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**Bahir Dar University**

**College of Agriculture and Environmental Sciences**

**Department of Plant Sciences**

**A proposal in response to the call by Ethiopia- Netherlands Seed Partnership (ENSP) Stichting Wageningen Research (SWR) Ethiopia Wageningen University & Research (WUR)**

# **Facility to provide short courses for Ethiopian seed sector MSc students and professionals**

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**Bahir Dar**

# A. Introduction

## A1. Background and justification of the proposal

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| Seed Science and Technology (SST) is one of the graduate programs in Bahir Dar University (BDU), Ethiopia. Its curriculum was developed with the support of ISSD project in 2014.Until 2022, 44 students have been graduated using the same curriculum. SST graduates are expected to serve the nation as seed producers, marketers, trainers, researchers, instructors, seed system and business owners. To revise the curriculum, the BDU team had a tracer study. The results indicated that, the graduates are not enough to cover aforementioned areas of the seed sector. Therefore, BSc graduates of related fields such as plant science, crop production, horticulture, plant protection and MSc graduates of plant breeding, agronomy, crop protection and horticulture are replacing the role of SST graduates. In addition to this, the tracer study indicated that graduates of SST also have skill gaps in delivering the required competencies in the labor market. Hence, graduates need to be well equipped in demand driven competencies of the seed sector.   Seed sector as an emerging business demands all rounded graduates equipped with diverse background and competencies in the current labor market. This shows it is difficult to fulfill the demands of seed sector only by SST graduates. So, it is necessary to design tailor-made short-term trainings for those who are working in seed sectors and others who are intending to start the seed business. Therefore, this proposal is aimed to develop tailor-made short-term training curriculum for both on job trainings and for graduates who will be involved in the seed sector. This will enhance the capacity of the experts and fill the skill gaps observed in the sector. |

## A2. Objectives of the proposed short course facility

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| The objective of this proposal is to develop tailor -made short term training curriculum for both on job trainings and for graduates who will be involved in the seed sector with ultimate goal of improving the seed sector in Ethiopia through producing qualified professionals fitting to the labor market.    Specifically:  To fill the gaps of knowledge and skills of SST graduates observed during the tracer study Train potential graduates who will be involved in the seed sector Enhance the capacity of private seed sector experts upon demand |

## A3. Introduction to your institute (and relevant partners if applicable)

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| Bahir Dar University is one of the first-generation Universities in Ethiopia. It has been organized in to five colleges, four institutes, two faculties, two schools, two academies and thirteen research centers. BDU ranked 1stin differentiation scrutiny toward becoming a Research University. It has been selected to be one of the research universities in Ethiopia. One of the four targeted research areas being selected as a research university is Agricultural research Based on Google Scholar’s total h-index scores, BDU has researchers ranked in the world in the top 2% and it is one of the top 10% in university rankings. In addition to this BDU is the first selected University by 2022/23 freshman students of all Ethiopian Universities. The College of Agriculture and Environmental Sciences (CAES), BDU is located at the most tourist attractive city, Bahir Dar, which has full time access to air flight and land base transports. The College has been established in 2005. CAES is organized in to nine departments (Plant sciences, Horticulture, Agroeconomics, Rural development and Agricultural extension, Natural resources management, Fisheries and Aquatic sciences, wildlife and ecotourism management, Animal Sciences, Veterinary Sciences) and two schools. It has 174 academic and research staffs. The college has 15 undergraduate programs, 28 MSc and 12 PhD programs. It has different facilities to handle the long- and short-term trainings.  The college works with higher learning institutes (National and international), regional research institutes(ARARI for its high grade seed laboratories and fields;Adet Agricultural Research Center), National and internationalresearch institutes, BoA, Cooperative authority, Regional regulatory body(specially for the high grade seed laboratories), Seed producers (public, private, unions and cooperatives for their high grade seed laboratories and fields), Ethiopian Horticulture produce Exporters Association (EHPEA), NGOs (such as ENSP, SNV, upscaling crowd sourced winner seed varieties, RAISE-FS), Agro-industrial parks, commercial farms and others. |

# B. Capacity demands and proposition

## B1. Summary of the observed capacity demands of the Ethiopian seed sector based on the needs assessment

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| From our need assessment study, it is indicated that the knowledge, skill and attitude demands of employers and graduates have not fulfilled to the level of high satisfaction. This is indicated by the discrepancies of the demand and level of satisfaction of employers by the performances of graduates who are involved in the seed sector. Especially courses such as Seed production management, Seed quality maintenance, Seed business management, Seed inspection and certification, Seed Quality Testing/Seed Quarantine, Seed processing and post-harvest handling, and Seed policy and regulation were ranked first and very highly demanded by the employer organizations involved in the need assessment study. In addition to this, vegetable and fruit seed, forage seed and forest tree seed production skills are gaps which are identified recently in relation to nutrition and green legacy initiatives. Fullfilling these knowledge and skill gaps with the formal BSC and MSc curriculum is very difficult. Therefore, enhancing the capacity of individuals who are involved in the seed sector by giving short term courses is highly demanded. |

## B2. Learning goals to be addressed by the proposed training facility

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| 1. Trainees will demonstrate seed production and management tools. 2. Trainees will understand the demand and supply gaps of the seed sector 3. Trainees will maintain the quality of seeds to its best level 4. Trainees will identify the gaps of the Ethiopian seed policy and regulation  5. Trainees will know apply the principles of seed processing in the seed processing facility 6. Trainees will inspect and test the seed quality for certification 7. Trainees will get involved in the vegetable and fruit seed production and management N: B. Each course preparation will be done by specifying the goals of the course. The above goals are for the whole program |

# C. Training modalities

## C1. Target groups and enrollment eligibility criteria

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| Eligible applicants will be those who are involved directly or indirectly to the seed sector. Those having certificates, diploma, BSc, MSc, PhD in plant science, crop production, horticulture, plant protection, plant breeding, agronomy, Quarantine, agroeconomics, rural development, Agricultural extension, Entrepreneurship, Marketing, business management, law, post-harvest management, Biology, Chemistry, General agriculture, even SST and other related fields. Seed business owners, Commercial farmers, investors, cooperative (union members), smallholder farmers and students (as practical attachment). Women and youth will be highly encouraged.   * The training programs will have an anti-sexual harassment policy and code of conduct, a complaints mechanism and awareness-raising for students, instructors, and other program staff. * Childcare is a leading barrier preventing women from participating in the training. BDU has a childcare center in each of its campuses which is accessible to the trainees too. * BDU has the transportation facility for the trainees which can encourage women to participate on the training |

## C2. Training frequency and duration

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| The proposed intake will be dependent on the nature of training (theoretical/laboratory/practical), the modality of training (face to face/virtual/mixed). However, the maximum number of trainees in a class at a time should not exceed 15. The intake round will be dependent of the factors mentioned above. For example, if the training takes six months, one round cohort will be taken; if the training takes three months, 2 cohorts will be taken; if the training will take a month, 5 cohorts will be taken and if the training takes less than a month, up to 10 cohorts can be taken per year. |

## C3. Instructor capacities

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| Department of Plant Sciences in collaboration with other academic units will be responsible to coordinate the development and delivery of the short-term trainings. It has about 40 academic staffs which have an ample experience on developing training standard modules, managing/leading mega projects, developing standard curricula and publish in highly indexed journals. In addition to this, the department is working with college of business and economics, School of law, post-harvest technology and management program, Agricultural mechanization program, Institute of biotechnology and other academic institutes within BDU and beyond.  The department of plant science has female plant breeder, plant protection, horticulture staff which will be involved in the short term course delivery. In addition to this, under BDU there are female acdemic staffs in different faculties such as law, nutrition, business and economics, gender and development studies which will be involved on the course delivery upon demand. However, there a limitation of vegetable seed production and processing professional which needs to be acuired based on the demand of the training. |

## C4. Facilities

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| The main facilities present are:    Internet access: The University is networked with broadband internet connection and has its own web site. There are internet rooms which can be accessed by campuses students and are available to short term trainees. The BDU IT facility is known in the better position to design student information system, learning management system, procurement system, property management system etc. This facility will be utilized by our short-term training program.   Laboratories: The College has different laboratories including in Seed/grain Quality Analysis, plant protection (Entomology and Pathology), Plant Physiology and Horticulture, Tissue Culture and Molecular Laboratories, and soil and tissue nutrient analysis laboratories. However, there very limited viability testing chemical, germination box, grafting tools, vegetable seed processing facilities to be fulfilled.  Experimental field: The College has 54.81ha of land for research and demonstration at Koga irrigation scheme. It will give an opportunity to train year-round practical activities since the whole area have access for irrigation.   Green houses and net houses for propagation of fruit, forest trees and vegetables are available on campus.  There are student plots on campus for practical works. Moreover, the college is located in between Amhara Agricultural Research Institute, Adet Agricultural research center and Fogera National Rice research and training center within a short distance. Since it has MoU’s, the college can use their human capital and facilities without limitation.  Agricultural Mechanization facilities: There are full-fledged agro-mechanization facilities (six fully mounted tractors, planters, soil masters, threshers, riders, labelers, combine harvester and other implements) for seed production and post-harvest management (installed metal silos) activities.   Smart class room: The College has more than 13 smart classrooms which are fully facilitated by the necessary equipment and internet that can handle virtual and face to face course delivery.   Library: There is a library which can be used as a study place.   Dormitories and guest houses: It have fully facilitated dormitories for the trainees and guest houses for the guest trainers |

## C5. Feedback mechanisms

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| The program coordinator will set evaluation approaches such as open discussion about the courses, their relevance and betterment, evaluation of instructors by students after each course completion and their considerations, and finally evaluation of the whole program by the department every year for possible actions of improvement. Feedback will be collected when part-time staffs deliver courses. Moreover, alumni and employer feedback survey, and external evaluation and auditing of the program will be performed. |

## C6. Type of certificate awarded

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| Certificate will be given based on the BDU’s standards. A certificate will state the subject matter of the training, duration of the training and stating delivering institute with an official signature and stamp. |

# D. Indicative training program

Particularly it will be designed considering the background of the trainees, facilities, access, funding agencies, suitability of timing for trainer and trainees and other factors. Based on the above-mentioned factors, the training modality can be face to face, virtual and/or blended. However, important standard modules and laboratory manuals will be developed ahead of time of delivery.

| **When** | **Topic of activity** | **Type of activity** | **Learning goal addressed** |
| --- | --- | --- | --- |
| day 1 | Steps in seed processing | lecture, individual assignment | 5A |
| Day 2 | Basic seed processing facility | field observation, report writing | 5B |

# E. Sustainability

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| The program will start on a fund-raising campaign from the sectors working on seed issues. Prepare the justification of its relevance to convince the MoA, MoH and MoE to co-fund the program. Most importantly, the program will prepare a guideline to recruit a self-funding trainees or companies who can support their staff. Advocacy will be done to create awareness to the companies and research institutes to help the program sustain. It will device a mechanism of fund raising from the diaspora community to help the trainees pay their tuition and fees. With this it will sustain for longer period of time. |

# F. Budget

| **Description** | **unit** | **No. of days/units** | **Unit Cost (**€) | **Cost (excl. VAT)** |
| --- | --- | --- | --- | --- |
| **First cohort** | | | | |
| Curriculum development | lamp sum |  | 3,100.00 |  |
| Accommodation (trainees) | Man-month | 15\*3\*400 | 18,000.00 |  |
| Course materials and equipment (modules, lab and field) | Lamp sum |  | 5,000.00 |  |
| Communication (internet + mobile card) | Lamp sum |  | 500.00 |  |
| Travel/logistics (Fuel, lubricant and driver periderm) | Lamp sum |  | 2,000.00 |  |
| Trainer’s fee | Man-training | 5\*1500 | 7,200.00 |  |
| prog coordinators | Man-Month | 2\*4\*500 | 4,000.00 |  |
| Overhead cost | 5% |  | 1,990.00 |  |
| **Second cohort** | | | | |
| Accommodation (trainees) | Man-Day | 15\*3\*400 | 18,000.00 |  |
| Course materials and equipment (modules, lab and field) | Lamp sum |  | 2000.00 |  |
| Communication (internet + mobile card) | Lamp sum |  | 500.00 |  |
| Travel/logistics (Fuel, lubricant and driver periderm) | Lamp sum |  | 2000.00 |  |
| Trainer’s fee | Man-training | 5\*1500 | 7200.00 |  |
| prog coordinators | Man-Month | 2\*4\*500 | 4000.00 |  |
| Overhead cost | 5% |  | 1685.00 |  |
| SUB-TOTAL |  |  | 77,175.00 |  |
| **Total= (subtotal \* 2 years)-3100** |  |  | **151,250.00** |  |

**N: B.** The training cost will depend on accommodation of trainees, cost of materials (field equipment, laboratory (consumables), module, stationary, manuals, personal protective equipment), transport, professional fees, accommodation of trainers, preparing and printing certificate, Hall rents (if outside BDU) and other unforeseen expenses. The cost is calculated based on 15 individuals per cohort and it is assumed a three-month training course, two cohorts per year. The budget may vary depending on overhead cost and inflation rate of the country. The budget on the first cohort includes module preparation and curriculum development expenses.

# G. Qualifications

## G1. Organizational track record

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| Bahir Dar University is organizing several short-term trainings for its staff and the community in general. Most importantly BDU has six certificate programs including Maritime, postgraduate certificate for primary and secondary school supervisions. BDU is a center of excellence in pedagogical sciences. BDU is managing about 366 programs of which 16 are e-learning programs. In addition to regular short courses, BDU has a capacity building program which handles more than 48 capacity building module trainings for academic, administration stafs and postgraduate students in 2022/23.  A few projects which has been handeled by BDU to in developing modules and implement trainings are listed below:  1. The Partnership in business and leadership transformation in higher education is a project implemented by Bahir Dar University , Deber Markos University , Indian University and Ivetech community College and supported by the US embassy. The main activities were developing training modules and implement trainings.  2. Lifting up Young Female Entrepreneurs (LiYFE) project Bahir Dar University, Deber Markos University, Indian University and the Mill and supported by the US embassy. The main activities were developing training modules and implement trainings.  3. Bahir Dar University Campus peace initiative project, Funded by the USAID Ethiopia Support program and Implemented by Bahir Dar University The main activities were developing training modules and implement trainings.  4. Enabling University peace education implemented by Bahir Dar , Hawassa and Jimma University and funded by the British Council and European Union. The main activities were developing training modules and implement trainings. |

## G2. Project leader: **Tesfaye Melak Tadesse (PhD)**

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**EDUCATION and TEACHING EXPERIENCE:** PhD in Grain Science in 2018 with minor graduate certificate in Applied statistics, MSc in Biology in 2009 and BSc in Applied Biology with minor Chemistry in 2005. Currently working as assistant professor of Grain Science at the department of plant Sciences, Bahir Dar University. I have more than sixteen years of teaching experience for undergraduate and graduate students. I have supervised 17 MSc students seven of which are seed science and technology students. I am giving courses such as Post harvest management, Seed health and postharvest management, Advanced biometry and statistical software, Toxicology and Agricultural pesticides and seminars. I have given on Good Agricultural practices and Integrated pest management trainings to the woreda agricultural experts. Fluent in English and Amharic.

**RESEARCH and CONSULTANCY EXPERIENCE:** I have initiated post-harvest loss reduction research and development project funded by USAID in 2014/15. It included testing on-shelf technologies like triple layered bags (PICS bags), GrainPro Super bags, metal drums, and plastic drums, and compared the efficacy in managing insects in traditional storage structures. I have Submitted written reports to USAID funded project PI and regional coordinators in 2015. I have served as Research Associate at Kansas State University, Manhattan, KS, USA from Dec 10, 2018 to April 15, 2019. During my stay, I have Managed laboratory insect cultures related to grain; did analysis of data and wrote manuscripts on different pesticide efficacy against insects; helped several graduate students on their research design and data analysis. Contributed to industry funded consultancy services which involved evaluation of pesticides for Winfield Solutions, Central Life Sciences, PureLine, and others using several stored- product insects; Communicated results in person with industry representatives.

I have served as Stored Product Technical Sales Intern at Bayer Crop Science, Manhattan, KS May - August, 2018. Trained clients on management of stored-grain insect pests; Met with potential customers of Bayer products, especially on pesticides use and convinced them to purchase products; Marketed Bayer’s pesticides to commercial clients; Collected complaints from clients and suggested potential solutions for better performance of products; Presented weekly reports of my work as an intern to Bayer. I have developed HACCP plan and standard operational procedures for several companies.

In 2021, I gave trainings to the community grain postharvest management to smallholder farmers. It included how to manage their grain, how to use PCS bags and metal silos, how to apply pesticides on grain and cares to be taken during pesticide application. Developed agricultural mechanization operational plan. I am currently engaged in projects such as crowed sourcing of finger millet; Black soldier colony establishment. More recently, I am leading the team on a consultancy service on designing an operational masterplan preparation for ‘*Mota*’ RTC specifically grain and horticultural crops post-harvest operations which is funded by KOICA; I am also leading a consultancy work on aflatoxin tasting and management funded by WFP.

**LEADERSHIP EXPERIENCES:** I served as a V/Dean for postgraduate, research and community services in the college of Agriculture and Environmental Sciences, Bahir Dar University, Bahir Dar, Ethiopia from Oct. 2019 to Jan.2023. Under this position I lead more than 28 MSc and 12 PhD programs; More than 14 Mega-research projects and more than 12 consultancy and community engagement projects. I have organized several national conferences, workshops and weekly seminars and public lectures. In addition to this I lead the University Agricultural research, Technology development and community engagement centre. In 2022, I led a team have successfully completed the consultancy service on feasibility study of five horticultural crops namely; avocado, papaya, banana, mango, onion and strawberry funded by the Ethiopian Horticulture producer and exporters association. I have successfully led the team for emergency irrigated wheat production in 2021/22. I led a team of experts to prepare agricultural mechanization machines’ specification, procurement and evaluation team. I have led the Grain Science graduate student council as a vice president at KSU, 2017. I have served as a laboratory manager from 2014 to 2015. I led a team of experts to commission 10 laboratory buildings based on research grade laboratory standards and reported the feedback to higher officials and construction companies.

**SELECTED PUBLICATIONS**

* Edwin Afful, **Tadesse, T.M**., Manoj Nayak, Thomas Phillips, 2020. High Dose Strategies for Managing Phosphine‐Resistant Populations of Rhyzopertha Dominica (F.) (Coleoptera: Bostrichidae)
* **Tadesse, T. M.,** Subramanyam Bh., 2019. Efficacy of filter cake and Triplex powders from Ethiopia against three externally developing stored product insect species. J. Stored Prod. Res. 82, 73-80.
* **Tadesse, T. M.,** Subramanyam Bh., 2019. Efficacy of Filter Cake and Triplex Powders Against Three Internally Developing Stored-product Insect Species. Amer. J. Entomol. 3, 15-23
* **Tadesse, T. M.,** Subramanyam Bh, Zhu, K. Y., Campbell, J. F., 2019. Contact Toxicity of filter cake and Triplex powders from Ethiopia against adults of *Sitophilus zeamais* Motschulsky (Coleoptera: Curculionidae). J. Econ. Entomol. 112, 1469–1475
* **Tadesse, T. M.,** Subramanyam Bh., Zhu, K. Y., Campbell, J. F., 2019. Contact Toxicity of filter cake and Triplex powders from Ethiopia against adults of *Sitophilus oryzae* (Linnaeus) (Coleoptera: Curculionidae). J. Stored Prod. Res. J. Stored Prod. Res. 80, 34-40.
* **Tadesse, T. M**., Subramanyam, Bh., 2018. Efficacy of filter cake and Triplex powders from Ethiopia applied to wheat against *Sitophilus zeamais* and *Sitophilus oryzae*. J. Stored Prod. Res. 79, 40–52.
* **Tadesse, T. M**., and Subramanyam, Bh., 2018. Efficacy of filter cake and Triplex powders from Ethiopia applied to concrete arenas against Sitophilus zeamais. J. Stored Prod. Res. 76, 140–150.

**HONORS AND AWARDS:** Recognized as best vice dean for the years 2019 and 2020 at BDU. Got a lot of awards and fellowships. Some of them are: Outstanding Graduate student Award, Student Life Extra Ordinary Student Award, Anheuser-busch Fellowship, International Coordinating Council Scholarship, Selected for participation in the Spring 2018 Graduate Student Leadership Development Program (GSLDP), and Kansas State University International Student and Scholar Services Certificate Award, all in 2018. Grain Science Graduate Students Organization 10th annual research symposium best presentation award and certificate (2nd position) 2017, Borlaug Summer Institute on Global Food Security fellowship at Purdue University in 2017, Rene Buhler Memorial Scholarship 2017, Graduate Student Council Travel Award 2017. Certified on Integrated pest management and fumigation safety in 2017. Feed the Future Innovation Lab fellowship for the Reduction of Post-Harvest Loss Fellow 2016 – 2018. Cited as “Ethiopian Graduate Student Finds Safer Way to Store Grain” on AGRILINKS website (<https://agrilinks.org/post/ethiopian-graduate-student-finds-safer-way-store-grain>). Certified on Principles of Hazard Analysis Critical Control Points in 2016 for food safety purposes.

## G3. Core staff 1: **Dr. Dereje Ayalew**

Dr. Dereje Ayalew, an esteemed Associate Professor of Agronomy and Crop Physiology, holds a prominent position at Bahir Dar University's College of Agriculture and Environmental Sciences. His pivotal role as one of the founding members of the college in 2005 was instrumental in its establishment. Dr. Dereje's contributions encompassed crucial aspects such as procuring essential equipment and recruiting competent staff to successfully launch the initial departments, including Natural Resource Management and Rural Development, as part of the BSc program in 2006. Subsequently, he played a vital role in introducing BSc programs in Plant Sciences, DRMS, Animal Science, and other related fields in subsequent years, notably in 2007.

Furthermore, Dr. Dereje has served as the inaugural department head for Rural Development and Plant Sciences, making significant contributions to their growth and development. Throughout his tenure, he has consistently demonstrated excellence in teaching a diverse range of courses across various programs, including BSc, MSc, and PhD levels. Some of the notable courses he has taught include Field Crop Production, Introduction to Plant Physiology, plant Anatomy and Morphology, Introduction to Climatology, Advanced Plant Physiology, System Analysis and Crop Modelling, Crop and Climate Modelling, Climate-Smart Agriculture, Advanced Seed Physiology, Advanced Crop Physiology, and PhD seminars at prestigious universities such as BDU, Hawassa, Ariba Minch, and Somalia (Hargeisa) Universities. Dr. Dereje's expertise and dedication have earned him a highly respected reputation in the field of agronomy and crop physiology. His commitment to education and research is evident through his extensive teaching experience and his valuable contributions to the development and expansion of academic programs within the department.

In addition to his teaching responsibilities, Dr. Dereje has actively participated in the management of several international projects. He served as the manager of the BENEFIT Integrated Seed Sector Development Project, Amhara Unit, from 2013 to 2020. During this time, he played a key role in overseeing the project's activities and ensuring its successful implementation. Additionally, he managed the Post-Harvest Loss Reduction Project from 2017 to 2016, where he contributed to reducing post-harvest losses and improving food security. Furthermore, Dr. Dereje served as the coordinator of FRG-projects from 2014 to 2016, further expanding his expertise and knowledge in his field of specialization. These experiences, coupled with the valuable insights gained from collaboration with senior scientists and exposure to international practices, have equipped him to be a well-rounded scholar in his field.

Currently, Dr. Dereje holds the position of Regional Unit Manager for the Upscaling Access to Crowdsourced "Winner" Seed Varieties project. This initiative aims to embed crowdsourcing in the Ethiopian system as a delivery mechanism for a more dynamic, diverse, and market-responsive seed portfolio. Dr. Dereje has been serving in this role since 2020 and continues to contribute to the project's implementation and success. Furthermore, Dr. Dereje has actively participated in various research, technology transfer, and community service projects focused on crop production, agronomy, seed science, climate change and variability, and climate-smart agriculture. His expertise in these areas is reflected in his authorship and co-authorship of over 33 journal articles. Dr. Dereje is a distinguished member of esteemed organizations such as the Crop Science Society of Ethiopia, Society of Eco Tourism, and Ethiopian Red Cross Societies, where he contributes to the advancement of knowledge and the betterment of society.

In addition, Dr. Dereje has served as a supervisor and co-supervisor to numerous postgraduate students, successfully guiding the graduation of 6 PhDs and 52 MSc students. His dedication to education extends to teaching a diverse range of courses to undergraduate and postgraduate students, including MSc and PhD programs. Dr. Dereje's contributions have been recognized and appreciated by institutions such as the Ariba-Minch Water Technology Institute and the Faculty of Meteorology and Hydrology, who have expressed gratitude for his valuable contributions in examining over 26 MSc students and teaching postgraduate students. Furthermore, he has served as a respected member of PhD and MSc Examining Committees at prestigious universities including Ethiopian Academy of Sciences (EAS), Hawassa University, University of Gondar, Debre Tabor, and Debre Markos Universities. Moreover, Dr. Dereje played a significant role in the development and launch of the MSc program in Seed Science and Technology within the Department of Plant Sciences. Since its inception in 2015, he has chaired the program, overseeing its growth and ensuring its academic excellence.

## G3. Core staff 2: Dr. **Wossen Tarekegne**

1. **Personal profile:**
   1. Full Name: **Wossen Tarekegne** Sex: Male
   2. Nationality/Citizenship: Ethiopian

Contact address: email: [wossentarekegne1@gmail.com](mailto:wossentarekegne1@gmail.com); mobile: 0918009285

* 1. Country of permanent residence: Ethiopia

1. **Educational Background:**
   1. Degree obtained: PhD in Plant Breeding, (with Dissertation: Genetic Inheritance, Seed System and Participatory Variety Selection in Finger Millet [*Eleusine coracana* (L.) Gaertn]
   2. MSc. in Dry Land Agronomy, (with Thesis: The Performance of Chickpea (*Cicer arietinum*) Varieties Treated with Osmo and Hydro Priming) and
   3. BSc. in Plant Science
2. **Employment and Professional Experience:**
   1. Current employer university: Bahir Dar University

I am working under the course chair of seed science and technology, in plant sciences department, in college of agriculture and environmental sciences. I offer /taught courses of seed production and management, seed inspection and certification, seed quality assurance, seed policy, seed system, seed marketing, seed science and production, crop improvement and biotechnology and plant breeding for post graduate program. I have done also research and advice/ supervision for seed science and technology and plant breeding students; I also review scientific papers from national and international Journals and published different seed science and plant breeding related research works.

* 1. Previously I was in Debre Markos University and Mertulemariam ATVET College as instructor, advisor and researcher by won research grant from Debre Markos University and also worked with different leader responsibilities at Mertulemariam ATVET College.
  2. I was a site manager of 2.5 hectares field trial site with project of MOA/FAO in Nattional Fertilizer input unit in fertilizer recommendation for wheat (ET-13) and tef (DZ-354) variety and undertaken adaptation trial for tef, wheat and barley in vertisol. The improved varieties selected by farmers during field days were multiplied and distributed to farmers in revolving fund and sown in different agro ecologies. Additionally I was done a bio fertilizer research on chickpea crop in 2.5 hectares field trial site together with national soil laboratory in identifying strains of bacteria that increase number of nodules to fix nitrogen in the soil.

When I was Agriculture Input and Credit Expert in Enemay district agriculture development office, contractual seed production was undertaken with my supervision for three consecutive years, with tef, wheat and chickpea improved varieties more than 100 hectares yearly by taking contractual agreement with farmer fields, elementary schools and prison or gaol crop fields.

1. **Training:**

I was taken different trainings among them, Agricultural Research Development, Implementation and Extension (Workshops on rural innovation team work and communication, Rural appraisal, Participatory research, Farmer learning and technology dissemination), which **Financed by ICRA and NUFFIC;** teaching methodology and Research writing methods, **Financed by Ministry of Agriculture;** Bio fertilizer training programme, **Financed by National soil laboratory and National fertilizer Industry Agency,** Participatory rural appraisals training in theory and practice in the preparation of Participatory community plan, **Financed by FINNIDA** and seed production and certification, **Financed by National Seed Industry Agency.**