

HARAMAYA UNIVERSITY

Office of the Research Affairs

Newsletter



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Editor's Note

Greetings to all our readers in Ethiopia and beyond! With great pleasure, we present to you the first new edition newsletter of the Haramaya University, Office of the Research Affairs.

To differentiate universities along with certain areas of specialization, Ministry of Education (the former Ministry of Science and Higher Education) selected Haramaya University (HrU) as one of the research universities in Ethiopia. In line with this, the University has developed the Ten-Year Strategic Plan (2020/21-2029/30). At the heart of the plan 'visibility and communication' is among strategic priorities and the focus areas of the University. For this purpose, Research Communication Team was organised under the HrU, Office of the Research Affairs. Research Communication Team aimed to foster the continuous sharing of knowledge and information, key experiences and critical lessons related to research and development interventions of the university, using a diverse range of documentation materials and communication channels.

Thus, therefore, this newsletter is part of this initiative which aimed to enhance knowledge sharing and communication among our audiences in Ethiopia and beyond.

In this issue, we provide you with the key updates in which Haramaya University Office of the Research Affairs was actively involved for the past nine-month period (from July 2021 to March 2022).

The updates summarize the key activities and achievements recorded under the different thematic of the Office of the Research Affairs. Furthermore, this edition shall share success stories recorded by the partnership between Haramaya University and externally funded projects.

This newsletter does not necessarily report all or all of the work of the Office of the Research Affairs. However, the key activities and achievements are presented with beautiful pictures.

Do spare some time for these newsfeeds. "We all have a way to go, but the walk is worth it."

I welcome feedback and expect the newsletter to continue to evolve.

I wish you good reading!

Kemal Kasim

Research Communication Team Leader

Haramaya University, Office of the Research Affairs

Tel: +251 255 530 324 (Office)

Fax: +251 255 530 106

P.O.Box: 138, Dire Dawa, Ethiopia

Telegram: <https://t.me/HrUResearchAffairs>

Facebook: <https://www.facebook.com/HrUResearchAffairs/>

LinkedIn: <https://www.linkedin.com/company/hruresearchaffairs>

Twitter: <https://twitter.com/ResearchAffairs>

Website: <http://www.haramaya.edu.et/>

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Mission of Haramaya University

The mission of Haramaya University is to produce competent graduates in a diverse field of studies, undertake knowledge-generating, problem-solving and cutting-edge research, and provide demand-driven and transformative community engagement activities that will contribute to local, national, regional, and global sustainable development.

Vision of Haramaya University

Haramaya University strives to be one of the top ten universities in Eastern Africa with an international reputation by 2030.

Goal of Haramaya University

To evolve as an autonomous and independent (academic and research institute) graduate and research university with a competitive national and international quality and relevance standards in its academic, research, and community engagement endeavours.

Message from the Vice President for Research Affairs

Dear Readers,

Haramaya University (HrU) is a prominent higher learning institution in Ethiopia known for its strong research culture since its establishment as Imperial College of Agriculture and Mechanical Art in 1952. HrU has served our country, Ethiopia, as a national centre of excellence for higher level training in agricultural sciences and agricultural research for more than six decades. HrU has expanded the nature and scope of its research and training programs to address the need of the country in various sectors and disciplines, including health and medical sciences, natural and computational sciences, engineering, technology, education, law, and social sciences and humanities. HrU also runs research institutes and regional centers of excellence like the Africa Center of Excellence for Climate Smart Agriculture and Biodiversity Conservation.

As a result of its experience, lab and research facilities, staff profile, publications and other research outputs, HU was designated as research-intensive university with a strong focus on postgraduate programs by the Federal Democratic Republic of Ethiopia Ministry of Education (the former Ministry of Science and Higher Education) in 2021. Accordingly, HrU has developed Ten Years Strategic Plan focusing, among other things, on further strengthening its research culture and enhancing socio-economic impact of research conducted by faculty and postgraduate students.

The purpose of the research program at HrU is to provide context-relevant and sustainable solutions to local and national development challenges through conducting impactful applied and basic research with a special focus on agriculture, health, tourism, mining, and applied sciences. Research on indigenous knowledge (both hard and soft) is at its nascent stage but getting growing attention as a crosscutting issue. The recent establishment of Institute of Gada Studies as well as Institute of Peace and Development at HrU is expected to take our research on indigenous knowledge and institutions to the next higher level.

Our thematic-based research projects generate technology, knowledge, and policy-relevant evidence or information. The results are disseminated to farmers, agro/pastoralist, urban households, community-based organizations, development organizations, entrepreneurs (enterprises owned by women and youth groups), policymakers, and others. We use different channels and media for dissemination purpose, including printed, electronic, social and mainstream media, policy dialogue, knowledge sharing events, training of experts and extension workers, and on-farm and FTC-based demonstrations.

This Newsletter is one of the means we use to disseminate information regarding recent research initiatives and showcase the use and impact of selected research results. We hope development organizations, research partners, and local and national policy actors can find the newsletter useful. As a learning organization, we would like to have feedback and suggestions from

readers to further improve the content and structure of the newsletter in the future.

Wishing you happy reading!



Dr. Tesfaye Lemma (PhD)

Vice President for Research Affairs, Haramaya University
Associate Professor of Rural Development and Agricultural Extension, School of Rural Development and Agricultural Innovation, Haramaya University



Haramaya University at a Glance

Haramaya University (HrU) is one of the oldest institutions of higher learning and is a pioneer in agricultural education and research in Ethiopia. The mission of HrU is to produce competent graduates in a diverse field of studies, undertake knowledge-generating, problem-solving and cutting-edge research, and provide demand-driven and transformative community engagement activities that will contribute to local, national, regional, and global sustainable development. The university is recently designated as a research university with a focus on research excellence, discovery and transferring of new knowledge as well as academic excellence in postgraduate studies. The university envisions becoming one of the top ten universities in Eastern Africa with an international reputation by 2030. In recent years, it has played a significant role in public and national investment in research and innovation. This has led to the establishment of a strong professional base for knowledge and technology generation and distribution. This prompted the university to take advantage of its new strengths from past investments and connect it to current and future economic and social needs. In this regard, the university has been managing several multi-million dollar research and development projects that will significantly contribute to the local community and the country's economic and social development.

It has a long history of partnerships and collaborative research and extension undertakings with local, national, regional and international organizations in the public, private, NGO and other civil society foundations. Internationally, the university is working with Wageningen University and Research Center, Purdue University, Harvard University, University of Florida, Waterloo University, University of Tucson, Camp Field University, Kansas State University, Ghent University and International Potato Centre (CIP).

Haramaya University Office of the Research Affairs owns the overall research and technology generation and dissemination process of the university. It is responsible for the strategic guidance and mentoring of all research and extension activities as well as documentation, publication and dissemination of research outputs of the University. The Office of the Research Affairs is composed of four major directorates: These include Directorate for Research Groups and Partnerships, Directorate for Research Extension and Publications; Directorate for Research Facilities Management; and Directorate for Seed Inspection and Certification Centre.



Partners and stakeholders visited sorghum seed production field at Babile woreda, supported by Haramaya University. Photo credit: Kemal Kasim

Congratulations!

Ministry of Education Places EAJHBS on List of Accredited Journals!

Haramaya University is pleased to announce that one of its journals, East African Journal of Health and Biomedical Sciences (EAJHBS) is nationally accredited by the Ministry of Education. EAJHBS is among the 21 national journals accredited by the ministry today March 11, 2022. The move enhances the quality and visibility of the journal by encouraging scholars to make use of it and helps to raise the university's international reputation.

EAJHBS is peer-reviewed open access journal published bi-annually by the College of Health and Medical Sciences, Haramaya University. The journal is dedicated to publishing research articles in areas of Health, Biomedical Sciences and Medicine coming from Ethiopia and anywhere in the world.

"This exciting achievement has been possible thanks to the hard work and dedication of the editorial board members of the journal, University Management, Research Extension and Publication Directorate, particularly the Research Publication team", said Dr. Chanyalew Seyoum, Research Extension and Publication Directorate, in his email communication addressed to the University staff. He also appreciated the stakeholders who have directly and indirectly contributed to the achievements.

EAJHBS joins three other accredited journal listings of the Haramaya University which are accredited by the Ministry of Education. This is a huge milestone for Haramaya University. Since its establishment in 2016, the journal has published its 5th Volume No 1.

Updates from the Office of the Research Affairs

This update summarizes the key activities and achievements recorded under the different thematic of the Office of the Research Affairs over the past nine-month period (from July 2021 to March 2022).

Research Highlights

Supporting Research Projects

To conduct problem-solving and impact-oriented research as well as to undertake demand-driven technology and knowledge dissemination that have community relevance the University has organized six different major research thematic areas under the Office of the Research Affairs. All six research thematic areas have leaders (at the director level) and there are 22 sub-research areas. Accordingly, the university has been offering research funds from the government treasury budget for its staff members to engage in problem-solving and innovative research under five research grant categories: HU Regular Research Grant (HURG), HU Innovative Fund (HUIF), HU Knowledge Transfer (HUKT), HU Women Research Grant (HUWG), and HU Special Support (HUSS).

Over the past nine months, 34 projects have been completed among 138 on-going research projects that have been initiated in the previous years and the remaining 104 are on-going. In response to the provision of the funds for 2014 E.C fiscal year (2021/22), 51 projects have been newly approved under five research grant categories. Besides, 15 PhD students' dissertation research has been funded through their supervisor on a competitive basis. About 41,358,056 birr was allocated for these projects.

Moreover, in line with the Ten Year Strategic Plan and the vision to make Haramaya University, an intensive research University, a new research grant scheme called Haramaya University Grand Challenge Research Grant (HUGG) was newly initiated and implemented in addition to the existing five research grants. The "HUGG" aimed to fund multi-year, multi-/trans-disciplinary, rigorous, and technically sound research projects that are relevant to the most pressing societal problem and generate new and ground-breaking research results with relatively large budgets and more impactful results. The grant fund is multi/trans-disciplinary research projects that bring together researchers from different disciplines including junior, senior researchers and graduate students. The office of research affairs established an independent *ad-hoc* committee known as the University Scientific Committee (USC) to handle the evaluation of concept notes and proposals submitted against the call for proposals for HUGG. The members of USC were qualified and experienced staff members drawn from relevant colleges and/or institutes of the university, with the minimum rank of Assistant Professor (PhD holders). A series of evaluations were conducted on 50 concepts notes received in response to the call for proposals to vet the funding proposals based on pre-set criteria such as whether the proposed research addresses grand challenge (s)- well-articulated societal problem, meets the required scientific merit, feasible, multi/trans-disciplinary, generates usable technology, knowledge and/or policy-relevant evidence. Accordingly, 10 top-ranking proposals have been selected for funding and eight have signed a binding agreement with the office of research affairs and embarked on their research.



Participants of Haramaya University Grand Challenge Research Grant (HUGG) review workshop including University Scientific Committee (USC) and researchers from different disciplines including junior, senior researchers and graduate students. Photo credit: Fuad Ahmed

In the lowlands of East Hararghe Zone woredas (Fedis and Babile), participatory sorghum Varieties selection was conducted. The objective of the study was to identify highly adaptable and good yielding varieties, improve the accessibility of improved varieties to the farmers, and document the farmers’ indigenous knowledge of sorghum production and management. The study will help further intervention related to sorghum variety development.

Furthermore, a Geographic Information System (GIS) and Remote Sensor Technology-based Surface-water analyses in Gobeles and Erer Basins were conducted. This study was carried out by modelling suitable Gobeles and Erer basin areas to improve groundwater levels and increase ground moisture and water levels in the basin to prevent groundwater depletion. This will help to cope with the frequent rainfall shortage caused by climate change and can reduce erratic and unusual rainfall patterns. The study results can be used in the basin where the study was conducted and other similar environmental conditions.

To support post-Covid-19 marketing services online marketing application software was also developed and tested. The application software is expected to provide digital service to businesses and consumers to remain resilient and functional during the epidemic and to reduce its social and economic impact.

Promising Germplasm

Two promising potato genotypes (CIP-391058.558 and CIP-392640.501) that have been evaluated in different cropping seasons for different traits in Eastern Ethiopia were found promising and were submitted to the National Variety Registration and Release Committee. The results are expected to be announced in near future.

EXTENSION AND OUTREACH

Demonstration and Promotion of Technologies through Farmers Training Centres (FTCs)

The university promoted new agricultural technologies using Farmer Training Centres (FTCs) in Eastern Ethiopia. Accordingly, different crop and livestock technologies were demonstrated and promoted at 100 FTCs in 23 woredas from East and West Hararghe zones, Dire Dawa Administration and Harari Regional State (Figure 1). This is implemented in collaboration with the local Bureau of agricultures (BoAs). Overall, a total of 96 food and feed crop varieties with multiple traits were promoted at FTCs (Table 1).

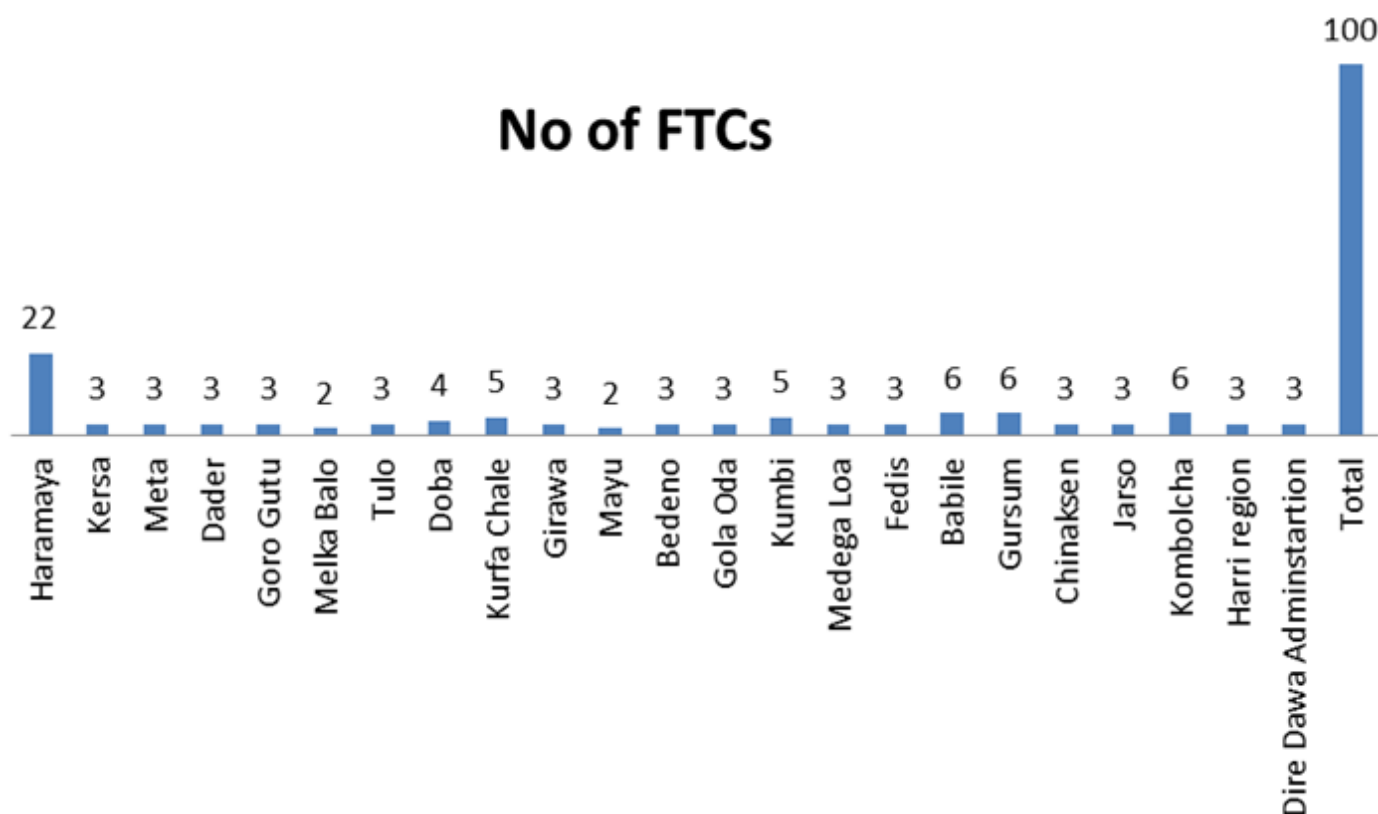


Figure 1: Number of FTCs addressed in East and West Hararghe Zones, Harari Regional State and Dire Dawa Administration.



Table 1: Promotion of Crop, Forage and Chicken breed technologies through FTCs

No	Types of Crop	Name of Varieties	Number of Varieties
1	Sorghum	Muyra-1, Muyra-2, Fandisha, Fadis-1, Teshale, Adele, Mako, Gubiye, Melkam and Daqaba	10
2	Maize	Bate-1, Afran Qallo, Alemaya composite, Rare-1, Shalla, BH661, BH140, MHQ138, BHQP545, BH545, Melkassa-2, Melkassa-4 and Melkassa-6	13
3	Common bean	Haramaya, Fadis, Tiniqe, Dursitu, Hirna, Gofta, Ayenew, Awash-2, Roba, Mioftu, Kufanzik, Awash Melka and Nasir	13
4	Faba bean	Gachana, Moti, Dinsho and Wolki	4
5	Field pea	Meti	1
6	Wheat	King bird, Ogolcho, Wane, Qulqullu, Jalane and Limu	6
7	Fenugreek	Chala and Burqa	2
8	Ground nut	Babile-1, Babile-2, Babile-3, Babile-4, Babile-5, Bahaguda, Roba and Worer 961,	8
9	Sesame	Bahanecho, Bahazeyt and Adi,	3
10	Potato	Bubu and Gudane	2
11	Sweet potato	Berkume, Adu, Dilla, Alamura and Kabode	5
12	Garlic	Chalanqo-1	1
13	Shallot	Improved Huruta	1
14	Onion	Red creole	1
15	Swiss chard	Ford hook Giant	1
16	Beetroot	Detroyed dark red	1
17	Salad	Great lakes	1
18	Cabbage	Euro and Holland	2
19	Carrot	Nantes and Haramaya-1	2
20	Papaya	Marando	1
21	Orange	Valencia, USA naval,	3
22	Apple	Golden Dorset, Ana, and Perinsisa	3
23	Chick pea	Ararti and Habro	2
24	Sub-total		86
	Types of Forage and Live-stock	Name of varieties and/or breeds	Number of Varieties/breeds
1	Chicken	Synthetic breed	1
2	Bull service	Improved Ogaden breed	1
3	Alfalfa	DZF-552	1
4	Lablab	Dolicos lablab	1
5	Cow pea	Black eyed	1
6	Vetch	Vicia villosa 6792	1
7	Pigeon pea	Degaga	1
8	Brachiaria grass	Brachiaria decumbens cv. Basilisk, and B. brizantha cvs. Xa-raes and Piatã	3
9	Sub-total		10

Supporting Irrigation-Based Wheat Production Initiative

The University has supported the Irrigation-Based Wheat Production initiative through technical and technological support, the initiative is one of Ethiopia's government agricultural transformation strategies being implemented in the various parts of the country. The key achievements were summarized as follows.

First, considering the acute shortage of quality seeds at the farmer's level 1050 Qts of 'kingbird' wheat variety were distributed to 17 woredas (Gola Oda, Mayu Muluke, Kumbi, Melka Balo, Girawa, Kersa, Bedeno, Babile, Gursum, Dader, Meta, Goro Gutu, Goro Muti, Kombolcha, Haramaya, Kombolcha and Kurfa Chale) in East Hararghe Zone. More than 1,590 farmers and agro-pastoralists benefited from this intervention.



Media briefing made during seed distribution to 17 woredas of East Hararghe Zone. Photo credit: Fuad Ahmed

Second, to enhance access to and use of farmers' preferred quality seeds at the local level two farmers' groups consisting of 160 members were organized and supported in Gola Oda and Babile woredas to produce and market quality seeds. Accordingly, 150 quintals of wheat seeds were distributed to these farmer's groups and have been producing seed on 150 hectares of land at Gola Oda and Babile woredas. In addition, the University provided technical training for seed producers' farmers and partners to enhance knowledge and skills in quality seed production and management. More than 3000 qts of quality seeds were harvested.



Representatives of HrU Office of the Research Affairs and East Hararghe Zone BoA visited farmers based Irrigated Wheat Seed production field at Gola Oda Woreda. Photo credit: Kemal Kasim



Farmer visiting his irrigation based wheat seed production field at Gola Oda woreda. Photo credit: Kemal Kasim

Third, to support irrigation-based wheat production and productivity through research-based evidence; HrU has conducted participatory on-farm research to evaluate the adaptation and yield performances of 25 wheat varieties against the seasonal effects and other factors. Accordingly, this research is expected to identify and promote promising irrigated wheat varieties which are ecologically suitable, easily adaptable, economically profitable and socially preferable, particularly in the lowland Hararghe Zones and similar agro-ecologies. The research is being conducted in three woredas (Gola Oda, Babile and Dader). Currently, data collection was completed and report writing was underway.



Representatives of HrU Office of the Research Affairs and East Hararghe Zone BoA visited Participatory Variety Selection (PVS) trial field at Gola Oda Woreda: Photo credit: Kemal Kasim



Representatives of HrU Office of the Research Affairs and East Hararghe Zone BoA made discussion on Participatory Variety Selection (PVS) trial field at Dader Woreda. Photo credit: Kemal Kasim

Fourth, to improve wheat post-harvest handling through agricultural mechanization demonstration of post-harvest technologies launched through approval of two grant projects. These projects include the improved design of a wheat thresher machine including a cleaning system or fan unit, and a motorized portable mini wheat harvester machine.

Technology Dissemination

The University also disseminated diverse best-bet technologies for different groups of communities. This includes 1,633.20 Qts of different cereal crop varieties, 1,024,000 cutting of Orange Fleshed Sweet Potato, 179 Qts of Potato, 85kg of vegetable and foraged seeds (excluding potato and Sweet Potato), 4928 different fruit seedlings, 75 improved chicken breeds, 28 mobile poultry house and 15 bull service cows (Table 2). The work aimed to enhance food and nutrition security and contribute to the production and productivity of the beneficiaries. Overall, more than 15,056 households from East and West Hararghe Zones, Harari Regional State and Dire Dawa Administration benefited.

Table 2: Best-Best Technology Dissemination

No	Type of Crop/Animal	Measurement	Quantity	Number of beneficiaries
1	Wheat	Quintals	1350	2680
2	Maize	Quintals	73	1217
3	Sorghum	Quintals	60	2000
4	Common bean	Quintals	70	3500
5	Chick pea	Quintals	80	1600
6	Ground nut	Quintals	0.2	36
7	Potato	Quintals	179	150
8	Orange Fleshed Sweet Potato (OFSP)	Cutting	1,024,000	2400
9	Vegetables seeds (carrot, shallot, Ethiopian kale)	Kilogram (Kg)	60	240
10	Orange seedling	Pieces	1236	508
11	Lemon seedling	Pieces	178	50
12	Mendarin seedling	Pieces	434	200
12	Papaya seedling	Pieces	2373	339
14	Apple seedling	Pieces	42	7
15	Forage seed	Kilogram (Kg)	25	11
16	Chicken (breed)	Head	75	75
17	Bull service	Head	15	15
18	Mobile poultry house	Pieces	28	28
19	Total			15,056

Basic Seed Multiplication

To improve the shortage of early generation seeds, basic seed multiplication has been carried out at the university's research stations. Accordingly, 1183.45 quintals of different crop seeds such as Potatoes, Wheat, Common bean, Maize, Sesame, Chickpea, Carrot, Shallot, and Ethiopian Kale were produced (Table 3).

Table 3: Basic seed multiplication of different crop varieties

No	Type of Crops	Unit of measurement	Quantity (Qts)
1	Potato	Quintal	1077
2	Wheat	Quintal	35
3	Maize	Quintal	34
4	Chick pea	Quintal	4
5	Common bean	Quintal	32
7	Shallot	Quintal	1
6	Carrot	Quintal	0.2
8	Ethiopian kale	Quintal	0.25
9	Total		1,183.45

Supporting Youth Groups and Women Farmers

The University also organized and supported six youth groups (Tuta Kanisa, Finta Bas Irrigation users group, Haqa Bas, Efa Bate Kebele, Harari region and Kuro Jalala) in Haramaya and Kersa woredas. The groups have been provided with various types of vegetable seeds, and irrigation equipment (motor pumps, dynamo, water pump, and water canvas). Similarly, 260 women farmers in various woredas of East Hararghe Zone and Harari Region have been supported with improved vegetable seeds and livestock breeds.

Facilitating Training and Capacity Development

During the past nine months, various training, workshops and capacity development activities have been conducted for researchers, frontline extension staff and partners. In collaboration with the Ministry of Education, 20 researchers from various colleges, research theme leaders and an ad-hoc committee of HrU Institutional Research Ethics were trained on the basics of research ethics. 26 researchers have been also involved in on-line training on research proposal writing organised by the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM). On top of that, Hararghe Health and Demographic Centre (HHDC) provided training on quality data collection and management to 126 data collectors and 17 supervisors represented from two woredas (Kersa and Haramaya) and Harar city. Likewise, an awareness-raising workshop of the Hararghe Health and Demographic Centre was provided for 80 mothers represented from Kersa and Haramaya woredas. The centre has also shared experiences with six Ethiopian Universities (Arba Minch, Dilla, Assosa, Semera, Arsi and Ambo) and the Ethiopian Institute of Public Health. Moreover, the centre has shared research results with different partners and stakeholders such as the Ministry of Health, the Ethiopian Public Health Institute and professional associations, and different Health Bureaus including Harari regional state, Dire Dawa and East Hararghe Zone.

On the other hand, Training of Trainers (ToTs) on Animal Husbandry (Dairy Cattle production and management, Poultry production and management) and Nutrition-sensitive Agriculture was conducted for 46 experts of Animal Sciences and Agricultural Extension represented from 19 woredas in East Hararghe Zone, Harari Region and Dire Dawa Administration. The ToTs were conducted at HrU main campus from 16-18 November 2021. The training content covered included dairy production and management, poultry production and management, nutrition-sensitive agriculture, and other related topics. Technical training was also provided for seed producers' farmers and partners to enhance knowledge and skills on quality seed production and management. A total of 108 trainees (seed producer's farmers, woreda and Zone BoAs experts, and DAs) participated in the training in both woredas (Babile and Gola Oda).



Group photo of participants involved in Training of Trainers (TOT) on Animal Husbandry (Dairy Cattle production and management, Poultry production and management) and Nutrition-Sensitive Agriculture. Photo credit: Kemal Kasim

In collaboration with the Department of Food Science and Post-Harvest Technology, two days of training were conducted on food handling, and general hygiene and sanitation practices. The training was aimed to enhance the knowledge and awareness of food and food-related service providers on food handling, hygiene and sanitation and ultimately improve the quality of food and food-related services provided at Haramaya University. About 30 trainees from the student cafeteria, staff lounge, private restaurants, dairy farm, abattoir, poultry farm, and Haramaya University housing management participated in the training workshop.



Participants of the training on food handling, and general hygiene and sanitation practices. Photo credit: Fuad Ahmed



Participants of the training on food handling, and general hygiene and sanitation practices. Photo credit: Fuad Ahmed

Furthermore, in collaboration with HrU based National Groundnut Research Program and the Office of the Research Affairs Office has conducted training for farmers, development agents and woreda agricultural experts on groundnut production and management under the theme of "Improved Technologies Adoption for More Production" on March 26, 2022, at Babile Woreda. The overall objective of the training was to enhance the production and consumption of groundnut at three woredas (Fedis, Babile and Gursum) through scaling the production of newly improved varieties. A total of 48 trainees (11 female farmers) from Babile, Fedis and Gursum woredas participated. At the end of the training, the improved seed of three groundnut varieties was given to the trainee for further multiplication, production and consumption.



Participants group photo during groundnut production and management training at Babile woreda. Photo credit: Tedros Lishan



A group of experts and development agents exhibiting groundnut varieties prepared for distribution. Photo credit: Tedros Lishan

Finally, training in the management of field experiments and data collection was conducted for technical and field research assistants and research station managers who participated from nine different HrU research stations.



Participants group photo during training on management of field experiments and data collection management at Haramaya University. Photo credit: Fuad Ahmed

Providing Seed Inspection and Certification Service

Based in HrU, Seed Inspection and Certification Centre (SICC) is an autonomous body accountable to Oromia Input Authority (OIA) and is responsible for seed inspection and certification in East and West Hararghe Zones. Accordingly, the centre facilitated seed inspection and certification services to the public, cooperatives and private basic and certified seed Producers in the zones. Accordingly, the University inspected 1061.1 hectares of land covered by quality seeds in 11 woredas in the east and west Hararghe zones, of which 986.6 hectare was accepted and the rest was rejected due to non-compliance (Table 4). This has contributed to improving the seed shortage in the region and benefitted the seed producers to get premium prices for quality seeds.

Table 4: Seed crop varieties inspected and certified during the 2021/22 cropping calendar.

No	Seed producers	Crops	Accepted (ha)	Rejected (ha)	Total
1	Afren Kelo Farmers' Cooperative Union	Maize	191	4	195
		Wheat	96.5	5	101.5
		Sorghum	288.5	11.5	300
		Mung bean	1	0	1
		Common bean	10	0	10
2	Burka Galati Farmers' Cooperative	Maize	73.5	0.5	74
		Wheat	20	0	20
		Mung bean	0	13.5	13.5
3	Fedis Agricultural Research Center	Maize	6	0	6
		Sorghum	14.5	5.5	20
		Common bean	6	0	6
		Mung bean	2	0	2
4	Haramaya University- Enterprise Directorate	Potatoes	7.6	0	7.6
		Wheat	0	3	3
		Maize	5	0	5
		Common bean	2	0	2
5	Mechara Agricultural Research Centre	Maize	4.5	0	4.5
		Sorghum	3.5	0	3.5
		Common bean	3	0	3
		Mung bean	1	0	1
		Ground nut	1	0	1
6	Chercher Oda Bultum Farmers' Co-operative Union	Maize	120	0	120
		Common bean	30	23	53
7	Chiro National Sorghum Research and Training Centre.	Sorghum	0	8.5	8.5
8	Debal Gara Muleta Farmers' Cooperative Union	Wheat	100	0	100
Total			986.6	74.5	961.1



HrU Seed inspection and Certification team conducting inspection to wheat seed production field at Chinaksen woreda. Photo credit: Lemma Dagebas

Research Publications

The University has been managing the Research Publication in five academic journals administered by the university. Over the last nine months, the East African Journal of Health and Biomedical Sciences (EAJHBS) was nationally accredited by the Ministry of Education. EAJHBS joins three other accredited journal listings of the Haramaya University which are accredited by the Ministry of Education.

Various activities' conducted are improving the online journal management system to enable the University's journals to obtain DOIs and be indexed in internationally reputable indexing agencies. Over the past nine months, 501 research papers have been published by university researchers in peer-reviewed research journals, contributing to the university's global reach. Publication in reputable journals has considerably increased recently. For example, a total of 408 journal articles published by university researchers in 2021 were indexed on the Web of Science.

Research Communications

Established under the University of the Office of the Research Affairs, the Research Communication team aims to support knowledge sharing, communication and visibility of the University's research, extension and development work. Accordingly, the Research Communication team has been supporting the communication and knowledge sharing in collaboration with the University's Public Relations directorate and Media partners. Currently, a communication strategy was developed to provide central leadership in communication, knowledge sharing, and information exchange. The strategy is expected to enhance research visibility and impact at the local, national and international levels. In addition, social media channels including Facebook, Twitter and LinkedIn pages were created to share the University's works and impacts. Hence, posting of research activities, events, and results have been regularly conducted contributing to improved knowledge and information sharing.

To facilitate knowledge sharing and get buy-in from government and stakeholders, 15 research projects that were completed in 2021 have been reviewed for the preparation of the 2021 policy brief. Accordingly, nine policy briefs have been developed in English and translated into Afan Oromo and Amharic.

Supporting Knowledge Sharing

To ensure knowledge sharing, a field day was organized to showcase University's research and extension success stories at Babile woreda, East Hararghe Zone. About 200 people including farmers, researchers, woreda experts, Development Agents, and Zone and woreda officials participated. The participants visited success stories of research and extension including adaptation and yield performances of different crop research trials, Orange Fleshed Sweet Potato (OFSP) research trials, climate-smart sorghum research trials and farmers based sorghum seed production.



Partners and stakeholders visited farmer based sorghum seed production field at Babile woreda, supported by Haramaya University, photo credit: Kemal Kasim

In collaboration with Fair Planet, an Israeli non-profit organization a field day was organised on vegetable production technology in HrU- Dire Dawa Research Station (Tony Farm) on March 29, 2022. The purpose of the field day was to showcase vegetable production technology and dry land research experiments being implemented by Fair Planet and University researchers. Participants of the event were Engineer Aisha Mohammed, Minister of Irrigation and Lowland; Dr Berhanu Megersa Lenjiso, State Minister of Irrigation and Lowland; Ambassador of Israel to Ethiopia, Alelegn Admasu, Mayor of Dire Dawa, Mr Kedir Juhar, private, public and farmers' cooperatives, media organizations; and farmers in Haramaya, Harari and Dire Dawa.



Higher level officials and delegates visited vegetable research field at HrU- Dire Dawa Research Station (Tony Farm). Photo Credit: Tediros Lishan

An experience sharing visit was made to Jimma University (JU), Tropical and Infectious Diseases Research Centre (TIDRC) to facilitate learning and experience sharing between two institutions with a long history of collaboration. The event was part of the recent initiatives 'Sokoru agreement' signed between HrU and JU, which aimed to access resources and services through experience sharing, networking and partnership. The team led by Dr Tesfaye Lemma, Vice President for Research Affairs and senior management and researchers from the HrU at two campuses (main and Harar College of Health and Medical Sciences) shared experiences with the JU team led by Dr Netsanet Workneh, Vice President for Research and Community Services, and Prof. Delnesaw Yewhalaw, Director of TIDRC. As a result of this activity, the Joint PhD program was launched at HrU-Harar College of Health and Medical Sciences.



Representatives of Haramaya and Jimma Universities' higher officials , senior researchers and management made an experience sharing visit to Jimma University (JU), Tropical and Infectious Diseases Research Centre (TIDRC). Photo credit: Ibsa Aliyi

Organising an Exhibition

To enhance University visibility, an exhibition was organized at local, national, and international events.

At the local level, the recipe product exhibition of vitamin A-rich OFSP was conducted in collaboration with International Potato Center (CIP) and HrU through the Development and Delivery of Bio-fortified Crops (DDBIO) based at HrU. The event took place in the open market of two towns (Hirna and Babile) and two cities (Harar and Dire Dawa). The event aimed to increase awareness of urban consumers and create demand for surrounding OFSP producers such as farmers, Cooperative Unions and the private business sectors. Similarly, to profile research for development outcomes an exhibition was displayed during the Awash and Wabi Shebele Basin

workshop Forum which was organized by Haramaya University on August 12-13, 2021 at Afren Kalo Hall located on the University premises. Participants from Ethiopian Universities (Haramaya, Dire Dawa, Jigjiga, Kebri Dahar, Oda Bultum, Meda Welabu, Adama Science and Technology, Ambo, Wollo and Semera) visited the exhibition.



Orange Fleshed Sweet Potato (OFSP) food recipe exhibition held at Dire Dawa city. Photo credit: Kemal Kasim



Orange Fleshed Sweet Potato (OFSP) open market display at Dire Dawa city. Photo credit: Kemal Kasim

At the national level, the HEART Convention organized by the Ministry of Science and Higher Education (MOSHE) from July 12 -15, 2021 at Addis Ababa, Haramaya University presented an exhibition that demonstrated University's achievements in teaching, research, technology and industry transfer.



HrU exhibited product during HEART Convention organized by the Ministry of Science and Higher Education (MOSHE). Photo credit: Kidesena Sebesibe

At the international level, HrU participated in the 7th African Higher Education Week and RUFORUM Triennial Conference held from 06 -10 December 2021 at Palais des Congres de Cotonou, Benin, and the delegation took part in training, engaged in various parallel sessions, and deliberated on current pressing issues with other African fellow academics, scientists, researchers, and decision-makers. One of the major events of the conference was HrU's hosting of an open exhibition there. Overall, the exhibition served as a promotional platform to showcase HrU, including its major academic programs, research, and community service activities, to an international audience.



HrU presented exhibition during 7th African Higher Education Week and RUFORUM Triennial Conference at Benin. Photo credit: Kidesena Sebesibe



Haramaya University team led by Dr. Jemal Yousuf, President of HrU (left) during 7th African Higher Education Week and RUFORUM Triennial Conference Ministry of Science and Higher Education (MOSHE) at Benin. Photo credit: Kidesena Sebesibe

Supporting Research through Improving Research Infrastructure

To make Haramaya University, an intensive research University, an investment in research infrastructure such as the construction of either new or renovation of existing facilities (fences, residences, fulfilling irrigation, greenhouse, etc.) has been conducted. A field visit and discussion meeting had also been conducted at the University's three Research Stations in Babile Woreda (Babile, Berkele and Erer Guda) and Hiwot Fana Specialized University Hospital. The objective of this event was to explore the status of research activity and facilities and reflect on strengths and gaps and propose the way forward. The participants of the events are people from Haramaya University's top management, Directors, Collage Deans, Thematic leaders and senior researchers.

Highlights from Meetings and Workshops Events

To facilitate linkage to access basic seed and certification services, a one-day consultation workshop was conducted in August 2021. About 20 basic and certified seed producers in the East and West Hararghe zones participated. The participants were Afren Kelo Farmers' Cooperative Union, Mechara Agricultural Research Centre, Fedis Agricultural Research Centre, Haramaya University- Enterprise Directorate, Chercher Oda Bultum Farmers' Cooperative Union, Burka Galati Farmers' Cooperative and Chiro National Sorghum Research and Training Centre. The workshop enhanced the linkage between seed producers and service providers (HrU) to facilitate timely seed inspection and certification services.

A validation workshop was also conducted on Institutional Research Ethics Review Guidelines on March 1, 2022, at University's Senate Hall. The objective of the workshop was aimed to provide ethical standards that govern the conduct of scientific research and to get comments and feedback from academic and research staff representatives on how this draft institutional guideline can be further enriched and developed for approval. The participants are representatives of top Officials of the University including the President and Vice presidents, Directors and Deans, senior academic staff and researchers of Haramaya University. Comments and feedback were collected from the participants to enrich the draft guidelines.



Representatives of Haramaya University including president and vice presidents, Directors and Deans, senior academic staff and researchers during a validation workshop on Institutional Research Ethics Review Guidelines. Photo credit: Tediros Lishan



Participants group photo during a Validation Workshop on Institutional Research Ethics Review Guidelines. Photo credit: Tediros Lishan

To support irrigation-based wheat seed production by working with farmers' groups, woreda and Zone partners and stakeholders, the one-day consultative workshop was conducted on Irrigation Based Wheat Seed production at Harar Ras Hotel on 17 November 2021. The workshop aimed to discuss working modalities and share roles and responsibilities among partners. The Participants were representatives from HrU, East Hararghe Zone administration Office and BoA, as well as Gola Oda and Babile woredas BoA. As a result of the event, roles and responsibilities were identified and a memorandum of understanding (MoU) was signed among partners.



Participants group photo during consultative workshop on Irrigation Based Wheat Seed Production held at Harar, Ras Hotel . photo credit: Tediros Lishan

HrU Conducted Consultative Workshop to Save Kundudo Feral Horse Breed

Following the collaboration agreement signed between HrU and Oromia Environmental Protection Authority (OEPA), a joint stakeholder consultative workshop conducted on Kundudo Feral Horse Breed Research, Conservation, and Sustainable Utilization Strategy. The workshop was conducted on December 28, 2021, in Harar City. The objective of the workshop was to create awareness among key stakeholders and discuss sustainable conservation and utilization strategies. The participants of the workshop were representatives from HrU, Oromia, East Hararghe Zone, Jarso and Gursum woredas Environmental Protection Authorities, East Hararghe Zone Administration Office, Ethiopian Biodiversity Institute of Harar Biodiversity Centre, religious leaders, and Aba Gada. Overall, the workshop was an event to learn about the existing situation of the Kundudo Feral Horse Breed, one of Ethiopia's most endangered species, recent works that have been started to preserve this endangered species, and future stakeholder's cooperation toward research and conservation actions.



Consultative workshop on Kundudo Feral Horse Breed Research, Conservation, and Sustainable Utilization Strategy, Organized by HrU and OEPA held at Harar, Ras Hotel. Photo credit: Kemal Kasim

HrU Conducted Consultative Stakeholders Workshop to Save Elephants

HrU office of the Research Affairs in collaboration with the Ethiopian Wildlife Authority (EWA) conducted a multi-stakeholder consultative workshop on Babile Elephant Sanctuary (BES) at Harar on March 26, 2022. Various stakeholders representatives from Haramaya and Jigjiga Universities, Oromia and Somali regional states, the Federal Wildlife Conservation Authority, the Prime Minister's Office, East Hararghe zone defence and security, Federal police, and community representatives surrounding sanctuary including kebele officials, religious leaders, Aba Gada and youth group have participated in the workshop. As a result of the workshop, short term and long-term action plans were developed and an agreement was reached among key stakeholders to work together as a priority for the conservation of elephants.



Participants group photo on consultative workshop on Babile Elephant Sanctuary (BES) at Harar. Photo credit: Tediros Lishan



Media briefing during consultative workshop on Babile Elephant Sanctuary (BES) at Harar. Photo credit: Tediros Lishan

Haramaya University Signs Memorandum of Understanding to Save Ethiopia's Unique Genetic Resources

Key partnerships and collaboration have been also created in the last nine months. On August 27, 2021, a Memorandum of Understanding (MoU) was signed with the Ethiopian Biodiversity Institute (EBI) and Oromia Environmental Protection Authority (OEPA) on the establishment of Kundudo feral horse breeds in-situ-conservation site and implementation of conservation activities. The MOU was aimed at conserving and protecting Kundudo feral horse breed and its biodiversity, thereby creating sustainable conservation and utilization strategies of the genetic resources. Kundudo feral horse is one of Ethiopia's oldest, unique and most endangered feral horse breeds. It is located in the Kundudo plateau of Jarso and Gursam woredas of East Hararghe Zone.



Signing of Memorandum of Understanding (MoU) between HrU and OEPA. Photo credit: Tediros Lishan

New Business Incubation Hub Launched

Haramaya University launched the Agricultural and Rural Innovation Incubation Hub (ARIHUB) and held its official Pre-Incubation launch workshop from April 13-14, 2022. The event was considered a unique milestone towards rethinking student training and community service activities in higher learning institutions through the establishment of innovation hubs. It was nearly a year and a half ago since Haramaya University launched the ARIHUB and offered three-day training to its first intake of general agribusiness and business incubation trainees.

ARIHUB is an entrepreneurship promotion centre guiding talented agricultural students' and local youth groups' entrepreneurial competencies and innovativeness through strengthening and supporting the development of innovative agricultural enterprises.

The workshop was attended by Dr Jemal Yousuf, President of Haramaya University. In his speech, Dr Jemal advised all grantees to take the opportunity very seriously and dedicate themselves to producing marketable prototypes. The president underscored the university's undeterred commitment to supporting well-performing enterprises in various ways, including by linking them with financial institutions.

The event included the incubation Challenge Grant Award for nine students and local youth groups and awards them with a grant certificate that will entitle them to a student experimental loan and admission to the ARIHUB training facility to enable them to develop marketable prototypes and design a go-to-market strategy. All enterprises were selected through a competitive and transparent procedure by an independent multi-disciplinary steering committee- the Agribusiness Incubation Steering Committee (AISC).

During his introduction to the ARIHUB project, Dr Getachew Shambel, Project Principal Investigator (PI) and Incubation lead highlighted that ARIHUB is a two-year project supported under the RUFORUM and MASTERCARD foundations as part of the RUFORUM Agricultural Enterprises Challenge Program (RECAP). According to Dr Getachew, the ARIHUB aims to support selected students and local youth groups to design, develop, and implement their innovative agri-business ideas through successive training, interactive coaching, mentoring, and monitoring activities provided at the innovation incubation hub. He also emphasized that the ARIHUB is a departure from the conventional entrepreneurship training model by integrating entrepreneurship training with innovation incubation and Multi-Stakeholder Innovation Platforms (MSIPs).

The process is envisaged to capacitate young entrepreneurs through continuous and systematic mentorship activities through a 12-week training cycle that will lead to developing relevant and marketable prototypes and products.

As a university-based incubation facility, in the long run, ARIHUB envisions promoting innovativeness through identifying and helping agri-focused university entrepreneurs develop and commercialize their ven-

tures; facilitating the development of collaborative innovation communities bringing together entrepreneurs, government, private sector, academia and investors to enable decent job creation in the agricultural sector; and creating research and learning opportunities to develop best practices for entrepreneurial development.

The enterprises selected this year are Rabbit Farming and Marketing; Ethio-Yammi Pasta production; Casmiroa juice production and Marketing; Sweet Potato Jam Production and Marketing; Poultry farm production and marketing; Honey bee production and marketing; Weme chicken; Rearing poultry (Bate youth business partnership); and Homemade Incubator Development and Day-old chick production.

Dr Tesfaye Lemma, Vice president for Research Affairs, in his closing speech, remarked on the importance of incubation-based training for sustainable development and promoting employment for the highly growing youth group in the country.

The ARIHUB project is coordinated by Dr Getachew Shambel (project PI and incubation lead) and co-PIs - (Drs. Jemal Yousuf, Chanyalew Seyoum, Muluken Gezahegn, Eric Ndemo, and Mr Samuel Taye) all from the School of Rural Development and Agricultural Innovations (RDAI) with support from RUFORUM, MASTERCARD foundation, and Haramaya University. And it is jointly implemented by the University, Small and Medium Enterprises (SMEs), community-Based Organizations (CBOs), and private sector partners.

Finally, the winners received their awards from Professor Mitiku Guya, University-Industry Linkage Directorate Director.



ARIHUB project team led by Dr Jemal Yousuf, President of HrU held Incubation Challenge Grant Award and Pre-Incubation Launching Workshop at Haramaya University. Photo credit: Samuel Taye



Participants group photo during Pre-Incubation Challenge Grant Award Workshop. Photo credit: Samuel Taye

New Cancer Treatment Centre Inaugurated

Haramaya University in collaboration with the Ministry of Health of Ethiopia inaugurated a new Cancer treatment centre on February 25, 2022. The inauguration ceremony was attended by, the Minister of Health of Ethiopia, Dr Lia Tadesse, Harari Regional State Deputy President Misra Abdella, the Vice President for Academic Affairs of Haramaya University, and Professor Mengistu Urge and higher officials from the federal government and Harari Regional State and Haramaya University.

Built at 270 million birr, the centre is located in Harar city Hiwot Fana Specialized University Hospital i.e. a teaching hospital for Haramaya University's College of Health and Medical Sciences.

The University invested 70 million birr to build the facility while the Ministry of Health equipped the centre with medical supplies including a state of the art 3D Radiotherapy LINAC machine, at 4 million USD.

According to Dr Lia Tadesse the centre facility will provide access to life-saving cancer treatment to communities in the eastern part of the country.

The inauguration of a new centre in Harar city is a part Ministry of health's strategic plan to open six oncology centres across the country which aim to decentralise treatment services to the communities.



Partial view of new cancer treatment centre inauguration ceremony at Hiwot Fana Specialized Hospital in the presence of the Minister of Health , Dr Lia Tadesse and higher regional, federal and University officials. Photo credit: Fuad Ahmed



HrU senior management and researchers visited new cancer treatment centre located at Hiwot Fana Specialized Hospital. Photo credit: Fuad Ahmed

Orange-Fleshed Sweet Potato Creating Positive Change in Ethiopia

By Kemal Kasim¹, Mohammed Abinasa² and Setegn Gebeyehu²

¹Haramaya University, Dire Dawa, Ethiopia ²International Potato Centre (CIP), Addis Ababa, Ethiopia

Umer Yusuf is an energetic farmer living in Bishan Babile district in Ethiopia. Like many farmers in his area, Yusuf is challenged by producing enough healthy food on his farm to keep his wife and nine children food secure and properly nourished. In the field, pests, weeds (e.g., striga) and drought are the biggest challenges.

But help for Yusuf and others arrived in 2020 in the form of the Development and Delivery of Bio-fortified Crops at Scale (DDBIO) project, funded by the Foreign, Commonwealth, and Development Office (FCDO) of the United Kingdom and with technical support from the International Potato Centre (CIP) and Haramaya University (HrU).

Working through agricultural extension agents, CIP, DDBIO and HrU provided 10,000 cuttings to be used to grow biofortified Orange-Fleshed Sweet Potato (OFSP). This nutritious crop is easy to grow, matures quickly, and provides robust levels of vitamin A to ward off diseases. The surplus OFSP can be sold at markets for extra income.

Yusuf planted OFSP cuttings on his farm on one-fifth of a hectare, guided by training and support he had received from extension agents for site selection, land preparation, planting methods, fertilizer application, earthing up and integrated pest management. The plants began bearing roots within 3.5 months after planting and a single cutting yields 10-12 roots.

"Root yields from a single vine cutting of OFSP can feed my family a meal per day," said Yusuf.

Recently, Yusuf harvested six tons of OFSP, enough to feed his family for five months. He sold off the surplus earning USD 400. His family has been preparing several tasty recipes for OFSP – boiled, fried and mashed.

more than 6,600 smallholder farmers in nine districts in Eastern Ethiopia. More than 40% of the recipients were women. In total, these cuttings were enough to plant 54 hectares of OFSP with estimated root yields of 1,620 metric tonnes.

But CIP understands that provision of good quality seed is not enough. The farmers need training to ensure higher yields as well as better nutrition. Working with local agriculture extension and health offices, DDBIO provided courses on agronomy, seed systems, integrated pest management, harvesting and post-harvest handling, processing and utilizations, and nutrition and health. Edao Ambomsa is agronomist and DDBIO focal person says, nearly 80% of the families included in the project reported multiple benefits from OFSP.

The great taste of OFSP makes it popular with families. "My children prefer this food because it is so sweet. I feel better because I see them getting more nutrition," says Yusuf. "In my language we say '*Miidhagni Afaaniin nama seena*,' which means, 'Your beauty comes through your mouth.' Watching my children eat OFSP makes them look healthier."

The extra income is helping Yusuf address other household needs, including clothes for his children and school materials. He also used his OFSP profit to purchase a bull to help him with ploughing his farmland. He plans to nourish the bull to a better weight and then sell the animal for more income. The start of a positive spiral rooted in OFSP!



Umer Yusuf used profits from OFSP and purchased livestock. Photo credit: Kemal Kasim

Supporting Women is Supporting Family

Name of farmer: Hawa Mohammed Matan

Sex: Female

Age: 26

Family size: 2 female

Kebele: Garesley

District: Erer

Hawa Mohammed Matan is a 26-year-old married mother of two daughters, who live in Garesley kebele of Erer district, Ethiopia. The Participatory Action Research (PAR) project of Haramaya University implemented with the support of the Norwegian Development Fund was screened Hawa in 2020. In the past, Hawa sometimes raised and sold goats to support her children.



Umer Yusuf holds some OFSP roots grown on his farm with assistance from the International Potato Center and HrU through the DDBIO project. Photo credit: Kemal Kasim

Yusuf is just one of thousands of poor smallholder farmers who have benefited from DDBIO. During 2020, CIP distributed 2.7 million OFSP vine cuttings to

About 24 women who are agro-pastoralists benefited from chicken production and related technologies. Hawa is among the recipients of 12 improved dual-purpose chicken breeds, one improved chicken housing and starter chicken feeds. Haramaya University provided training in areas of poultry management, housing, and hygiene, feed preparation, nutrition, and vaccination.

"Five months later the chicken started laying eggs", she says. She sold a lot of eggs in one month and earned 800 birr. With this income she bought a goat i.e. ram. "She raised the ram for two months and sold it for 1,800 birr", Hawa added. A month later, she sold several eggs and earned 600 birr to buy a dress for her daughters for Eid celebration. Proudly, Hawa was able to earn an average income of 80 to 150 birr per week.

Thanks to the PAR project and HrU, Hawa is benefiting greatly from chicken farming by developing new methods such as chicken feed recipes from local crops such as sorghum, maize, and common bean and making profits.

In addition to income, chicken production provides a valuable source of protein. Hawa was able to feed her children two eggs a day.

Hawa's success has inspired those around her, encouraging neighbouring farmers to learn the merit of chicken farming. Consequently, she began transforming her family.



From left to right Dr. Meseret Girma (Assitant professor from HrU), Hawa (beneficiary from Geresly kebele) and Ahmed Roble (development agent from Geresly kebele). Photo credit: Kemal Kasim



Participants from HrU, PAR project and Erer woreda BoA visiting Hawa's experience. Photo credit: Kemal Kasim

A Glimpse of Nine Months: In Pictures



Stakeholders visited farmer based sorghum seed production field at Babile woreda during field day organized by HrU. Photo credit: Kemal Kasim



Farmer's based wheat seed production field cluster using irrigation at Gola Oda woreda supported by HrU. Photo credit: Kemal Kasim



HrU senior management and researchers conducted field level discussion at Erer camel research station. Photo credit: Fuad Ahmed



HrU top management and researchers conducted field visit to Babile Elephant Sanctuary (BES). Photo credit: Kemal Kasim



HrU conducted potato seed distribution to local farmers. Photo credit: Fuad Ahmed



Supporting irrigation based wheat seed initiative through distribution of quality seeds to farmers located in 17 woredas of East Hararge Zone. Photo credit: Fuad Ahmed

Meet Nine Teams of Incubatees Being Nurtured at Agricultural and Rural Innovation Incubation Hub (ARIHUB) based at Haramaya University: In Pictures



ETHIO-YAMMI Pasta Production and Marketing.
Photo credit: Fuad Ahmed and Samuel Taye



WEME Chicken. Photo credit: Fuad Ahmed and Samuel Taye



CASIMIROA Fruit Juice Production and Marketing.
Photo credit: Fuad Ahmed and Samuel Taye



Rearing Poultry. Photo credit: Fuad Ahmed and Samuel Taye



Sweet Potato Jam Production and Marketing.
Photo credit: Fuad Ahmed and Samuel Taye



Home-Made Incubator Development and Day-old Chick Production.
Photo credit: Fuad Ahmed and Samuel Taye



Honey bee production and Marketing. Photo credit: Fuad Ahmed and Samuel Taye



Rabbit Farming and Marketing. Photo credit: Fuad Ahmed and Samuel Taye



Poultry production and Marketing (Layers).
Photo credit: Fuad Ahmed and Samuel Taye



Wheat seed production field cluster organised by Mada Lugo Seed Producer Cooperative at Chinaksen woreda, Supported By the International Committee of the Red Cross (ICRC) and Haramaya University. Photo credit: Kemal Kasim



Higher level discussion meeting held between HrU management and delegation from the Ministry of Irrigation and Lowlands of Ethiopia including Engineer Aisha Mohammed, Dr Birhanu Megersa Lenjiso and government representatives. Photo credit: Tediros Lishan.

For more information about newsletter please contact:

Kemal Kasim

Research Communication Team Leader
Email|kemalkasim053@gmail.com|Phone|+251913179853

Dr. Chanyalew Seyoum (PhD)

Director for Research, Extension and Publication
Email|acseyoum@gmail.com|Phone|+251911818712

For more information about HrU, the Office of the Research Affairs please contact:

Dr. Tesfaye Lemma (PhD)

Vice-President for Research Affairs
Email|t.lemma41@yahoo.com|Phone|+251932178954

Address:

Haramaya University, Office of the Research Affairs

Tel: +251 255 530 324 (Office)

Fax: +251 255 530 106

P.O.Box: 138, Dire Dawa, Ethiopia

Telegram: <https://t.me/HrUResearchAffairs>

Facebook: <https://www.facebook.com/HrUResearchAffairs/>

LinkedIn: <https://www.linkedin.com/company/hruresearchaffairs>

Twitter: <https://twitter.com/ResearchAffairs>

Website: <http://www.haramaya.edu.et/>