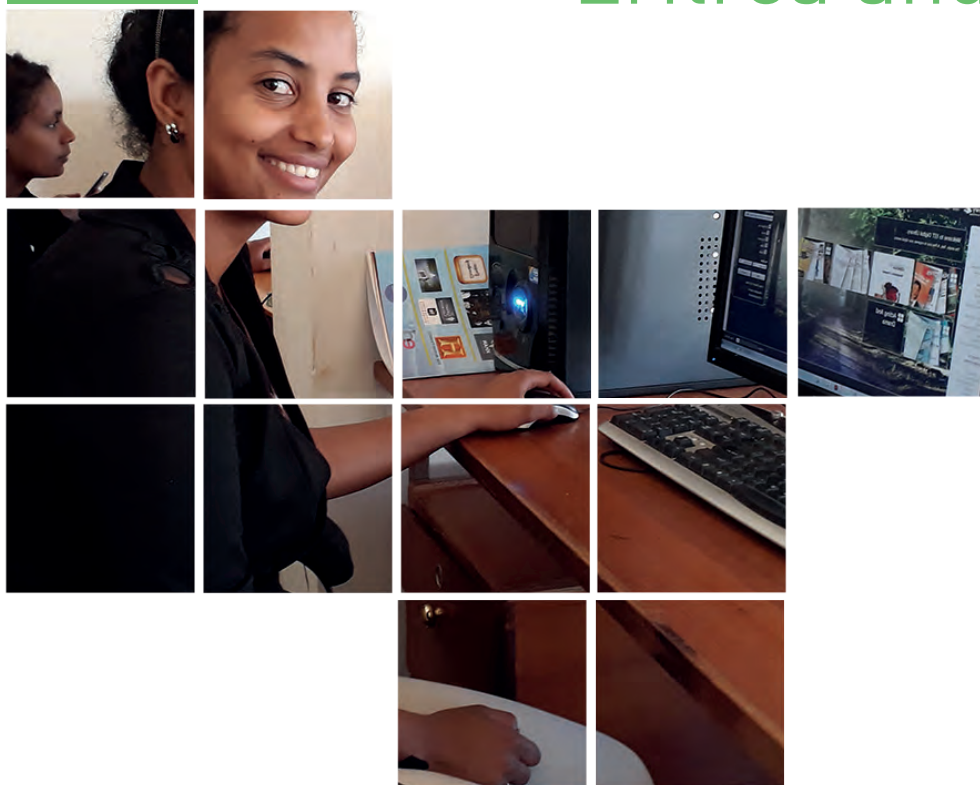
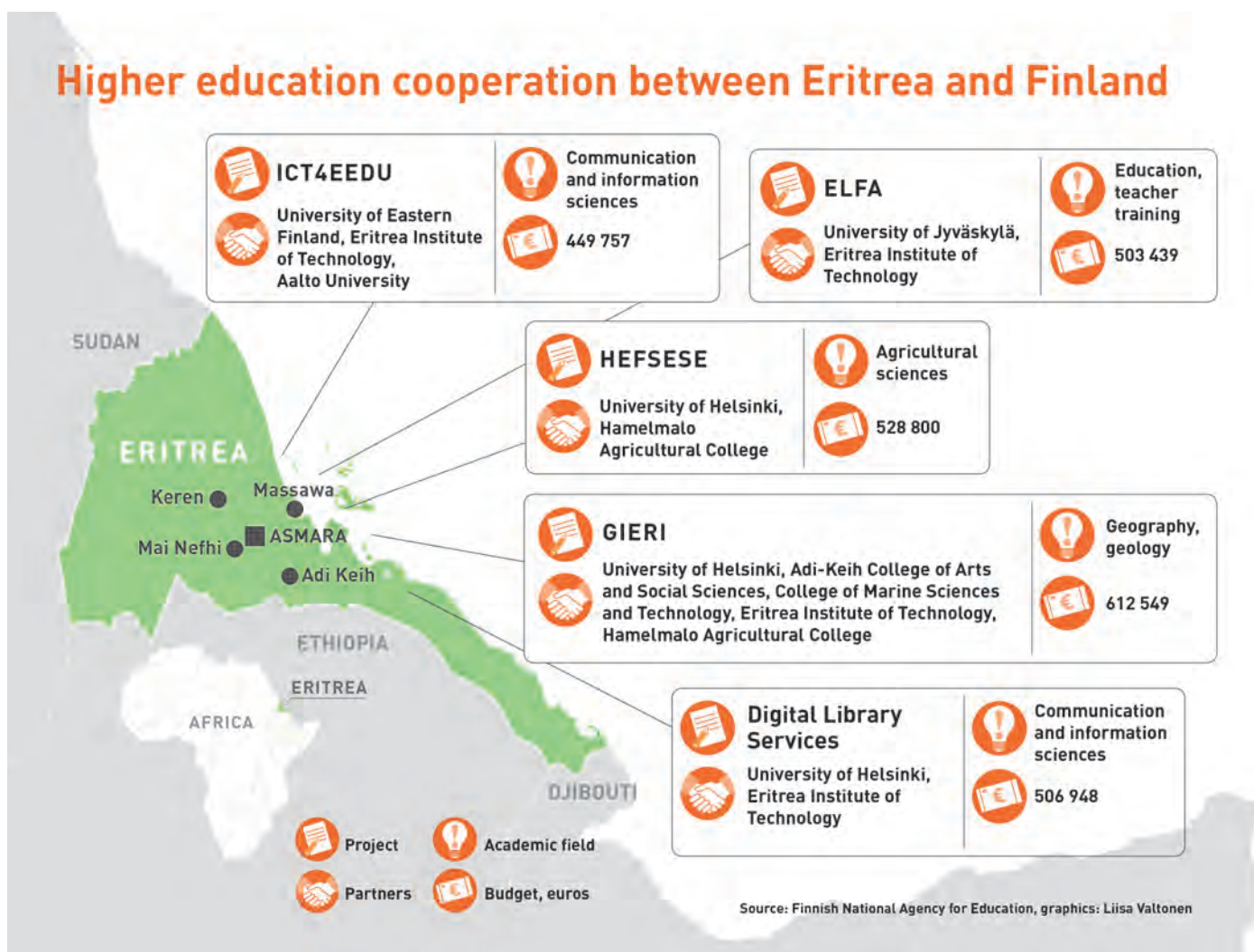


# Higher education cooperation

between  
Eritrea and Finland



## Higher education cooperation between Eritrea and Finland



The Eritrea HEI ICI was born out of personal connections of a select few, but turned into blossoming institutional cooperation between several institutions, tens of academics and hundreds of students.

In 2014, through an open call, the first expedition of Finnish academics set out to learn more about the country, its colleges and future colleagues. The collaboration has since budded into new master's programmes, digitalized libraries, functioning intranets, and dozens of trained professionals.

The objective of the Eritrea HEI ICI Programme is to support the development of sustainable institutional capacity in Eritrean higher education institutions.

Based on a needs analysis for the Eritrean Higher Education Sector, Human Resources Development and Institutional Capacity Development were identified as the priority areas to be addressed by Finland's higher education support. For Eritrea, the development of human

resources is a number one priority, and a cornerstone of its development strategy.

Higher education plays a critical role in creating a vibrant knowledge economy capable of meeting Eritrea's sustainable development needs. The purpose of the programme has been to strengthen Eritrean higher education institutions (HEIs) through enhancing administrative, field-specific, methodological and pedagogical capacity.

Primarily, the cooperation has focused on four selected result areas:

- **Improved** quality and relevance of higher education;
- **Enhanced** management, leadership and governance capacities in higher education institutions;
- **Improved** information management in teaching and learning;
- **Strengthened** the role and relevance of the HEIs in development and society.

Eritrea has identified a need in competent teaching professionals in its higher education institutions. Many of the projects have sought to provide solutions to this very situation through curriculum development, student and staff mobility and training, research collaboration, and vast improvements in facilities.

The aim has been to establish institutional linkages and to create cooperation that would benefit the young people of Eritrea. The students of the partner HEIs as well as the surrounding society will gain from a more qualified and well trained labour force.

Within the five projects there have been significant, large scale, concrete results achieved. The projects and their main achievements are represented in the following.

# Projects

## Digital library and library automation services

Eritrea Institute of Technology (EIT) & University of Helsinki

The Digital Library Services project has pioneered the digitalization of the Eritrea Institute for Technology library. It has improved library services and access to information by upgrading equipment and the library's collection, and providing training on ICT to staff at the EIT.

The project has made a significant impact both in developing human capacity and equipping the EIT Library with the necessary facilities. The impact of upgrading equipment and the millions of electronic learning materials will be seen in improved learning achievements and research outputs in the coming years.

The project has enhanced the content and service of the digital library and automated the services for the use of the printed book collection.

Continuous training to staff members was conducted by experts from the Helsinki University Library.

Through the project, the partner organisations have access to over 35 million e-resources, e-books, videos, and audios that the academic community can use for research, teaching and learning. The library has been equipped with computers, where students who lack electronic devices are able access the digital material. Over 60.000 printed books have been catalogued electronically and processed to be electronically detectable using the RFID technology.

## Eritrea HEI ICI Programme

Eritrea HEI ICI (Higher Education Institution Institutional Cooperation Instrument) Programme is funded by the development cooperation funds of the Ministry for Foreign Affairs of Finland. The Finnish National Agency for Education EDUFI is responsible for the programme management, in close collaboration with the National Commission for Higher Education NCHE of Eritrea.

The programme promotes the objectives of the Finnish Development Policy Programme: reducing extreme poverty and supporting sustainable development. Activities funded are in line with the human rights based approach and the objectives of the Finnish Development Policy: promotion of gender equity, reducing inequality and strengthening climate sustainability.

**Total budget:** 2 601 493 €

**Projects funded:** 5

**Project implementation:** 2015–2018



*“Digital library is not a luxury but a necessity to cope with shortage of resources and teachers.”*

Rediet Kifle Taddese, EIT Finnish–Eritrean project coordinator





## Learning for all

Eritrea Institute of Technology (EIT) & University of Jyväskylä

The Eritrea Learning for All through Higher Education Institutional Cooperation ELFA project has increased institutional capacity for educational leadership and management. Through cooperating with the College of Education, at the Eritrea Institute for Technology, the project has developed appropriate pedagogy skills, improved the quality of curriculum, improved teaching and learning processes, and enhanced the use of ICT in education.

The project has ultimately strengthened the capacity of the College of Education to serve as a leading Eritrean institution for training education professionals, and sought to improve learning outcomes at all levels through multidisciplinary collaboration of key stakeholders.

Quality and relevance of College of Education programmes has improved through professional development modules in areas of literacy and numeracy, learning difficulties, teacher education pedagogy, educational leadership, research methodology and ICT in education. Simultaneously the project has enhanced research-oriented approaches to developing learning centered education in Eritrea.

The project has strengthened international linkages of EIT and College of Education to support sustained partnerships and development of postgraduate programmes in education. Outcomes include joint contextually relevant research and publication of an edited volume of eight research articles.



## Strengthening geoinformatics teaching and research

Adi-Keih College of Arts and Social Sciences (CASS) & University of Helsinki

The Strengthening Geoinformatics Teaching and Research Capacity in Eritrea Higher Education Institutions GIERI project has developed geoinformatics training and research capacity among the staff members of Eritrean higher education institutions by using a Training of Trainers approach, developing joint research programmes, and through teacher exchanges.

Teaching and research on geoinformatics has been significantly strengthened with new curriculum, two geographic information system (GIS) laboratories, teaching materials and three trained staff members. The staff is expected to teach the next generations of geoinformatics experts to come, who will take key positions in different ministries and institutions. Overall awareness of geoinformatics has improved in Eritrea.

Geoinformatics teaching and research capacity in four Eritrean higher education institutions has improved significantly by the training of MSc students, who are also key teaching staff in their colleges. Course materials have been developed for eight Master level courses, some are already applied in Bachelor level teaching. Fully equipped GIS laboratories for MSc and BSc level students in Geoinformatics and Geography have been installed at CASS.

Twelve Masters theses in Geoinformatics are under preparation, with graduation expected in July 2018. The findings of the MSc theses, as well as the new knowledge, techniques and methodologies adapted by the students, can be used by the Government of Eritrea to make better informed decisions for the society, economy and environment.

*“The geoinformatics Master’s programme is a first of its kind in Eritrea and completely unique. I didn’t hesitate when given the chance to take part – I feel lucky.”*

Abiel Yohannes, Geoinformatics Master programme, CASS

*Higher education and research can make significant contributions to the development of society, build competencies consistent with national development goals, and contribute to the goals of inclusive sustainable development and reduction of poverty.*

## Master’s programme in geoinformatics

The first Master’s programme in geoinformatics in Eritrea has been launched with the efforts of the GIERI project. With students from four different higher education institutions, the programme is creating a national network of professionals and contributing to producing basic information useful for many levels of the Eritrean society. Every other year, 10–15 experts of geoinformatics will graduate from this programme.

There is a lot of demand for the know-how in geoinformatics in Eritrea. The knowledge attained can support the mapping and sustainable management of the natural resources, nature conservation and developing food security.

The new Master’s programme generates also new opportunities for employment and brings hope for the youth.

## Food security and environmental sustainability

### Hamelmallo Agricultural College (HAC) & University of Helsinki

The Higher Education for Food Security and Environmental Sustainability in Eritrea HEFSESE project has supported the development of sustainable institutional capacity in the Hamelmallo Agricultural College through enhancing teachers methodological and pedagogical competencies, strengthening curriculum

and training staff.

The aim has been to increase employment opportunities of graduates and expand production potential through the adoption of agroforestry systems in teaching, research and practice. The impact will be increased agricultural productivity and production, and hence improved food security.

Eritrean teaching assistants participated in pedagogical training, lectures and lab work at the University of Helsinki, improving their knowledge, understanding and skills in their respective areas of specialization.

Three sustainable landscape management modeling systems or modules were

introduced. Models can inform students and teachers understanding of interactions within a system.

A HAC agroforestry nursery has been laid out into different compartments for production of seedlings of various plants, like forest trees, horticultural fruit trees, flowers, and vegetables.

Seedlings production has been established to meet the increasing demand on forest tree species and horticultural fruit trees as well as in-door and street flowers. This helps students learning and practice, and for graduate entrepreneurs provides small-scale business opportunities.

#### Examples of projects' purchases

- Computer hardware: laptops, projectors, screens, printers, low-cost low power computing systems, wireless network equipment, first public 3D-printer in Eritrea
- Textbooks and eBooks
- Power back-up units and solar panels
- Plant nursery establishment materials and tools, and forest inventory equipment.

#### Activities included also

- Over 100 expert visits between Eritrea and Finland
- 34 face-to-face trainings with almost 400 participants in Eritrea.

## Finland

**Capital:** Helsinki

**Population:** 5,5 million

All levels of education from primary to higher education are provided for free.

14 universities and 24 universities of applied sciences located around the country.

Higher education institutions operate within the Ministry of Education and Culture's administrative branch.

## Eritrea

**Capital:** Asmara

**Population:** 5,6 million

All levels of education from primary to higher education are provided for free.

In 2004 the University of Asmara was dissolved into 7 colleges, located around the country.

Higher education system lead by the National Commission for Higher Education NCHE.



## Strengthening ICT in education

Eritrea Institute of Technology (EIT) & University of Eastern Finland & Aalto University

The Strengthening ICT in Education in Eritrea ICT4EEDU project has strengthened the human and infrastructure capacity of Eritrean Institute of Technology (EIT) by creating and distributing electronic learning resources and services. It has enhanced the capacity of the EIT ICT Center to deliver educational e-resources, and to improve the ICT infrastructure. The

use of digital educational resources has increased, and more lecturers are prepared to incorporate those resources in their teaching.

In a country with very low internet connectivity, EIT teachers and students can now access intranet educational resources 24/7 from a larger number of hotspots in the campus. The established EdTechLab has created a platform for EIT colleges to jointly develop learning contents and support technologies for the teaching-learning process.

The EdTechLab has hosted the development of students' projects that put technology (3D printing, video, mobile, software, robotics) in the service of local

education needs. It has created awareness of educational technologies across EIT and Eritrea, with internship programs, seminars and other activities.

New hardware, servers and antennas, have been installed and digital learning services and materials have been made available. The ICT Center staff has been trained to support the new equipment and to listen to the users when deploying new services. The ICT center can better plan the deployment of reliable, accessible and updated services to the EIT community, and is now confident to support other Eritrean HEIs in their ICT development.

### EdTechLab

The EdTechLab provides a platform where the teaching and learning community can incubate creative initiatives related to educational technologies. Students have freely explored the combination of education and technology through participatory techniques and student-centered approaches. Their projects at the lab have positively impacted EIT's learning environment and makes them more likely to apply the new practices when joining working life, also paving the way for new teaching and learning practices in Eritrea.

One of the most remarkable projects is the "low-cost low-power computing system". Students have used the lab's Raspberry Pi and 3-D printer to produce and assemble a learning device adapted to Eritrea and translated the software to a local language Tigrinya, so that the device can be used in primary and secondary schools.



## Learning from each other

The Eritrea HEI ICI cooperation has been supported and coordinated in close collaboration with:

EDUFI and National Commission for Higher Education (NCHE) in Eritrea, the Ministries for Foreign Affairs of both countries, as well as the Ministries for Education. There has been regular coordination meetings and visits both to Eritrea and Finland.

The collaboration has proven to be fruitful. The projects have not only improved facilities and teacher capacities, they have also brought together internati-

onal peers to learn and seamlessly work together for the common good. All around, there has been exposure to diverse experiences and new ways of doing and seeing things.

Through the cooperation, the foundation for future cooperation has been laid. The achievements will help continuous development work – and hopefully pave the way for more and deeper international collaboration to support Eritrean higher education to develop further.

[www.oph.fi](http://www.oph.fi) | [www.cimo.fi/programmes/eritrea](http://www.cimo.fi/programmes/eritrea)

*"The project has had great impact on the students – for me participating in the robotics group has been amazing and interesting."*

Mikal Kidane, Computer Science, EIT

*The Finnish National Agency for Education is an agency operating in the administrative branch of the Ministry of Education and Culture. It is responsible for the development of education, early childhood education and care, and lifelong learning as well as for the promotion of internationalisation.*

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