical report on Natural Resource Management impact assessment in Oromia Regional State of Ethiopia for the final evaluation of Development Assistance Consortium (EDAC) USAID/FFP Title II DAP/MYAP/PAP assistance in support of the Productive Safety Net Program from 2005 to 2011 in Ethiopia, October 2010.

My contribution: Desk top review, participated in field data collection, analysis, write up and edited.

4. **Angassa, A.** (2009). Technical report on sustainable pastoral land use and possible future interventions in Filtu Somali Region of Ethiopia for EECMY-DASSC Filtu Water and Sanitation Project (FWSP)-November 2009 for the Norwegian Relief Church.

My contribution: Desk top review, participated in field data collection, analysis, write

up and edited.

5. **Angassa, A. (2007).** Synthesis-report on the MSc training under Global Environmental Facility-Indigenous Vegetation Project (GEF-IVP), University of Oslo, Centre for Ecological and Evolutionary Synthesis, December 2007 Oslo, Norway. Final Report submitted to the UNEP Secretariat. pp. 138.

My contribution: Desk top review, participated in field data collection, analysis, write up and edited.

3.11. Editing

1. **Angassa, A. (2007).** Synthesis-report on the MSc training under Global Environmental Facility-Indigenous Vegetation Project (GEF-IVP) University of Oslo, Centre for Ecological and Evolutionary Synthesis, December 2007 Oslo, Norway. Final Report submitted to the UNEP Secretariat. pp. 138.
2. **Angassa, A. (2015).** Rangeland assessment methodology manual in Kenya and Ethiopia for the International Livestock Research institute, Nairobi, Kenya October 2015.
3. Participated in editing technical papers for Ethiopian Society of Animal Production.

3.12. Theses and Dissertations

1. **Angassa, A. (2007).** The Dynamics of Savanna Ecosystems and Management in Borana, Southern Ethiopia. PhD Thesis, Norwegian University of Life Sciences, Department of International Environment and Development Studies, NORAGRIC, Aas, Norway.
2. **Angassa, A. (1999).** Rangeland condition and traditional grazing management in Borana, southern Ethiopia. MSc. Thesis, Alemaya University of Agriculture, Ethiopia.

3.13. Presentations (unpublished)

1. Mabula, S. and **Angassa, A. (2019).** Role of farmer's indigenous knowledge for adaptation and mitigation to Climate Change in Kgalagadi-North District, Botswana. Poster presentation at an international conference VizAfrica 2019 Botswana, November 2019, held at the University of Botswana, Gaborone
2. **Angassa, A.** and Nsimamwa M. (2017). Range condition in relation to veld fires and livestock production and management of invasive and noxious plants” during the workshop on “Fire Management Training for Ranchers/Farmers” in Jwaneng on 25th April 2017, Botswana, Jwaneng.
3. **Angassa, A. (2016).** Impacts of climate variability, trends of rangeland condition and status of bush encroachment and management options in southern Ethiopia, April 6-8, 2016. Naivasha, Kenya.

4. **Angassa, A.** (2015). Risks of drought on livestock production and pastoral communities livelihoods in southern Ethiopia. Humboldt University, Berlin, Germany.
5. **Angassa, A.** (2014). Science, Technology and Innovation for National Development”: Challenges of Scientific Approach to Development Wollega University, Ethiopia.
6. Feyissa K. and **Angassa, A.** (2013). Impacts of rangeland management practices and land use dynamics on carbon sequestration potential in Borana rangelands of southern Ethiopia 01-06 March 2013, Ouagadougou, Burkina Faso.
7. **Angassa.** (2012). Pastoral Ecosystems: Challenges and approaches in strengthening drought resilience in the Horn of Africa. International workshop on drought resilience in the Horn of Africa, Organized by the German Federal Ministry for Economic Cooperation and Development, March 1, 2012, Berlin, Germany.
8. **Angassa, A.** (2012). The dynamics and mangement of grazing resources in southern Ethiopia. University of Bonn, Institute of Crop Sciences, German, Bonn.
9. **Angassa, A.** (2011). Potentials of community enclosures for the investigation of carbon sequestration in the rangelands of southern Ethiopia May 2011, ILRI, Kenya, Nairobi.
10. **Angassa, A.** (2011). Pastoralism: Concepts, different perceptions and change, Oromia regional State’s Pastoral Day held at Robe, Bale Zone, Ethiopia.
11. **Angassa, A.** (2010). Bush encroachment as a process of landscape change and impacts on livestock production in southern Ethiopia. University of Hohenheim, Institute of Animal production, Germany, Stuttgart.
12. **Angassa, A.** (2010). The ecological mechnisms of bush encroachment and management options in East African rangelands. University of Hohenheim, Institute of Plant Production and Agro-ecology in the Tropics and sub-tropics, Germany, Stuttgart.
13. **Angassa, A.** (2010). Effects of rangeland enclosures on herbaceous plants composition and diversity University of Hohenheim, Food Security Centre, Germany, Stuttgart.
14. **Angassa, A.** (2009). Rangeland Management and Pastoral Development for extension experts and Development Agents. Farm Africa, Turmi-South Omo, Hamer-Bena, Ethiopia.
15. **Angassa, A.** (2009). Dryland ecosystems and climate variability for Post-Graduate students from University of Saskatchewan. Hawassa University, Hawassa, Ethiopia.
16. **Angassa, A.** (2009). Rangeland management and utilization for extension workers and pastoral community representatives in Southern Nation Nationalities and Peoples Regional State organized by USAID, Hawassa, Ethiopia.
17. **Angassa, A.** (2009). Rangeland management and utilization for extension workers and pastoral community representatives in Oromia Regional State organized by USAID,

Yabello, Ethiopia.

18. **Angassa, A.** (2009). Rangeland management and utilization for extension workers and pastoral community representatives in Afar Region organized by USAID, Awash, Ethiopia.
19. **Angassa, A.** (2007). Public lecture to the Scientific community on the relative importance of the determinants of African savannas along a dry to mesic gradient: how and why the scientific perception of these determinants has been changed through history. Norwegian University of Life Sciences, Aas, Norway.
20. **Angassa, A.** (1999). Pastoralism and the new rangeland ecology with special focus on spatial and temporal patterns of resource use, SOS Sahel, Negelle-Borana, Ethiopia.

4. SERVICES

4.1. Service to Universities other than Botswana University of Agriculture and Natural Resources

1. External examiner of PhD dissertation entitled "Use of remote sensing data in native pasture growth modelling to estimate herbaceous biomass production in a tree-shrub savanna in southern Zimbabwe" by Mr W Svinurai, University of Pretoria, South Africa (2020).
2. Internal examiner of MSc dissertation entitled "A comparative assessment of horse manure and urea use as nitrogen source determining seed yield forage and nutritional quality of *Cenchrus ciliaris* and the nutritional quality of its forage residues after seed harvesting" by Tinieri Maeresera, University of Botswana (2020).
3. Member and chairperson of several committee assignments at the Department level, College of Agriculture and Hawassa University, Ethiopia (March 1999 to July 2016).
4. Member of Hawassa University Strategy Planning development Committee both at Dehub/Hawassa University and College of Agriculture, Ethiopia (2000 to 2002 and 2009 to 2010).
5. Member of curriculum development and review committee, Dehub University/Hawassa University, College of Agriculture, Department of Animal Production and Range management, Ethiopia (2000 to 2002 and 2008 to 2010).
6. Member and chairperson of curriculum review and course modules development committee, Department of Animal and Range Sciences, Hawassa University, Ethiopia (2008-2010).
7. Member of PhD curriculum development committee, Hawassa University, Ethiopia (2009 to 2010).
8. Chairperson of Research Consortium of Hawassa University and Regional Government offices' Technical team in Southern Nation Nationalities and Peoples Regional State, Hawassa University, Ethiopia (October 2008 to February 2011).
9. Member of Hawassa University Senate, Hawassa, Ethiopia (May 2009 to February 2011).
10. Member of Hawassa University Council, Hawassa, Ethiopia (May 2009 to February 2011).
11. Member of Hawassa University task force committee to develop proposal to

- strengthen higher education for American-African university collaboration funding (2009).
12. Member of Hawassa College of Agriculture Academic Commission, Hawassa, Ethiopia (November 2008 to February 2011).
 13. Member of Hawassa College of Agriculture Management Council Hawassa, Ethiopia (November 2008 to February 2011).
 14. External examiner of several MSc theses in the area of rangeland ecology and management at Haramaya University, Jimma University and Mekelle University (2009 to 2015).
 15. Examination Board member of PhD thesis defense at Pretoria University by Habtamu Teka, South Africa, Pretoria University (2013).
 16. Served as MSc thesis internal examiner (Saramma Wilson on “Effects of Urea or Lime Stone Ammonium nitrate (LAN) on Biomass Yield and Chemical Composition of Silage from Pure stand and Intercropped Lablab, Tswana cowpea, Millet and Buffel grass in Botswana” (2018)
 17. Involved in external examiners of both MSc and PhD theses at University of Pretoria (one MSc thesis), University of Fort Hare (one MSc and One PhD theses), and University of Namibia (one PhD thesis) (2018 to 2019).
 18. Staff promotion evaluation to the rank of Associate professor from the University of Fort Hare (2019).
 19. Internal examiner and chairperson of several MSc theses in the area of rangeland ecology and management at Hawassa University (2008-2016).
 20. Chairperson of a committee formed by Dean College of Agriculture, Hawassa University to investigate a claim related to a manuscript copy right (2009 to 2010).
 21. External Assessor for MSc students taking the course Dry Land Resource Management (EDS 350) offered in the Department of International Environment and Development studies, NORAGRIC, Norwegian University of Life Sciences, Norway (2007- 2010).
 22. Member of board of Research and Farm Centre of Dehub University, Hawassa Ethiopia (September 2000-April 2001).
 23. Chairperson of Research and Farm Centre committee of Hawassa University, Hawassa, Ethiopia (2009 to 2011).
 24. Chairperson council of Animal and Range Sciences Department Hawassa University, Ethiopia (2008 to 2011).
 25. Member council of Animal and Range Science Graduate Studies Hawassa University, Ethiopia (2008 to 2016).
 26. Member/Chairman of different ad hoc committees in the Department of Animal and Range Sciences, Hawassa University, Ethiopia (1999 to 2016).
 27. Member of University Academic Staff Scholarship committee Hawassa University (2009 to 2011).
 28. Member of Academic Staff Promotion committee Department of Animal Production and Range Management, Dehub University, Hawassa, Ethiopia (2000 to 2001).
 29. Member of Academic Staff Promotion committee Hawassa College of Agriculture, Hawassa, Ethiopia (2000 to 2001 and 2008 to 2009).
 30. Chairperson of the committee for the approval of individual course mark and letter grade of students of Animal and Range Sciences Department Hawassa University, Ethiopia (2008 to 2011).

4.2. Service in Botswana University of Agriculture and Natural Resources

1. Member of committee assigned for Ecorangers project and curriculum development at CICE, Botswana University of Agriculture and Natural Resources (2091 to date).
2. Coordinator and member of curriculum development committee to develop the MSc programme in Range Ecology and management (July 2018-September 2019).
3. Developed Fire Ecology course for the department (2019)
4. Revised and develop BSc Range Science for qualification by BQA (2019).
5. Member of a curriculum development committee for the programme on BSc Aquatic and Fisheries at Botswana University of Agriculture and Natural Resources (December 2017-June 2019).
6. Members of New programmes development sub-committee in the Department of Animal Sciences and Production, Botswana University of Agriculture and Natural Resources (December 2017 to 2018).
7. Member, Faculty of Agriculture Board (July 2016 – to May 2019).
8. Member, Faculty of Natural Resources Board (June 2019 – to date).
9. Member, Faculty of Science Board (September 2019 – to date).
10. Member, Department of Animal Science and Production Board (July 2016 – May 2019).
11. Member of Department of Animal Science and Production Programme Development and Quality Assurance Team (July 2016-May 2019).
12. Member, Department of Range and Forest Resources Board (June 2019 – to date).
13. Member of Department of Range and Forest Resources Programme Development and Quality Assurance committee (August 2019-to date).
14. Chairperson for Research and Graduate studies committee in the Department of Range and Forest Resources (August 2019- to date).
15. Member of Senate of Botswana University of Agriculture and Natural Resources (May 2019- to date).
16. FNR representative in the industry engagement strategy workshop (November 2019).
17. Member of Faculty Appointment, Promotion and Review committee for the Faculty of Animal and Veterinary (August 2019- to date).
18. ASP representative in training ranchers/farmers on prescribe fire use at Jwaneng on 25 April 2017.
19. FNR representative in Research and Graduate Studies Committee (2019 to date).
20. Member of ASP departmental committee to screen/short-list candidates for Senior Lecturer in Range Ecology and Lecturer in Animal Production (2017).
21. BUAN representative in the National Spatial Planning 2036 Consultative meeting on 19 April 2017.
22. Member of Ethiopian Communities in Botswana
23. Senior Academic (advisor) to the PhD degree Oral Examinations of Abdulazeez Abdulrazaq in Animal Nutrition 4 October 2017, BUAN.
24. Personal tutor to Range Sciences Program Students (2017 entry).

4.3. Professional Services

4.3.1. International

1. Rangeland Ecology consultant related to developing rangeland assessment methodology in Kenya and Ethiopia for the International Livestock Research institute, Nairobi, Kenya (March 2015 to October 2015).

2. Assistant Scientist: University of Oslo, Centre for Ecological and Evolutionary Synthesis under the leadership of Professor Nils Chr. Stenseth (November 2007 to February 2008) related to indigenous vegetation resources in Botswana, Kenya and Mali.
3. Developed a synthesis-report on the MSc training from three countries (Botswana, Kenya and Mali) under Global Environmental Facility-Indigenous Vegetation Project (GEF-IVP) University of Oslo, Centre for Ecological and Evolutionary Synthesis, Oslo December 2007. Final Report submitted to the UNEP Secretariat. pp. 138, (November to December 2007).
4. Collaborative research with Professor Gufu Oba and Patrick in Uganda on Participatory monitoring of biodiversity, which has been published in Land Degradation and Development.
5. Lecture work (course thought) at the Norwegian University of Life Sciences (Norway): Dry Land Resource Management (EDS 350) NORAGRIC-Norway (November 2006).
6. Course thought at University of Hohenheim, Stuttgart on Plant-Animal interactions 4 hours (April 2010).
7. PhD student (Teka, H.) Co-supervision at University of Pretoria, Pretoria, South Africa (2010 to 2013).
8. PhD student (Megersa, B.) Co-supervision at University of Hohenheim, Stuttgart, Germany (2010 to 2013).
9. Member of Editorial Advisory Board-Science Technology and Arts Research journal (2010-update).
10. Member of Editorial Advisory Board - Ethiopian Journal of Animal Production (2018-update).
11. Member of International Society for Development and Sustainability
12. Reviewer of scientific manuscripts for national and international journals, namely:
 1. South African Journal of Botany
 2. Arid Land Research and Management (Taylor and Francis)
 3. Resource, Conservation and Recycling
 4. Ambio
 5. PLOS One Scientific Journal
 6. Science of the Total Environment
 7. Journal of Advances in Meteorology
 8. Journal of Geoforum
 9. Ethiopian Journal of Animal production
 10. Journal of Carbon Management
 11. Journal of Ecological application
 12. Journal of Ecological Processes
 13. Journal of Pastoralism: Research policy and Practice
 14. Journal of Grassland Science
 15. Journal of Environment, Development and Sustainability
 16. Journal of Vegetation Science
 17. Journal of Arid Environments
 18. African Journal of Ecology
 19. Journal of Agriculture, Ecosystems and Environment
 20. Journal of Science and Development
 21. Journal of Land Use Science

22. Journal of Catena
23. Journal of Mitigation and Adaptation for Global Change
24. African Journal of Range and Forage Science
25. African journal of Environmental Science and Technology
26. Journal of Land Degradation and Development
27. International Journal of Plant and Animal Sciences
28. South African Journal of Animal Science
29. International Journal of Agricultural Policy and Research
30. The Rangeland Journal
31. Ethiopian Society of Animal Production technical papers

4.3.2. National

1. Chairperson during the Annual Review Research activities and Technology pre-scale up of the pastoral and Agro-pastoral and emerging regions Research and Capacity Building, Ethiopian Institute of Agricultural Research, Addis Ababa (February 2016).
2. Member of Ethiopian National Science and Technology Research Council technical and research proposals evaluation committee (November 2014 to July 2016).
3. Member and Chairperson, Technical committee for the Southern Nations, Nationalities and Peoples Region State (SNNPRS) Research consortium, a consortium of Hawassa University, Southern Agricultural Research Institute, Bureau of Agriculture and Rural Development of SNNPRS for the implementation of watershed based operational research project funded by the Irish Government in two watershed areas in SNNPRS (2008 to 2011).
4. Member of a task force committee on Policy studies, participatory learning and knowledge leadership assigned by the Southern Nations, Nationalities and People's Regional State Pastoral Affairs Bureau (2009 to 2011).
5. Member and Advisor to a Task Force Research Team assigned by the Regional Government of Southern Nation Nationalities and Peoples Regional State, Ethiopia to study the economic, social and political constraints of Pastoral communities of the region (2008 to 2010).
6. Member of a base line survey team for institutionalization of farmers' participatory research in Southern Nation Nationalities and Peoples Regional State, Ethiopia representing ACA (Lead organization Farm Africa) (August 15 to September 5, 2000).
7. Member and Fellow of Ethiopian Academy of Sciences as of October 2015
8. Rangeland Ecology consultant related to developing rangeland assessment methodology in Ethiopia and Kenya for the International Livestock Research institute, Nairobi, Kenya.
9. Member of a team for Developing Resource Availability Assessment Methodology related to rangelands in the Wabi-Shebele and Genale-Dawa River Basins organized by Water and Land Resource Centre (WLRC). (February to August 2014)
10. Member of a team assigned to carry out field work and data collection on Natural Resource Management and impact assessment in Oromia regional State of Ethiopia-organized by JaRco Consulting Company for the final evaluation of Development Assistance Consortium (EDAC) USAID/FFP Title II DAP/MYAP/PAP assistance in support of the Productive Safety Net Program from 2005 to 2011 (August 25 to October 8, 2010).
11. Consultant on sustainable pastoral land use and possible future interventions in Filtu Somali Region of Ethiopia for EECMY-DASSC Filtu Water and Sanitation Project

- (FWSP)- commissioned by Norwegian Relief Church (November 2009).
12. Consultant Trainer on rangeland management and pastoral development for Farm Africa in Turmi-South Omo- commissioned by Farm Africa (May 2009).
 13. Consultant Trainer on rangeland management and utilization for TAES, SPS-LMM in Southern Nation Nationalities and Peoples Regional State, Hawassa, commissioned by USAID (April 2009).
 14. Consultant Trainer on rangeland management and utilization for TAES, SPS-LMM in Oromia Regional State, Yabello commissioned by USAID (August 2009).
 15. Consultant Trainer on rangeland management and utilization for TAES, SPS-LMM in Afar Region, Awash commissioned by USAID (September 2009).
 16. Consultant Trainer on pastoralism and rangeland ecology for SOS Sahel, Negelle Borana commissioned by SOS Sahel (October 1999).
 17. Served as member and chairperson of several committee assignments at the Department level, Hawassa College of Agriculture, Debu/Hawassa University, as well as Borana Cattle Breed Improvement and conservation Centre in Ethiopia between 1990 and 2016.
 18. Member and Chairperson of a Committee for Curriculum Review and Modules development, Department of Animal and Range Sciences, Hawassa University, Ethiopia (2009-2011).
 19. Member of the Strategy Planning Committee both at Debu/Hawassa University and College of Agriculture, Ethiopia (2000 to 2002).
 20. Member of curriculum development and review committee, Debu University/Hawassa University, Awassa College of Agriculture, Department of Animal production and Range management, Ethiopia (Under graduate 2000 to 2002 and MSc 2003).
 21. Member of PhD curriculum and review committee (2009/2010 Academic Year).

4.3.3. Membership in Scientific Societies

1. Founding member of Botswana Society of Livestock Production (2018 to date).
2. Member of the Kalahari Conservation Society Botswana, Gaborone (2019 to date).
3. Member of Ethiopian Society of Animal Production (1999 to date).
4. Member and Fellow of the Ethiopian Academy of Sciences (2015 to date).
5. Member of Ethiopian Pastoral Network (2000 to date).
6. Member of Ethiopian Professional Associations Educated in Norway (2010 to date).
7. **Member** of Ethiopian Scholars Association Educated in Germany (2014 - to date).
8. Member of Ethiopian Communities in Botswana (2016 to date).
9. Member of Ethiopian Professionals Association in South Africa (2018 to date).
10. Member of Ethiopian Scholars Association of Alexander von Humboldt Fellows (2013 to date).
11. Member of Ethiopian Scholars Association Educated in Germany (2014 - to date).
12. **Member** of Ethiopian Teachers Association (2008 to date).

4.3.4. Membership in Academies

1. A fellow of the Ethiopian Academy of Sciences (AAS) (2015-to date).
2. A Fellow of the Alexander von Humboldt Post-doctoral Researcher and Alumni
3. A Fellow of Food Security Centre at the University of Hohenheim and DAAD Alumni
4. Member of Ethiopian Teachers Association (2008-to date)
5. Research fellow Norwegian University of Life Sciences, Department of International

Environment and Development Studies, Aas, Norway.

6. International Journal of Development and Sustainability (IJDS) is the official publication of ISDS Society (Membership Confirmation - M172922).
7. Member of an Advisory Board-Science Technology and Arts Research journal (2010-update).
8. Member of an Advisory Board-Ethiopian Journal of Animal Production (2018-update).
9. Member of Association of African Universities (2020)

4.3.5. Expert in Scientific Evaluation

1. Member/chairperson of promotion committee for assessment of publication, teaching, university and community services of three academic staff members at Debu/Hawassa University to the purpose of application for promotion to the rank of Associate Professor (Professors Adugna Tolera and Negatu Regassa of Hawassa University), to the rank of Professor (Professor Tegene Negesse and Professor Adugna Tolera of Hawassa University) (2001 and 2010).
2. Served as external evaluation for the promotion of an Academic Staff from the University of Fort Hare to the rank of Associate professor (2019).
3. Member of the National Research Council technical committee to review and evaluate project proposals for fund grant by the Ethiopian Government (November 2014 to July 2016).
4. Served and/or have been serving as reviewer for more than 20 international reputed Journals.

4.3.6. Examiner for PhD and MSc theses

1. I have served as internal and external examiners of both MSc and PhD theses at UB/BUAN (one MSc thesis), University of Pretoria (one MSc thesis), University of Fort Hare (one MSc and One PhD theses), and University of Namibia (one PhD thesis). Staff promotion evaluation to the rank of Associate professor (one from the University of Fort Hare).
2. I have served as external examiner of 12 MSc theses in the area of rangeland ecology and management at Haramaya University, Jimma University, and Mekelle University in Ethiopia (2008 to 2016).
3. Internal examiner of one MSc student at Norwegian University of Life Sciences, Noragric in Norway (2006).
4. Examiners Board member of PhD thesis defense at Pretoria University (June 2013).
5. I have served as internal examiner and chairperson of 21 MSc theses in the area of rangeland ecology and management at Hawassa University (College of Agriculture and College of Forestry) (2008 to 2016).
6. External Assessor for MSc students taking the course Dry Land Resource Management (EDS 350) offered in the Department of International Environment and Development studies, NORAGRIC, Norwegian University of Life Sciences, Norway (2007- 2010).
7. Senior Academic (advisor) to the PhD degree Oral Examinations of Abdulzeez Abdulrazaq in Animal Nutrition 4 October 2017, BUAN.
8. External examiner for PhD thesis by Ayanda Kwaza entitled Evaluating the current potential of semi-arid communal rangelands in the Eastern Cape Province of South Africa and responses to short-term enclosures, University of Fort Hare, South Africa, June 2018.

9. External examiner for PhD thesis by JESAYA NAKANYALA entitled Rooting strategy of Savanna Shrubs in the Kalahari basin: Implications on woody and herbaceous plants coexistence and shrub encroachment in the African Savannas, University of Namibia Department of Wild Life management, Katima Mulilo Campus, January 2019.
10. External examiner of MSc thesis by Mziwanda Mangwane entitled Evaluation of grass species identified around an open-cast mine area for germination and seedling growth performance under saline conditions, University of Pretoria, South Africa.
11. External Examiner of MSc thesis by Qayi Lungisa entitled soil seed bank density and species composition in relation to rangeland degradation and bush encroachment in the semi-arid communal grazing lands of the Eastern Cape, South Africa. University of Fort Hare, South Africa.
12. Internal examiner of MSc by Saramma Wilson entitled Effects of Urea/Lime Stone Ammonium Nitrate on biomass yield and chemical composition of Silage from pure stand and intercropped Lablab, Tswana cowpea, Millet and Bufel grass in Botswana, Botswana University of Agriculture and Natural Resources.

4.3.7. Consultancy work and project documents produced

I have also taken the initiator, team leader, principal author or active membership role in the development of the following project documents relevant to research, development and conservation in cattle Genetic resources, Range land condition assessment and improvements.

1. June 1993 – October 1997. Manager and leader for the rehabilitation of Borana Cattle Breed Improvement and Conservation Centre in Ethiopia post downfall of the Military and Socialist government of Ethiopia.
2. Prepared and presented a conference speech on International workshop on drought resilience in the Horn of Africa pastoral systems organized by the German Federal Ministry for Economic Cooperation and Development entitled “Pastoral Ecosystems: Challenges and approaches in strengthening drought resilience in the Horn of Africa”, 1 March 2012, Berlin, Germany.
3. Served as consultant and produced report on consultancy work from March 2015 to August 2015: Rangeland Ecology consultant related to developing rangeland assessment methodology in Kenya and Ethiopia for the International Livestock Research institute, Nairobi, Kenya.
4. Served as consultant and produced a quarterly report on project evaluation and status from November 2014 to July 2016: Member of the National Science and Technology Research Council technical committee for National Research proposal review committee, evaluation of the progress of ongoing National Research funded by the Ethiopia National Research Council and presenting quarterly progress reports to the Council through the Ministry of Science and Technology.
5. Served as consultant and produced report document related to consultancy work from February to August 2014: Team member Developing Resource Availability

Assessment Methodology related to rangelands in the Wabi-Shebele and Genale-Dawa River Basins organized by Water and Land Resource Centre (WLRC).

6. Served as consultant and produced a report on Evaluation by a team member on Natural Resource Management impact assessment to carry out field work and data collection in Oromia regional State of Ethiopia- organized by JaRco Consulting Company for the final evaluation of Development Assistance Consortium (EDAC) USAID/FFP Title II DAP/MYAP/PAP assistance in support of the Productive Safety Net Program from 2005 to 2011.
7. Served as consultant and produced a report document on a Consultancy work for EECMY-DASSC Filtu Water and Sanitation Project (FWSP) in relation to pastoralists' livelihood improvement on sustainable pastoral land use and possible future interventions in Filtu Somali Region of Ethiopia -November 2009-commissioned by Norwegian Relief Church.
8. Prepared a training document on Consultancy work for Farm Africa being a trainer on rangeland management and pastoral development, May 2009, Turmi-South Omo-commissioned by Farm Africa.
9. Prepared a training document for TAES, SPS-LMM being a trainer on rangeland management and utilization April 2009 in Southern Nation Nationalities and Peoples Regional State, Awassa, commissioned by USAID.
10. Prepared a training document for TAES, SPS-LMM being a trainer on rangeland management and utilization August 2009 in Oromia Regional State, Yabello commissioned by USAID.
11. Prepared a training document for TAES, SPS-LMM being a trainer on rangeland management and utilization September 2009 in Afar Region, Awash commissioned by USAID.
12. Prepared a training document for SOS Sahel being a trainer on pastoralism and rangeland ecology 1999, Negelle Borana commissioned by SOS Sahel.
13. 12-26 July 2017. Reviewer of a project entitled "Bush encroachment and control on communal rangelands of Makapanstad" submitted by Pretoria University Academic Staff to the National Research Fund (NRF) for funding.
14. October 2017: Prepared a poster presentation on "Indigenous institution and knowledge vs. ecological approach for enhancing adaptation and resilience in Borana pastoral systems of Southern Ethiopia", which has assigned to the challenge "Counting the economic costs of climate change" at a conference "Impacts World 2017 conference (October 11-13) in Postdam, Germany".
15. I Co-led a collaborator a collaborative joint research project entitled "Livelihood diversifying potential of livestock based carbon sequestration options in pastoral and agro pastoral systems in Africa" at Hawassa University in partner with the International Livestock Research Institute (ILRI), University of Hohenheim, National Research Institute of Burkina Faso, ICRAF, funded by the German Development Cooperation GIZ/BMZ (total project fund EURO 1.2 Million).
16. 2015: Initiator and collaborator in the development of research grant on "Impacts of rangeland management practices and land use dynamics on carbon sequestration potentials in East African rangelands" by Hawassa University ILRI funded by the International Centre for Agricultural Research in Dryland Areas (ICARDA) (\$

- 20,000.00).
17. Received research fund grant (\$ 12,000.00) from the International Foundation for Science (IFS) on a project on entitled “History of land use, impacts of long-term grazing and climate change on pastoral ecosystem and conservation of biodiversity in the Borana tula-well ecosystems” at Hawassa University (2009).
 18. May-to date: Collaborator in the development of concept note on donkey project entitled “Farm level assessments of Climate-smart animal agriculture based on donkey production in Botswana”.
 19. As of October 2017: initiator/ collaborator in the development of concept note on Prosopis species entitled “An opportunity or a threat? The use of invasive Prosopis species in the Kgalagadi District, Western Botswana as feed for livestock”

4.4. Community Service

1. Provision of training and advises to ranchers/farmers in Jwaneng on rangeland management, use of prescribed fire in rangeland management and fire protection (25 April 2017).
2. Led and coordinated the rehabilitation of Borana Cattle Breed Improvement and Conservation Centre in Ethiopia post the downfall of the Military and Socialist government of Ethiopia for genetic conservation and pastoral cattle breed improvement through improved bull distribution. (June 1993 – October 1997).
3. March 2015 to August 2015: Rangeland Ecology consultant related to developing rangeland assessment methodology in Kenya and Ethiopia for the International Livestock Research institute, Nairobi, Kenya
4. November 2014 to July 2016: Member of the National Science and Technology Research Council technical committee for National Research proposal review, evaluation of the progress of ongoing National Research funded by the National Research council and presenting quarterly progress reports to the council through the Ministry of Science and Technology.
5. February to August 2014: Team member Developing Resource Availability Assessment Methodology related to rangelands in the Wabi-Shebele and Genale-Dawa River Basins organized by Water and Land Resource Centre (WLRC).
6. Evaluation team member on Natural Resource Management impact assessment to carry out field work and data collection in Oromia regional State of Ethiopia-organized by JaRco Consulting Company for the final evaluation of Development Assistance Consortium (EDAC) USAID/FFP Title II DAP/MYAP/PAP assistance in support of the Productive Safety Net Program from 2005 to 2011.
7. Consultant for EECMY-DASSC Filtu Water and Sanitation Project (FWSP) in relation to pastoralists livelihood improvement on sustainable pastoral land use and possible future interventions in Filtu Somali Region of Ethiopia -November 2009-commissioned by Norwegian Relief Church.
8. Consultant for Farm Africa as trainer on rangeland management and pastoral development, May 2009, Turmi-South Omo- commissioned by Farm Africa.
9. Consultant for TAES, SPS-LMM as a trainer on rangeland management and utilization April 2009 in Southern Nation Nationalities and Peoples Regional State, Awassa, commissioned by USAID.
10. Consultant for TAES, SPS-LMM as trainer on rangeland management and utilization August 2009 in Oromia Regional State, Yabello commissioned by USAID.
11. Consultant for TAES, SPS-LMM as trainer on rangeland management and utilization

- September 2009 in Afar Region, Awash commissioned by USAID.
12. Consultant for SOS Sahel as a trainer on pastoralism and rangeland ecology 1999, Negelle Borana commissioned by SOS Sahel.
 13. Presented a public lecture on “Pastoralism concepts, different perceptions and change”, at Oromia regional State’s Pastoral Day held in Bale Zone, Robe, Ethiopia (2011).

4.5. Other information

4.5.1. International Training Attended

1. Participated in international training in Disaster Risk Management, Humboldt University (18 July to 1 August 2015), Berlin, Germany.
2. Scientific paper writing seminar (February 2006), Aas, Norway.
3. Philosophy of Science and Research Ethics (January to May 2005), Aas, Norway.
4. Landscape Ecology (January to May 2003), Aas, Norway.
5. Courses in Development Studies, Patent right and control (August to November 2002), Aas, Norway.

5. ACADEMIC LEADERSHIP

1. Served as Head of Department of Animal and Range Sciences. College of Agriculture, Hawassa University, Hawassa, Ethiopia (2008-2011).
2. Acting Head, Department of Animal Production and Rangeland Management, Debub University, Hawassa, Ethiopia (September 2000 to April 2001).
3. Acting Head, Department of Range and Forest Resources at Botswana University of Agriculture and Natural Resources as follows:
 - Acting HoD of RFR (25-30 July 2019)
 - Acting HoD of RFR (21-22 October 2019)
 - Acting HoD of RFR
 - Acting HoD of RFR (28 October - 1 November 2019)
 - Acting HoD of RFR (11-13 November 2019)
 - Acting HoD of RFR (9-12 December).

5.1. Managerial and Administrative Responsibilities

1. Served as Head of Department of Animal and Range Sciences, Hawassa University, Hawassa, Ethiopia (November 2008 to February 2011 = about three years and three months).
2. Served as acting Head of Department, Animal Production and Rangeland Management, Debub University, Hawassa, Ethiopia (Sept 2000 to April 2001 = 8 months).
3. Served as Manager of Borana Cattle Breed Conservation and Improvement Ranch in Borana, Yabello, Ethiopia (June 1993 to Oct 1997 = 3 and a half years).
4. Served as coordinator of the Borana Cattle Breed conservation and improvement centre foundation and replacement stock purchasing standing committee (June 1993 to Oct 1997 = 3 and a half years).

5.2. Policy Development and Institutional Governance

1. BUAN Senate member (2019 to date).
2. Participated in consultative meeting on National Spatial planning of Botswana-2036

representing BUAN.

3. Served as a member of the National Research Council Technical committee, science and technology innovation research of the Ethiopian Government (November 2014 to July 2016).
4. Served as member of Hawassa University Management Council from 2009 to 2011
5. Served as member of Hawassa University Senate in Ethiopia from 2009 to 2011.
6. Served as member of a committee tasked to develop a 5 years strategic plan for the former Debut University, which currently renamed Hawassa University (2001 to 2002 and 2009 to 2010).
7. I am also served as an Advisor to a research task force committee assigned by the South Nation, Nationalities and Peoples Regional Government of Ethiopia on pastoral development issues (2008 to 2009).
8. Member of a task force committee on Policy studies, participatory learning and knowledge leadership assigned by the Southern Nations, Nationalities and People's Regional State Pastoral Affairs Bureau (2009 to 2011).

5.3. Academic Programme Reviews

1. Member of new programme development sub-committee Department of Animal Science and Production, Botswana University of Agriculture and Natural Resources since December 2017.
2. Member of curriculum development committee to develop programme on BSc Aquatic and Fisheries at Botswana University of Agriculture and Natural Resources (as of December 2017).
3. Participated in the review of a BSc Program in Range Science Department of Animal Science and Production at Botswana University of Agriculture and Natural Resources (alignment with BQA standard (August 2017-December 2017).
4. Coordinator and member the “MSc in Rangeland Ecology Programme” during the “External Curriculum Review Workshop” organized by College of Agriculture, Debut University, Ethiopia (May 2003).
5. Participated and led the review and modularization of BSc programme in Animal and Range Sciences College of Agriculture, Hawassa University”: Hawassa, Ethiopia (2009-2010).
6. Served as a member of Curriculum Development committee working group on the “MSc Program (curriculum development) in climate smart-Agriculture Wondo Genet College of Forestry and Natural Resources, Shashemene, Ethiopia (2015).
7. Served as a member of Curriculum Development committee working group on the “MSc Program (curriculum development) in climate smart Agriculture College of Agriculture, Hawassa University, Ethiopia (2015).
8. Member of curriculum development and review committee, Debut University/Hawassa University, College of Agriculture, Department of Animal Production and Range management, Ethiopia (2000 to 2002).
9. Member of PhD curriculum development committee, Hawassa University, Ethiopia (2009 to 2010).

5.4. Public Relations

5.4.1. Leadership of Research Teams

1. Leader and principal investigator in the ILRI/ICARDA funded Project, Nairobi on “Impacts of rangeland management practices and land use dynamics on carbon sequestration potentials in East African rangelands” Hawassa University, Hawassa,

- Ethiopia. Total grant USD 20,000.00
2. Leader and principal investigator in the IFS funded project on History of land use, impacts of long-term grazing and climate change on pastoral ecosystem and conservation of biodiversity (2009-2012). Hawassa University, Hawassa, Ethiopia. Total grant US\$ 12,000.00
 3. Co-leader and principal investigator from Hawassa University side in the BMZ funded ILRI Project, Nairobi on “Livelihood diversifying potential of livestock based carbon sequestration options in pastoral and agro pastoral systems in Africa” Hawassa University, Hawassa, Ethiopia. Total grant Euro.1, 200,000.00.
 4. Principal investigator in a household survey proposed in the Chobe area Botswana under Future Rural Africa: Future-making and social-ecological transformation with the University of Cologne (Euro 10, 000.00) (2020).
 5. Initiator and principal investigator in a project entitled “Bush encroachment as a process of landscape change: Ecological and management assessment in southern Ethiopia funded by the Norwegian Government for my PhD thesis.
 6. Initiator and team leader of Seed regeneration of invasive species: germination ecophysiology and woody vegetation encroachment processes in Borana, Southern Ethiopia (Jan 2015-July 2016).
 7. Co-leader and principal investigator Livelihood diversifying potential of camel-based food security and climate-smart sustainable development in Botswana-Project Code: Camel Project (RPC 49). Funds Acquired from BUAN.
 8. Team member of donkey research concept note at BUAN.
 9. Initiators and team member of Prosopis species research concept note at BUAN.
 10. Led development of collaborative research proposal with regional and/or international linkages for SASSCAL call 2 Grand Challenge.

5.4.2. Enhancing the International Reputation of Botswana College of Agriculture

1. Member of Editorial Advisory Board-Science Technology and Arts Research journal (2010-update).
2. Member of Editorial Advisory Board - Ethiopian Journal of Animal Production (2018-update).
3. Member of International Society for Development and Sustainability
4. Reviewer of scientific manuscripts for national and international journals.
5. Networking and realization of the collaboration between BUAN and the University of Cologne in Germany.
6. Serving as co-supervisor of six PhD students in five universities of four countries.
7. Contributed abstract for poster presentation to an international conference/workshop in Potsdam, Germany.
8. Fellow, Ethiopian Academy of Sciences (EAS).
9. Member of several professional associations/societies.
10. Representing BUAN in international conference in Namibia (2018), Ethiopia (2019) and at UB (2019).
11. Collaborative in data contribution and working on a global analysis of variation in herbivore effects on plant biodiversity and change in dominance (published in Nature Ecology and Evolution (2014 to 2018).

5.4.3. Successful Record of Attracting Funding or Grants to the University

1. Member of a collaborative research on “Livelihood diversifying potential of livestock based carbon sequestration options in pastoral and agro pastoral systems in Africa” with total project fund Euro 1, 200, 000.00.
2. Member of research grant on “Impacts of rangeland management practices and land use dynamics on carbon sequestration funded by the International Centre for Agricultural Research in Dryland Areas (ICARDA) amounting \$20,000.00.
3. Received research fund grant amounting \$12,000.00 from the International Foundation for Science (IFS) on a project entitled “History of land use, impacts of long-term grazing and climate change on pastoral ecosystem and conservation of biodiversity in the Borana tula-well ecosystems” at Hawassa University (2009 to 2012).
4. Member of a camel Project Code: Camel Project (RPC 49). Funds Acquired from BUAN (2019 to date).
5. Member of a household survey in the Chobe area Botswana under Future Rural Africa with fund amounting Euro 10, 000.00 (2020)..
6. Initiator and principal investigator in a project entitled “Bush encroachment as a process of landscape change: Ecological and management assessment in southern Ethiopia funded by the Norwegian Government for my PhD thesis.
7. Initiator and team leader of Seed regeneration of invasive species: germination ecophysiology and woody vegetation encroachment processes in Borana, Southern Ethiopia (Jan 2015-July 2016).

5.4.4. Membership and Participation in National and International Delegations

1. Represented ASP with other colleagues from the department to visit donkey milk farm in Werde (June 2017).
2. Represented ASP with Dr. Nsinamwa to train ranchers/farmers on range management, use of prescribed fire and fire protection in Jwaneng (25 April 2017)
3. Represented the Ethiopian National Research council technical committee (Agricultural Sector) to present selected projects to the National Research Council members for approval and funding from the Government of Ethiopia, Addis Ababa, Ethiopia (March 2015).
4. Represented the Ethiopian National Research council technical committee (Agricultural Sector), to evaluate the Ethiopian Government funded ongoing research projects at Mekele University, Mekele, Ethiopia (March 2016).
5. Represented the Ethiopian National Research council technical committee (Agricultural Sector), to evaluate the Ethiopian Government funded ongoing research projects in Bahirdar Fisheries research Centre, Bahirdar, Ethiopia (March 2016).
6. Represented the Ethiopian National Research council technical committee (Agricultural Sector), to evaluate the Ethiopian Government funded ongoing research projects in Sebeta Fisheries research Centre, Sebeta, Ethiopia (April 2016).
7. Represented the Ethiopian National Research council technical committee (Agricultural Sector), to evaluate the Ethiopian Government funded ongoing research projects at Holeta Biotechnology research Centre, Holeta, Ethiopia (April 2016).

5.4.5. Development and Implementation of Strategic Plans

1. Member a committee that revised the College of Agriculture strategic plan at Hawassa University (2010 to 2011).
2. Contributed to the development of the research strategy of Hawassa, Ethiopia (2009 to 2011).
3. Contributed to the development of BUAN draft research strategy through the

Department of ASP (2017 to 2018).

4. Led and directed the development and implementation of Borana cattle breed improvement and conservation ranch strategic plan during 1993-1997.
5. Participated in the development and implementation of a five year Strategic Plan of College of Agriculture, at Dehub/Hawassa University, Hawassa, Ethiopia during 2000 to 2005.
6. Participated in the development and implementation of a five year Strategic Plan of Dehub/Hawassa University, Hawassa, Ethiopia during 2002 to 2007.

5.4.6. Acknowledgement as an Advocate for the Discipline

1. Member of East African task group initiated by FAO East African Regional Office to develop strategies for enhancing forage productivity in East African Rangelands (2009 to 2011).
2. Advocate and member of Pastoral Network in Ethiopian (2000 to date).
3. Member of the Kalahari Conservation Society (2019 to date).
4. Presented paper and participated in panel discussion on the future of pastoralism on pastoral day in Ethiopia January 2011.
5. Interviewed on TV on matters related to arid land ecosystem, pastoralism and agro-pastoralism as a way of life in Ethiopia and East African region, Oromia Radio and TV Broad Casting Agency (10 January 2015).
6. Recognition for Professional Services/Contribution from the South Nations, Nationalities and Peoples Regional Government of Ethiopian for the outstanding service as professional advisor to a research team on pastoral issues in seven pastoral districts of South Omo and Bench-Maji zones, south Ethiopia.
7. Honored and recognized for outstanding contribution to the advancement of science, the Ethiopian Academy of Sciences by conferment of the status of Fellow.
8. Received Certificate of award from the Ministry of Science and Technology of Ethiopia for outstanding contribution and services as member of the National Research Council technical committee representing Higher Education and the Agricultural Sector.

5.5. Herbaria Officially Visited to Undertake Taxonomic Research

I have visited the National Herbarium in Ethiopia at Addis Ababa University, researched on Ethiopian plant specimens from Borana rangelands during the write up of my MSc thesis entitled “Range condition and traditional management in Borana Southern Ethiopia and read different articles and **Flora of Ethiopia and Eritrea, Volume 6 [1997]: 76-82**):

1. The Botanical Lab and Herbarium, University of Cologne, Cologne, Germany (2011-2013).
2. Ecosystem Museum, Stuttgart, Germany, (April 2010).
3. The Herbarium, University of Oslo, Norway (2008).
4. Botanic Gardens, Bonn (2011), University of Hohenheim Stuttgart, Germany (2010).
5. Herbarium, and Museum, Bonn, Germany (2011).
6. Alemaya University of Agriculture Herbarium (ACD), Alemaya, Ethiopia (1988).
7. The National herbarium of Ethiopia (ETH), Addis Ababa, Ethiopia (1998).

5.6. Congresses/Conferences/Symposia/Workshops and Meetings

1. Participated in the New Botswana Qualification Authority (BQA) requirements workshop from 14 to 16 August 2017, BUAN, Gaborone, Botswana.

2. Participated in the national spatial planning 2036 **meetings BUAN**, Gaborone, Botswana (2017).
3. Participated and represented ASP in the Workshop on Range Management and Fire prevention consultative workshop at Jwaneng, Botswana (25 April 2017).
4. Participated in national and international courses, workshops, conferences and study tours.
5. February 18 to 20, 2015: The 2015 Annual review meeting of Research activities and Technology pre-scale up of the Federal Pastoral, Agro-pastoral and Emerging Regions Research and Capacity Building held at the Ethiopian Institute of Agricultural Research Head Quarter, Addis Ababa.
6. May 15-17, 2014: The IFPRI 2020. Conference on Building resilience for food and nutrition security” held in Addis Ababa, Ethiopia, at the Sheraton Addis Hotel.
7. March 21 to 22, 2014: National Symposium on “Science, Technology and Innovation for National Development” held at Wollega University (I was invited to give Keynote speech on Challenges of Scientific Approach to Development).
8. March 6 to 8, 2014: Humboldt Colloquium (Conference) in Nairobi, Kenya: “The Power of Excellence in Science- Enhancing Academia Capacities in Africa” held at Safari Park Hotel, Nairobi, Kenya.
9. February 26 to 2 March 2013: Mid-term workshop on “Livelihood diversifying potential of livestock based carbon sequestration options in pastoral and agro-pastoral systems in Africa” held in Burkina Faso, Ouagadougou-organized by National Research Institute of Burkina Faso.
10. August 16 to September 1, 2012: Study tour for 17 days throughout Germany in August 2012 and experience sharing in 13 regional states of Germany covering historical places, Research Institutes, Factories, and Governmental offices including the German Federal parliament office.
11. March 1, 2012: Conference on challenges and approaches in strengthening drought resilience in the Horn of African pastoral systems. International conference on drought resilience in the Horn of Africa, Organized by the German Federal Ministry for Economic Cooperation and Development, Berlin, Germany.
12. October 5 to 7, 2012: Tropentag conference delivering a poster presentation on “Effects of Bush Clearing, Prescribed Fire, and Grazing on Herbaceous Vegetation in Savannas of Southern Ethiopia”, Bonn, Germany.
13. April 25 to 27, 2012: Fellows’ Network meeting of the Alexander von Humboldt Foundation at the RWTH Aachen University held at Ford-Saal, Templergraben 57, 52062, Aachen, Germany.
14. June 28-29: Annual Meeting of the Alexander von Humboldt Foundation on the welcome of 600 Humboldtians from 102 countries around the world and coming from more than 100 cities to Berlin where the opening speech was addressed by the Federal Chancellor Her excellence Angela Merkel.
15. January 21 to 22, 2011: Invited as speaker and panellist on Pastoralism: Concepts, different perceptions and change, Oromia regional State’s Pastoral Day held at Robe, Bale Zone, Ethiopia.
16. May 17 to June 22, 2011: Inception workshop on “Livelihood diversifying potential of livestock based carbon sequestration options in pastoral and agro-pastoral systems in Africa” held in Kenya, Nairobi- ILRI campus.
17. Between February and April 2010: Experience sharing and visit to private and cooperative Dairy farms (invited by Professor Zárate, A.V), visit to Marbach horse

- breeding ranch and pastoral community (sheep herders) area in the alpine region of southern Germany (invited by Mr. Harald and Dr. Ulch).
18. July 14, 2009: Project launch: Natural Resource Management and Biodiversity conservation in the Drylands of East Africa and Central Africa held at Hilton Hotel, Nairobi Kenya.
 19. November 10-11, 2008: Food and Agricultural organization of the United Nations (FAO) Sub-Regional workshop on “Management of rangelands for better response to feed crisis in arid and semi-arid regions of east Africa” held at Jupiter International Hotel Conference Hall, Addis Ababa Ethiopia.
 20. January 2005, participated in staff seminar and tour to Copenhagen, Denmark by the Department of International Environment and Development Studies of the Norwegian University of Life Sciences.
 21. August 23 to November 7, 2002: participated in the Interdisciplinary PhD course entitled “Development studies” at the Norwegian University of Life Sciences, Aas, Norway.
 22. April 29 to May 1, 2002: Interdisciplinary workshop on some trends in rural development issues and policies in Ethiopia: Changes and continuities. Organized by the Department of Political Science and International Relations, Addis Ababa University and Research and Extension office of Hawassa University Held at Hawassa University, Hawassa, Ethiopia.

5.7. Countries Officially Visited

I have visited **16 different countries** officially for various duties during the positions that I have taken over the years.

1. Bahrain (2012), Botswana (2016), Burkina-Faso (2012), Denmark (2006), Egypt (2012, 2013), Germany (2010, 2011 to 2013, 2015), France (2012) Italy (2008), Kenya (2009, 2011, 2014: 2x, 2015, 3x) Jordan (2013), Namibia (2018) Norway (2002, 2003 to 2008), Netherlands (2005), Republic of South Africa (2013) Sweden (2008), United Kingdom (2002, 2003).

5.8. Recognitions and Awards

1. Honored and recognized for outstanding contribution to the advancement of science nationally and internationally by the Ethiopian Academy of Sciences by conferment of the status of Fellow (2015).
2. Awarded Certificate of Appreciation from the Ethiopian Ministry of Science and Technology for my contributions in the evaluation of research projects for fund grant by the National Research Council of the Ethiopian Government, Addis Ababa Ethiopia.
3. Awarded Certificate of Appreciation from the Regional Government of South Nation, Nationalities and Peoples Regional Government of Ethiopia for the outstanding contribution as research team Advisor while conducting a study on the Scio-political and environmental Study of pastoral communities in the region.
4. Awarded Certificate and a short-term local training to the value of P10, 000.00 in year 2019- Dean's Academic Merit Award for outstanding performance in delivering the Faculty of Natural Resources Mandate.