HIGHER EDUCATION AS CATALYST FOR DEVELOPMENT: TEACHER EDUCATION, INNOVATIONS AND CLIMATE

Synthesis of the results of the Higher Education Institutions Institutional Cooperation Instrument (HEI ICI) projects 2020–2024

FINNISH NATIONAL AGENCY FOR EDUCATION

Ministry for Foreign Affairs of Finland

Reports and surveys 2025:3

Reports and surveys 2025:3

ISBN 978-952-13-6979-7 (pdf)
ISSN-L 1798-8918
ISSN 1798-8926 (pdf)

Layout: PunaMusta Oy / Sisältö- ja suunnittelupalvelut

www.edu.fi

CONTENTS

INTRODUCTION 4

MAIN RESULTS 7

RESULTS LINKED TO REFORM POLICIES IN PARTNER COUNTRIES 9

CONSISTENCY WITH SDGS 10

COOPERATION WITH THE PRIVATE SECTOR AND NON-ACADEMIC ACTORS 10

HEI ICI AS A CATALYST FOR ACCESS TO THIRD-PARTY FUNDING 12

RESULTS ACCORDING TO HEI ICI PROGRAMME THEMATIC AREAS 13

Higher education for solving the learning crisis (OLIVE, TEPATE, Nepal, TOTEMK, MOPEDE) 13

Higher education for innovation and climate (GeoICT4e, PBL-BioAfrica, CLIDEV, SUSIE) 14

PROJECT MANAGEMENT AND QUALITY ASSURANCE 16

SUSTAINABILITY OF THE RESULTS 18

Annex 1. List of projects 18

Annex 2. Country-specific list of new or revised study programmes and courses 19

Annex 3. List of books, articles and publications by HEI ICI projects 24

INTRODUCTION

Why invest in higher education?

All countries need a strong base of creative and knowledgeable talent to support societal development. Higher education is a **critical driver of development** as it provides the knowledge, skills and innovation required to address the complex challenges of today and the future.

Higher education provides individuals with both **basic and advanced skills** for sectors like forestry, agriculture and food security, and the **re- and up-skilling** necessary for emerging industries like healthcare, technology, engineering and finance during the green and digital transitions. Countries with solid higher education systems attract investment.

Well-functioning universities enable governments and other societal actors to make **research-based decisions** while fostering informed citizens and active civic participation. With a highly educated population, countries become resilient and are better equipped to respond to various crisis situations. Education also helps to fight **disinformation** and radicalisation.

Higher education provides knowledge for innovation and entrepreneurship, creating new employment and thereby offering **opportunities to break the poverty cycle.** Expanding access to higher education helps bridge socio-economic divides, as well-educated individuals are more likely to support democratic principles and social harmony.

The role of EDUFI and Finnish higher education in global partnerships

Finland is a relevant societal model as all three of the roles of higher education – research, education and outreach – have been well developed over decades. There are a good number of HEIs across the country and students can access higher education regardless of their socio-economic background. The multi-stakeholder clusters of industry, research institutes, public authorities, SMEs, NGOs, communities, etc. around HEIs in Finland offer interesting models for innovation and lifelong learning, with direct connections to the working world.

Its long-term higher education cooperation with non-European regions, dating back several decades, has contributed to Finland's global reputation in the education sector. Finnish higher education actors created a strong foundation to build on as trusted and reliable partners, e.g., the recent Finnish success story involving joining the EU-funded Global Gateway Team Europe Initiatives on Teacher Education and Opportunity-driven TVET in Sub-Saharan Africa.

The Finnish National Agency for Education, EDUFI, is a strong promoter when it comes to strengthening Finland's role in global education development and partnerships (Educational cooperation with partners from the Global South | Finnish National Agency for Education). EDUFI manages a variety of global partnership programmes funded by the EU, the Ministry for Education and Culture or the Ministry for Foreign Affairs, and coordinates the Finnish education export cluster (Home | Education Finland).

Finally, EDUFI fosters close cooperation with national-level sister organisations in Europe working on similar bilateral global higher education partnerships in order to strengthen the quality and complementarity of actions, share best practices, and promote thematic dialogues as well as joint advocacy at EU level.

The HEI ICI programme 2020-2024, funded by the Finnish Ministry for Foreign Affairs

The Finnish government is supporting **partnerships between higher education institutions (HEIs) in Finland and emerging economies** through the development cooperation programme HEI ICI (Higher Education Institutions Institutional Cooperation Instrument). The HEI ICI is financed by the Finnish Ministry for Foreign Affairs (MFA) development cooperation fund and managed by the Finnish National Agency for Education (EDUFI).

Projects similar to the HEI ICI programme have existed since 2009 and it is a well-established scheme, having created university partnerships in more than 20 countries, mainly in Africa. These partnerships have generated study programmes and courses with a specific focus on the societal relevance of education. The projects have been successful due to their anchoring in local needs and ownership. The partnership approach, pedagogical skills and scientific expertise of the Finnish universities have been much appreciated.

The HEI ICI aims to strengthen the capacities of HEIs in partner countries in order to contribute to **well-functioning, relevant and accessible higher education** for students. In the short term, the programme aims to improve **institutional management and teaching capacity** in HEIs in partner countries. The HEI ICI also contributes to **cross-border knowledge creation** and increased understanding of global development and sustainability issues among all participating HEIs.

Finland's development policy objectives, such as the 2030 Agenda for Sustainable Development and the Government Report on Development Policy, guide HEI ICI activities. The HEI ICI partnerships support the priorities of the recently published Finnish Government Report on International Economic Relations and Development Cooperation (June, 2024): **women and girls, education and climate action**.

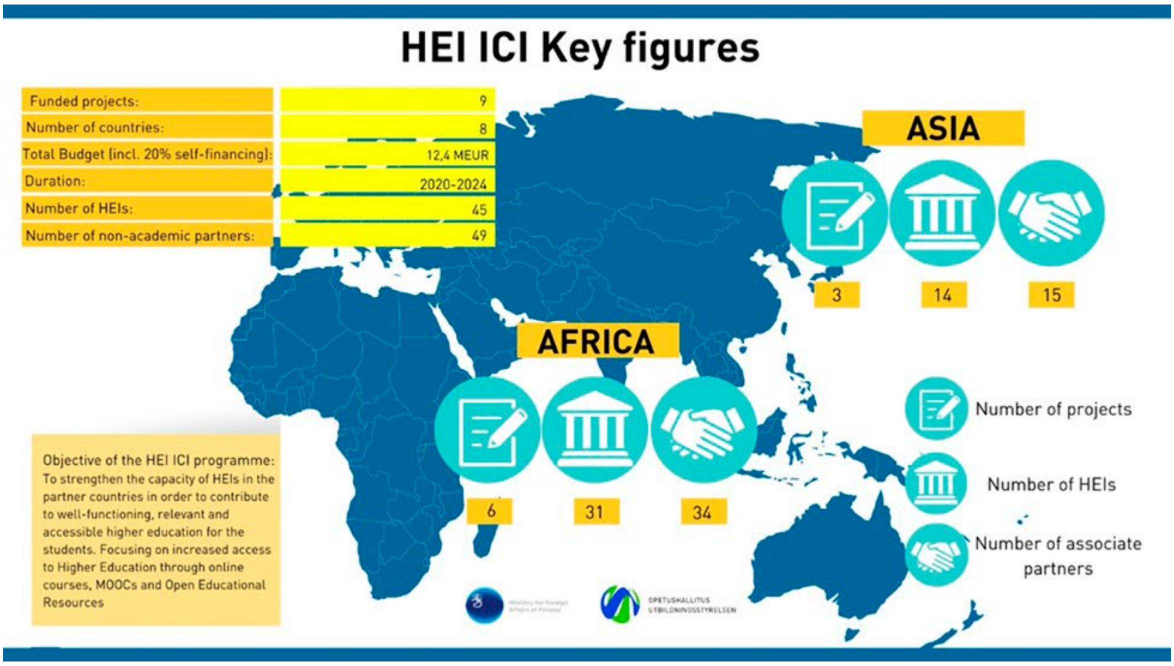
The **Human Rights-Based Approach (HRBA)** is a core principle of HEI ICI projects, demonstrated in joint planning, shared responsibilities, transparent communication, co-creation of results, equal student opportunities, open selection processes and open source materials.

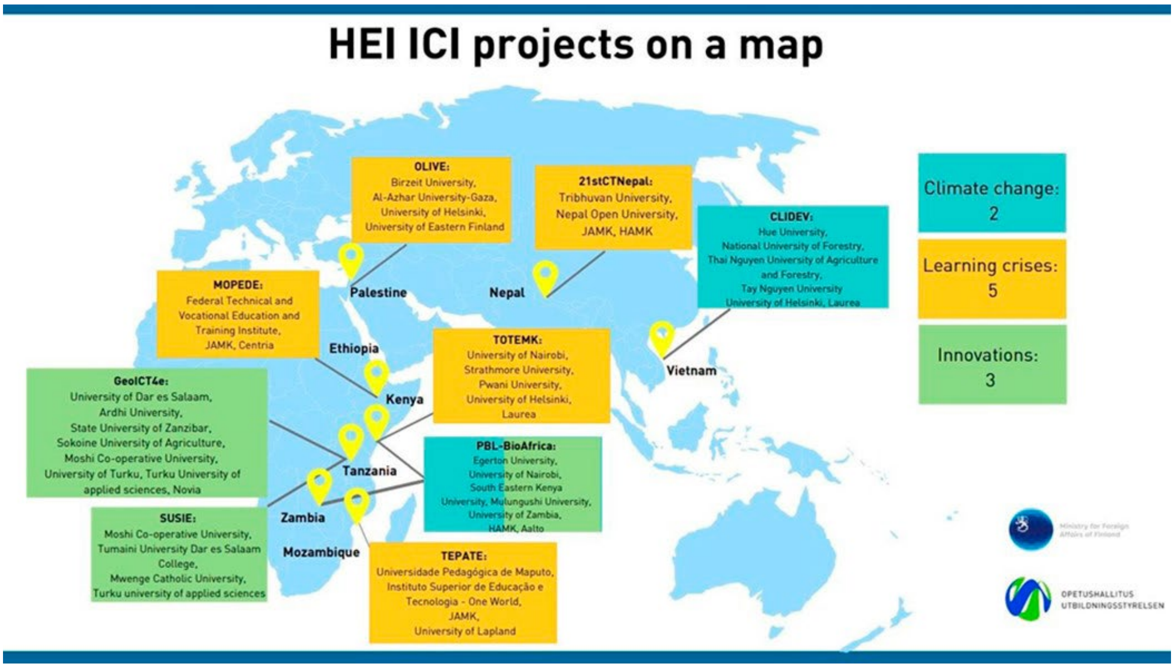
Climate sustainability is enhanced through the focus on digital learning as well as on problem-based methodologies which incorporate locally relevant, real-life sustainability issues directly into curricula and courses, e.g., in climate-smart agriculture, circular economy or green forest management.

During the period 2020-2024, the HEI ICI programme supported nine projects and the total budget including the self-financing share of the projects (20%) was EUR 12.4 million.

The HEI ICI programme involved **45 HEIs in partner countries: 14 in Asia and 31 in Africa, together with 11 Finnish HEIs.** It is noteworthy that there were almost **50 associated non-academic partners.**

A LIST OF ALL HEI ICI PROJECTS IS AVAILABLE IN ANNEX 1

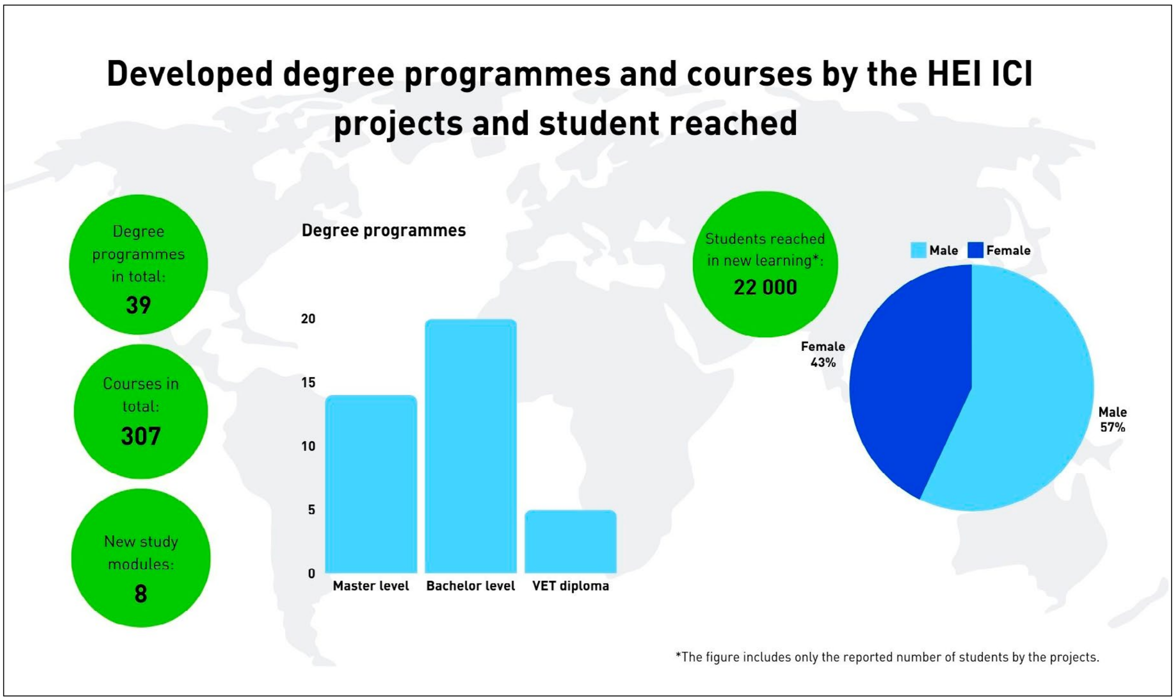




MAIN RESULTS

The key achievement of the programme period 2020-2024 was improving the quality and relevance of higher education in the eight target countries in Africa and Asia. In concrete terms, **39 study programmes** were developed or revised, and **307 courses** and **eight study modules** were created. These study programmes ranged from teacher training, VET teacher training, educational sciences, agricultural sciences, agrobusiness, forestry, geography and geoinformatics and ICT to climate change and biodiversity.

More than **90 faculties and schools** were involved in curricula-updating activities and professional development was offered to more than 18,000 staff. During the period 2020-2024, **22,000 students were reached**, but many more will benefit in the future through the new education components integrated into curricula.



The initial 1.5 years of implementation were heavily affected by the COVID-19 pandemic but the projects were able to accelerate their progress afterwards. A clear majority of the planned outcomes were achieved, and the pandemic mainly caused delays in dissemination activities. The **focus on digital learning** emerged as a very **relevant and timely objective** and perfectly supported the HEIs in the changing operational environment.

Strong support for national reforms

It is noteworthy that many HEI ICI partnerships **contributed directly to achieving strategic aims and policy objectives at national level in the partner countries** even though they are institution-level projects. Some examples include the TOTEMK project which directly reinforced the Kenyan policy on competency-based learning and the projects in Nepal and Palestine which both supported the national digital education policy.

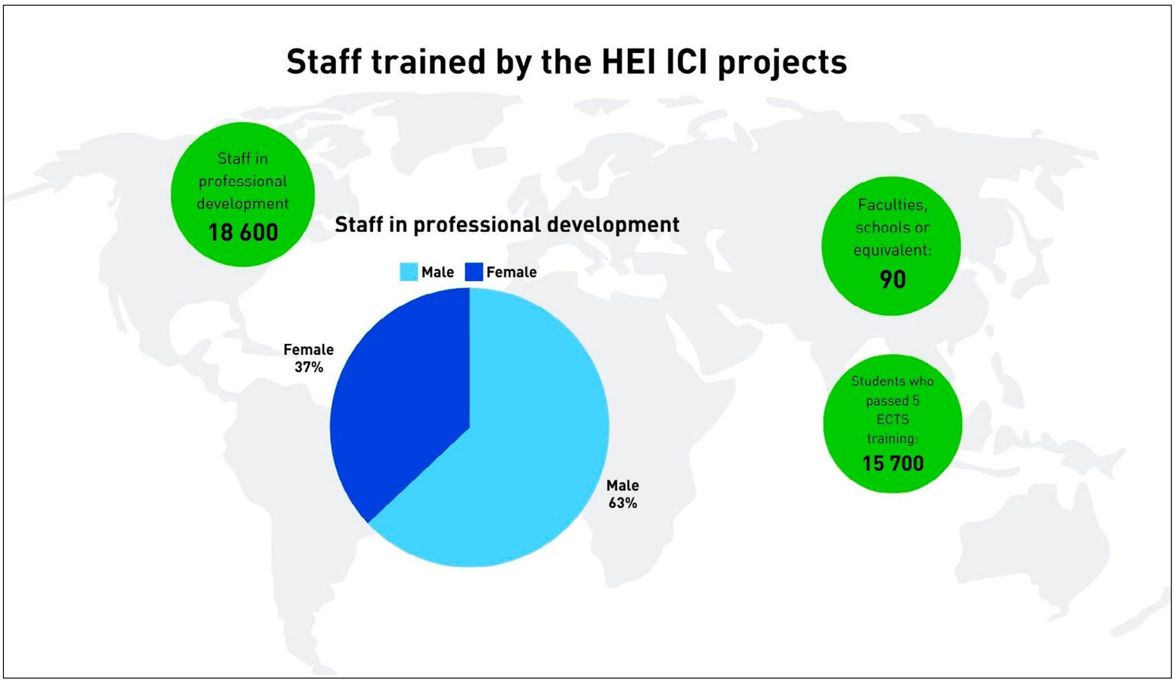
Engagement of private sector actors in university-industry innovation activities

The HEI ICI projects actively collaborated with non-academic stakeholders to strengthen the relevance of higher education in society and the working world. Projects did **ground-breaking work related to innovation and university-industry connections** by introducing multi-disciplinarity and new methodologies such as business incubation, living labs, problem-based learning, challenge-based learning and reverse innovation. **Private sector actors got access to international student groups** to come up with solutions to real-world, contextual problems and also offered internship opportunities to students. External industry collaboration was also crucial in **entrepreneurship training** and resulted in student start-ups.

Networking and knowledge benefits for Finnish actors

The Finnish institutions involved reported multiple benefits from the HEI ICI partnerships, both institutional and individual. Some of these are listed below:

- Increased access to innovation networks and hubs in Africa.
- Increased access to research collaboration and student recruitment opportunities.
- Increased understanding of African societies and operational contexts, leading to stronger interest in cooperation with Africa.
- Better understanding of how Finnish HEIs can address the needs of partner HEIs in Africa and how Finnish actors can complement international partners.
- References for education projects, which are valuable for education export in the increasingly competitive education market.



RESULTS LINKED TO REFORM POLICIES IN PARTNER COUNTRIES

Although the HEI ICI programme primarily supports cooperation between HEIs, several projects have **contributed directly to strategic aims and policy objectives at national level in partner countries.**

Country	Examples of HEI ICI project contribution to national reforms
KENYA	The TOTEMK project with the Ministry of Education supported the national reform of a Competency Based Curriculum (CBC) in Kenyan schools, and reached out to 22 Kenyan HEIs with increased knowledge and skills on CBC, learner-centered pedagogy, digital skills and leadership. TOTEMK is mentioned in the **Presidential Working Party's Report on Education Reform (2023) as an influential in-service training project.**
NEPAL	**Digitalisation and ICT integration are part of the Nepalese government's core reform agenda for education.** The HEI ICI project directly aligned with the agendas of the Digital Nepal Framework (2018), School Education Sector Plan (SESP, 2022) and Nurturing Excellence in Higher Education Program (NEHEP, 2021).
PALESTINE	The OLIVE partnership helped advance Palestine's national education strategy by **enhancing the accessibility and quality of education** with the integration of **digital tools and innovative pedagogy**. The capacity building for teacher educators and the establishment of an online mentoring platform facilitated **professional development**. The project also upgraded the digital infrastructure in Birzeit University.
TANZANIA	Tanzania is investing in the "Higher Education for Economic Transformation" (HEET) project focused on quality learning, digital transformation and increased access to universities. The project contributes to the National Five-Year Development Plan III (2021/22-2025/26) and the National Development Vision (2025). **GeoICT4e worked on curricula and course renewal processes within HEET in each Tanzanian partner university.** The **SUSIE project was closely aligned with Tanzanian educational reforms that emphasise competence-based learning to improve employability**. The "Working life-related innovation pedagogy" successfully transformed the teaching methods and pedagogy in the partner institutions, also engaging private sector companies and organisations.

CONSISTENCY WITH SDGS

All HEI ICI projects naturally contributed to SDG 4 on Quality Education and its sub-goals (especially 4.3, 4.4., 4.5 and 4.7), as well as to SDG 17 on Partnership for the Goals and SDG 5 on Gender Equality.

Projects also supported SDG 8 on Decent Work (TVET), SDG 11 on Sustainable Communities, SDG 13 on Climate Action and SDG 15 on Life on Land, and have connections with SDG 9 on Industry, Innovation and Infrastructure.

COOPERATION WITH THE PRIVATE SECTOR AND NON-ACADEMIC ACTORS

HEI ICI projects actively collaborated with industry, the private sector and the surrounding non-academic community to strengthen the relevance of higher education in society and the working world. The partnerships developed study programmes and courses offering **skills and multi-competences important for employability** such as problem-solving, use of digital tools, teamwork, intercultural awareness and knowledge applied to real-world issues.

Many projects did **ground-breaking work related to innovation and university-industry connections** by introducing multi-disciplinarity and new methodologies such as business incubation, living labs, problem-based learning, challenge-based learning and reverse innovation. HEI ICI projects used **transformative pedagogies to create experiential learning opportunities** for students. These included internships, research projects and community engagement initiatives, with the involvement of industry, local governments and communities.

Private sector actors got access to international student groups to come up with solutions to real-world problems and offered internship opportunities to students. External industry collaboration was also crucial in **entrepreneurship training** and resulted in student start-ups.

*CASE: **PBL-BioAfrica**, Kenya and Zambia: non-academic partners were involved in the problem-based learning and entrepreneurship components. There was collaboration with the governments of Kitui and Makueni Counties through the Ministry of Agriculture and Livestock Development, and with the private sector including farmer cooperatives like NZAMKA COOP and the Kitui Dairy Cooperative Society. Nine local companies were involved: Zambeef, Opticom Investments, Luusam Enterprise, Entrust Stockfeed LTD, Icon Zambia, Action Against Hunger, Taonga Farms, Mwansa Holdings LTD and Bukata Farms.*

In agriculture and forestry projects, external industry collaboration was crucial to the design of an **agri-entrepreneurship training program.** Training involved production unit managers, commercial managers, farm managers and other key staff members from diverse backgrounds. They were introduced to modern student-centred pedagogy, agrobusiness and the **entrepreneurial mindset, starting and managing businesses, leadership, and financial literacy.** This resulted in the successful establishment of mentorship programmes and some business and knowledge hubs. The spinoffs were **student start-ups which emerged as micro-entrepreneurships.**

On the **GeoICT4e** project in Tanzania, a group of university **students founded a spin-off innovation company** to teach other young people essential skills and knowledge to excel in their university studies. The entrepreneurs used a socially innovative geospatial and ICT educational approach and GeoICT4e materials in their company.

Non-academic actors were involved in several different ways. From the early inception phase, several projects negotiated with relevant ministries and national agencies. In most countries, changing the national curricula requires approval from the ministry or agency in charge, therefore projects had to get these authorities onboard. Some project boards also included members from Ministries of Education.

Collaboration with ministries as well as local and provincial authorities enhanced institutional commitment, complementarity and the sustainability of results.

*CASE: **TOTEMK** negotiated with the Kenyan Ministry of Education, Kenya Institute of Curriculum Development, Commission of University Education, National Examinations Council and Teachers Service Commission.*

Representatives were invited onto the project board and participated in training workshops.

*All in all, the involvement of different non-academic actors has **strengthened HEIs' position as centres of expertise in societal development.***

HEI ICI AS A CATALYST FOR ACCESS TO THIRD-PARTY FUNDING

Several HEI ICI partnerships received acknowledgement of the results they achieved in the form of awards or financing from International Development Agencies or others. Some examples are highlighted below.

Examples of awards and 3rd party funding for HEI ICI partnerships
The TOTEMK partnership in Kenya received 1) British Academy funding for a Workshop for Early Career Researchers, 2) Research-Based and Future-Oriented Curriculum Review and Development Initiative (REFORD) funding for the University of Nairobi, Strathmore University, the University of Turku and the University of Helsinki.
TEPATE: In 2023, FinCEED provided funding for 'Technical support for finalizing the National Framework of Professional Standards and Qualifications of Teachers in Mozambique', implemented by JAMK after a tendering process in collaboration with the beneficiary, the Ministry of Education and Human Development.
CLIDEV: Several Vietnamese project staff received grants from other significant sources, including the Swedish International Development Cooperation Agency (SIDA), the German government and the Canadian government.
PBL-BioAfrica: The TagDev 2.0 project funded by the Mastercard Foundation, the Erasmus+ project Agriculture Innovation Nests in SSA, the EU-funded project AFRETEC Network, Smartville, the Communal Entrepreneurship Education to Zambia (CEEZAM, LAB 2023) project funded by Finnpartnership, and the Accelerated Growth for SMEs (AGS) in Zambia Programme (2022), a private sector initiative by MFA Finland.
GeoICT4e: The Tanzania Resilience Academy funded through FCDO via the World Bank, Literati cooperation by the World Bank, the Team Europe Initiative SASA, GIZ funding of the Resilience Academy, and the Finnish-funded BLUE-ZAN project in Zanzibar with SYKE. Learnings from the GeoICT4e project have been utilised in the ERASMUS+ project Forest 21 in South Africa (coordinated by HAMK UAS).
Several HEI ICI projects have been granted complementary funding from the Erasmus+ Global mobility scheme, e.g., OLIVE, CLIDEV. See https://www.oph.fi/en/programmes/global-mobility-higher-education-general-information
The Erasmus+ capacity-building funding scheme has also financed partnerships based on HEI ICI contacts, e.g. within CLIDEV and PBL-BioAfrica.

RESULTS ACCORDING TO HEI ICI PROGRAMME THEMATIC AREAS

Higher education for solving the learning crisis (OLIVE, TEPATE, Nepal, TOTEMK, MOPEDE)

The five partnerships working on solving the learning crisis all focused on **strengthening the quality of teacher education** as one of the central prerequisites for quality learning. The HEI ICI teacher education cooperation programmes **trained more than 10,000 staff in a total of 47 Faculties or Schools of Education in five countries**: Ethiopia (TVET teacher education), Kenya, Mozambique, Nepal and Palestine.

Results in a nutshell (for more detailed information, see Annexes 2 and 3):

18 new or revised study programmes	New or revised courses
3 Master's Degrees 2 in Digital Pedagogy, in Tribhuvan University (TU) and Nepal Open University, Nepal TVET Leadership and Management, Federal TVET Institute, Ethiopia **14 Bachelor's Degrees** Technical Teacher Education (Generic, Agroprocessing, ICT, Electrical, Construction, Wood, Architecture, Leather, Automotive, Manufacturing Technology), Ethiopia 4 STEM bachelor's programmes with a focus on Mathematics, Chemistry, Biology, Physics; Birzeit University, Palestine **1 vocational diploma**, Ethiopia	**Ethiopia:** 91 new or revised courses **Kenya**: 4 training modules of 5 ECTS, 5 MOOCs of 1 ECTS **Mozambique**: 3 bachelor's modules of 5 ECTS each. **Nepal**: 19 new courses of 5 ECTS each; in-service continuous professional development module on guidance and counselling, 5 ECTS; MOOC on guidance and counselling, 5 ECTS. **Palestine:** 4 new online modules. 28 courses renewed with digital, online measures integrated, 2-3 ECTS credits each (10 science, 24 teacher education).

In terms of substance, the teacher education projects all worked on strengthening the capacities of the partner HEIs in relation to **national reforms on competence-based learning or digitalisation.** They developed teacher knowledge and skills in a shift **from theory-based to more practical learning methodologies:** teaching practice, learner-centred and digital pedagogy, interactivity and 21st century skills.

All teacher education partnerships were characterised by the capacity-building method of **cascading training**, with an initial step involving Training of Trainers (ToT), followed by further training offered by these Master Trainers. Staff and student feedback as well as piloting of new learning components were used to demonstrate enhanced teacher capacities.

Another strong methodological element was the **co-creation of all project outcomes with partner HEIs**: the initial design, needs assessments, development of new learning components, new pedagogical training courses, etc. The cooperation represented a **joint academic learning community**, where all partners contributed complementing expertise.

*CASE: **TEPATE, Mozambique:***
30 key experts were trained in student-centred learning, collaborative module development, teaching practice implementation, supervising and mentoring. Three new modules of 5 ECTS each were developed and accredited, and are available in face-to-face, online or blended formats. 950 people were involved in training for the HEI academic staff, primary and secondary school teachers, and school managers.

The projects revolved around supporting teaching staff and teachers in **digitalisation of education**, ranging from infrastructure development and installation of digital platforms and tools to developing digital literacy, digital skills, digital pedagogy and online and blended learning, e.g., MOOCs and Open Education Resources. Furthermore, projects **worked extensively on changing attitudes** and addressing resistance towards change by setting up mentoring and tutor systems.

In terms of **challenges faced** there was sometimes an initial lack of digital skills and technical expertise among staff, and in some countries there were no policy or practices on teacher professional development, meaning no systems for short term on-the-job training for in-service teachers existed. There were some challenges related to participation in training courses offered as professional development to in-service teachers, with many countries under-resourced in terms of teaching staff and teachers strained by high workloads.

Higher education for innovation and climate (GeoICT4e, PBL-BioAfrica, CLIDEV, SUSIE)

This thematic area concentrated on two groups of projects. One was projects working on **technology-enhanced, competence-based teaching and learning** such as the GeoICT4e project which concentrated on co-creating digital social teaching and learning innovations based on applications of digital geospatial data and technologies, open-source tools, drones and AI, for example in land use and urban planning, forest mapping and management of tropical forests and coastal resources.

The second cluster groups projects focusing on **open and distance learning pedagogies and collaboration,** with strong examples including setting up Open Educational Resources (OER), MOOCs, online course Moodle platforms, and Design Thinking (DT) training, focusing on value creation and scaling within the organisation.

Several training courses were implemented and new pedagogical skills were acquired by both trainers and participants especially in the use of new approaches such as **learner-centred pedagogy**. In addition, students got access to the skills and new technological tools to access remote online learning modules via MOOCs.

HEI ICI partnerships upgraded courses and revised curricula based on new knowledge on multidisciplinary approaches. All in all, **155 new courses were created and more than 8,000 teachers and 19,000 students were trained.** The numbers related to training should be viewed cautiously, because individuals may have participated in several training courses and thus been counted several times.

The projects reached far beyond the initial partner countries; for example, **more than 30 countries in Sub Saharan Africa got access to new online courses and MOOCs.**

Some African countries embraced **new, innovative pedagogies** such as Problem-Based Learning (PBL) and Case Study Approaches (CSA). For example, PBL and CSA were embedded in curricula and made compulsory in some faculties of the South-Eastern Kenya University, the University of Zambia and Makerere University.

In addition, HEI ICI projects created new avenues for **interdisciplinary learning** for students and improved the accessibility of education by encouraging open educational resources (OER) such as MOOCs, now managed and owned by the partner institutions.

Finally, **HEIs become more visible and relevant** in their support of local, national, regional and international sustainable development. Therefore, involving national educational authorities and HEI management in HEI ICI projects has **strengthened HEIs' position as centres of expertise in societal development** as well.

PROJECT MANAGEMENT AND QUALITY ASSURANCE

Useful effects of the pandemic on project management

As a positive side effect of the pandemic, the projects had **time for proper organisation of project management** procedures, and attention was paid to ensuring effective and transparent project coordination and communication. The collaborative culture, defined roles and effective communication channels facilitated smooth project coordination among HEIs, who responded to difficulties as they arose.

Each HEI ICI project had a basic project management structure as a requirement at programme level, which consisted of a **Project Board and nominated coordinators** in each institution. The Finnish coordinating HEI was the contact point for the MFA and EDUFI. The Project Board monitored project progress and approved any significant changes to the project plans. The project board composition was based on the needs of the project, with at least one representative from each partner HEI. The chair of the board always represented a southern partner institution and some projects used a rotating chairmanship.

__CASE MOPEDE__: in Ethiopia, inflation was high due to the effects of the pandemic together with the civil war, which put strains on the budget for investment in digital equipment. Luckily, the project found an opening through collaboration with other development partners, mainly the German GIZ, who co-financed the digital resource centre at TVTI and also offered IT training to staff.

One challenge shared by HEI ICI projects was **delays in procurements**. Sudden cost increases affected some projects, which influenced procurement and changes in travel plans. Changes in personnel as well as incompatible financial management systems also caused some difficulties. In some cases, the aftermath of the COVID-19 pandemic led to higher staff workloads, which at times put strains on time allocations.

Quality Assurance

Several methods were used for internal quality management, mostly involving dedicated **quality teams**, who oversaw measurement of **project progress against the set indicators** following the agreed cycle of internal reporting. Common quality monitoring activities were data collection, analysing feedback on project activities, self-evaluations, regular follow-up of progress, open communication culture and close operational working relationships, as well as regular reviews of results frameworks and risk matrices. In addition to internal measures, some HEI ICI projects also commissioned external mid-term or final evaluations or reviews.

The goal of several HEI ICI projects was to **integrate standardised quality assurance methods into normal academic processes** to guarantee the quality of the outputs developed during project time.

Sustainability of the results

The foundation for sustainability was already laid at the very beginning of the HEI ICI projects. Contextualised needs-assessments ensured that the projects were designed to respond to needs identified by the partner HEIs.

Some examples of methods of sustaining project results:

- Formal accreditation and embedding of planned courses into curricula and learning practices.
- Content and materials updated after some time and people responsible nominated.
- Intensive training of trainers during the project period.
- MOOCs as permanent educational resources.
- Permanent Moodle platforms (plus ongoing training in their use).
- Responsible key persons nominated for maintenance of ICT equipment.
- Framework created for continued knowledge exchange, e.g., shared learning platforms.
- Continuing co-supervision of thesis or research cooperation.
- Active project results promotion at regional or national level involving relevant stakeholders, government officials, ministries and public, private and non-governmental organisations.
- Diversification of funding sources thereby increasing financial resilience.

Mutual interest, co-creation and participatory approaches were key tools to ensure sustainable results, avoiding north-driven, top-down solutions. The close partnerships developed during the projects also continued after the programme period. At institutional level, project partners signed MoUs to seal their continued future partnerships. The project outputs (courses, MOOCs, etc.) have been integrated into normal education activities and moreover, communication and **engagement with institutional leadership** has improved ownership of project results.

Annex 1. List of projects

HEI ICI Projects 2020–2024				
Acronym	**Partner countries**	**Project themes**	**Coordinating HEI in Finland**	**Funding granted**
21st CS Nepal Developing pedagogy for 21st century skills in Nepal	Nepal	Solving the Learning Crisis	JAMK University of Applied Sciences	€986,071
CLIDEV Strengthening climate change education for sustainable development in Vietnam	Vietnam	Climate Change	University of Helsinki	€1,208,726
GeoICT4e Social innovations in Geo-ICT education in Tanzanian HEIs for improved employability	Tanzania	Innovations	University of Turku	€1,923,365
MOPEDE Capacity-building to modernise TVET pedagogy in Ethiopia	Ethiopia	Solving the Learning Crisis	JAMK University of Applied Sciences	€986,341
Olive Teacher Education without Walls – New models for STEM and teacher education in the digital age	Palestinian Territories	Solving the Learning Crisis	University of Helsinki	€1,479,059
PBL-BioAfrica Problem-based-learning, bioeconomy entrepreneurship and capacity-building programme in Africa	Kenya, Zambia	Climate Change, Innovations	HAMK University of Applied Sciences	€1,478,921
SUSIE Sustainable business and employability through HEIs' innovative pedagogy	Tanzania	Innovations	Turku University of Applied Sciences	€959,412
TEPATE Theory-practice balance in teacher education	Mozambique	Solving the Learning Crisis	JAMK University of Applied Sciences	€1,024,500
TOTEMK Training trainers for teacher education and management in Kenya	Kenya	Solving the Learning Crisis	University of Helsinki	€1,183,609

Annex 2. Country-specific list of new or revised study programmes and courses

LIST OF NEW OR REVISED STUDY PROGRAMMES AND COURSES
HEI ICI 2020-2024

ETHIOPIA

Federal TVET Institute

- Faculty of TVET Leadership and Management
  - Master of Arts Degree in Leadership and Management
    - TVET Management
    - Project Design and Development
    - 21st Century Leadership

- Faculty of Agroprocessing
  - Bachelor's Degree in Technical Teacher Education (Agroprocessing)
    - Dairy Production and Management
    - Fruit and Vegetable Packaging Technology
    - Principles of Animal Nutrition
    - Dairy Microbiology
    - Information Technology

- Faculty of Freshman and Common Courses
  - Bachelor's Degree in Technical Teacher Education (Common syllabus)
    - Educational Technology
    - Curriculum & TTLM Development
    - Inclusiveness
    - Applied Mathematics I (1-5)
    - Applied Mathematics II (1-2)
    - Assessment and Evaluation in Learning
    - Assessment and Evaluation in Learning (Adama PTC Campus)
    - Mathematics for Natural Sciences
    - Scientific Research Methodology
    - Entrepreneurship
    - Procurement and Contract Management
    - Geography of Ethiopia and the Horn
    - Introduction to Computers
    - Industrial Management and Engineering Economics
    - Teaching Practice
    - Research Methodology
    - Applying 5s Design

- Faculty of Electrical/Electronics and ICT
- Bachelor's Degree in Technical Teacher Education (ICT)
    - Web Content Management Systems
    - Information Security
    - Product Development and Sensory Evaluation
    - Web Design and Development
    - Object-Oriented System Analysis and Design
    - Fundamentals of Programable Logic Controllers

- Bachelor's Degree in Technical Teacher Education (Electrical/Electronic Technology)
    - Digital Electronics
    - Communication Systems I
    - Refrigeration and Air Conditioning
- Faculty of Civil Technology
  - Bachelor's Degree in Technical Teacher Education (Construction Technology)
    - Building Construction I
    - Building Construction II
    - Fabric and Structure Design
    - Construction Project Management
    - Installing Water Supply and Sanitary Drainage Systems
  - Bachelor's Degree in Technical Teacher Education (Wood Technology)
    - Woodworking Machines I
    - Woodworking Machines II
    - Woodworking Machines II (Athlet Kenenisa Satellite Campus)
    - Woodworking Machines II (Arbaminch Satellite Campus)
  - Bachelor's Degree in Technical Teacher Education (Architectural Design Technology)
    - Introduction to Engineering Drawing

	Faculty of Textile and Apparel Fashion Technology Bachelor's Degree in Technical Teacher Education (Leather Products) Footwear Design, Then and Now Fundamentals of Fashion Design Faculty of Mechanical Technology Bachelor's Degree in Technical Teacher Education (Automotive Technology) Vehicle Heating and Air Conditioning Braking Systems Automotive Electricity and Electronic Fundamentals Automotive Electricity and Electronics I (Ethio-Italy Campus) Automotive Electricity and Electronics II Bachelor's Degree in Technical Teacher Education (Manufacturing) Welding Technology I CNC Programming and Application II CNC Programming and Application II (Kombolcha Campus) Computer-Aided Design (CAD) TVTI Satellite Colleges' Vocational Diploma Programme Level II Programme in IT Support Computer Maintenance Personal Computer Operations LOI Digital Technology Applications Multimedia Systems and Development Level II Programme in Hotel Management Food and Beverage Service Management II
KENYA	***TOTEMK***
University of Nairobi	Use of Modern Technologies To Enhance Learning, 5 ECTS (Bachelor's) Pedagogical Leadership and Management in School Related to CBC, 5 ECTS (Bachelor's) Socio-Cultural Issues to Empower Teacher's Work, 5 ECTS (Bachelor's)
Strathmore University	21st Century Teaching and Learning Skills, 5 ECTS (Bachelor's) Pedagogical Approaches io Competence-Based Curriculum MOOC, 1 ECTS (Bachelor's) 21st Century Skills In Learning and Teaching in Alignment with CBC MOOC, 1 ECTS (Bachelor's) Technology-Enhanced Learning and Teaching Aligned with CBC MOOC, 1 ECTS (Bachelor's) Socio-Cultural Issues to Empower Teachers Aligned with CBC MOOC, 1 ECTS (Bachelor's) Pedagogical Leadership and Management in Schools and HE Aligned with CBC MOOC, 1 ECTS (Bachelor's)
	PBL
Egerton University (EGU)	Study programmes and courses have been embedded with Climate Smart Agriculture, Problem-Based Learning and Entrepreneurship elements. EGU: MSc in Agribusiness Management, MSc in Agri-Enterprise Development, Master of Sciences in Food Science, Master of Sciences in Horticulture, Bachelor of Agribusiness Management.
South Eastern Kenya University (SEKU)	SEKU: Entrepreneurship course introduced and embedded in curricula (Department of Agricultural Sciences – AME 101-Introduction to Agribusiness Management and Entrepreneurship).
University of Nairobi (UoN)	UoN: All curricula of the 323 study programmes of the university to incorporate student-centred approach, Competency-Based Curriculum (CBC), mainstream experiential competency and problem-based learning by the year 2027.
MOZAMBIQUE	
Universidade Pedagógica de Maputo and Instituto Superior de Educação eTecnologia One World	Módulo de Construtivismo na Prática Educativa de Formação dos Formadores, 5 ECTS (Bachelor) Avaliação da aprendizagem na perspetiva construtivista: aspectos teóricos e metodológicos, 5 ECTS (Bachelor) Professor como agente de mudança, 5 ECTS (Bachelor) *Translations (translated by Google)* *Constructivism Module in Educational Practice for Training Trainers, 5 ECTS (Bachelor)* *Assessment of learning from a constructivist perspective: theoretical and methodological aspects, 5 ECTS (Bachelor)* *Teacher as an agent of change, 5 ECTS (Bachelor)*

NEPAL	
Tribhuvan University (TU) and Nepal Open University (NOU)	Master of Education in Digital Pedagogy programmes — for in-service teachers continuous professional development (equivalent to 36 ECTS) Master of Education in Digital Pedagogy for pre-service education (equivalent to 36 ECTS) In-service continuous professional development module on guidance and counselling, 5 ECTS MOOC on guidance and counselling, 5 ECTS Courses in the M.Ed. in Digital Pedagogy programme, Tribhuvan University (5 ECTS each) *Core Education Courses:* Basic Education Study Curriculum for 21st Century skills Educational Guidance and Counselling Assessment in Education Educational Research *Digital Education-Related Courses:* Digital Skills for Teachers Innovative Technologies in Education Education for 21st Century Skills Learning Management System Courses in the M.Ed. in Digital Pedagogy programme, Nepal Open University (5 ECTS each): *Core Courses:* Perspectives on Education Learning and Instructional Sciences Professional Research in Education Curriculum Development Assessment in Education *Specialisation Courses:* Digitalisation in Education Skills for 21st Century Learners Guidance and Counselling Techniques and Technologies in Education Leadership Development for Learners
PALESTINE	
Birzeit University	4 new online modules: Online Teaching in the Practicum, Creative Writing, Pedagogical Leadership and Maker Education. 4 Bachelor's programmes revised with new STEM subjects: STEM Bachelor's programme focused on Mathematics STEM Bachelor's programme focused on Chemistry STEM Bachelor's programme focused on Biology STEM Bachelor's programme focused on Physics 28 courses renewed with digital, online measures integrated, of 2-3 ECTS credits each

TANZANIA	*Geo ICT4e*
University of Dar es Salaam (UDSM), Department of Geography and College of ICT	• Master of Sciences in Geographical Information Systems (GIS) and Remote Sensing • Master of Sciences in Data Science • Bachelor of Sciences in Geographical Information Systems (GIS) and Remote Sensing • Bachelor of Sciences in Environmental Assessment and Natural Resources Management (revised) • Bachelor of Sciences in Business IT (Geographical Information Systems and Environmental Management Information Systems) 9 courses revised with e-learning assets, such as MOOCs: Remote Sensing; Applied Geographical Information System; Methods in GIS; Cartographic Geovisualisation; Principles of Remote Sensing; Digital Image Processing; Participatory GIS; Introduction to GIS; Geospatial Data Management
Ardhi University (ARU)	• Master of Sciences in Geomatics • Master of Sciences in Geographic Information Systems and Remote Sensing • Master of Sciences in Geographic Information Systems • Master of Sciences in GeoICT • Bachelor of Sciences in Geomatics • Bachelor of Sciences in Geographic Information Systems and Remote Sensing • Bachelor of Sciences in Information Systems Management • Bachelor of Sciences in Computer Systems and Networks • Bachelor of Sciences in Geospatial Information and Communication Technology 15 courses revised with e-learning assets such as mini-MOOCs: Principles of Cartography, Fundamentals of Geographical Information Systems, Principles of Spatial Data Acquisition, Web GIS and Mobile Applications, Spatial Data Modelling and Analysis, Geospatial Databases, Advances in Remote Sensing Techniques, Advanced Remote Sensing, Database Systems.
Sokoine University of Agriculture (SUA)	• Master of Sciences in Information Science and Knowledge Management • Bachelor of Sciences in Forestry (revised) • Master of Sciences in Forestry (revised) • Master of Sciences in Forest Engineering (revised) • Master of Sciences in Forest Resources Assessment and Management (revised) • Master of Sciences in Ecosystem Sciences and Management (revised) 4 courses revised with e-learning assets, such as mini-MOOCs: Principles of Remote Sensing and GIS; Climate Change; Remote Sensing and GIS; Advanced GIS and Remote Sensing: Forestry Applications
The State University of Zanzibar (SUZA)	• Master of Sciences in IT • MSc in Climate Change • BA in Geography and Environmental Studies • BSc in Computer Science • BSc in Geoinformatics 8 courses revised with e-learning assets, such as mini-MOOCs: Introduction to Geographical Information Systems; GIS and Remote Sensing for Natural Resources Management in Climate Change; Cartography; Geospatial Data Management and Visualisation; Leadership and Innovation in IT; Introduction to GIS and Remote Sensing; Extra Curricula Activity
Moshi Co-operative University (MoCU)	• Bachelor of Science in Data/Computer Science • Bachelor of Business Information and Communication Technology • Bachelor of Marketing and Entrepreneurship • Bachelor of Community Economic Development 4 courses revised with e-learning assets, such as mini-MOOCs: Artificial Intelligence, industrial placement courses.
Moshi Co-operative University, Tumaini University Dar es Salaam College, Mwenge Catholic University	***SUSIE*** 26 online courses, including short courses for professionals, educational offerings aligned with market demands, enhancing institutional relevance and supporting lifelong learning.

VIETNAM	The following courses have been upgraded and accredited by partner universities.
Hue University	Hue University: 1. Enhancing Knowledge and People's Capacity to Adapt to Climate Change 2. Social Aspects of Sustainable Forest Resource Management in the Tropics 3. Forest Land Management and Agroforestry 4. Improvement of Forest Tree Species and Tropical Afforestation 5. Integrated Knowledge for Sustainable Forest Resource Management 6. Tropical Silviculture
National University of Forestry	VNUF, National University of Forestry 1. Spatial Analysis Applied to Climate Change and Sustainable Development 2. GIS Applications In Forest Resources Management 3. Fundamentals of Climate Change and Sustainable Development 4. Mangrove Restoration and Climate Change 5. Climate Change Adaptation in Forestry 6. Policies on Sustainable Management of Natural Resources 7. Climate Change Communication
Tay Nguyen University	TNU, Tay Nguyen University 1. Tropical Forest Ecology 2. Enhancing Knowledge and People's Capacity to Adapt to Climate Change in the Central Highlands 3. Local Ecological Knowledge In Forest Resource Management 4. Agroforestry 5. Ecology and the Environment 6. Social Aspects of Sustainable Forest Resource Management in the Tropics 7. Integrated Knowledge for Sustainable Forest Resource Management
Thai Nguyen University of Agriculture and Forestry	TUAF, Thai Nguyen University of Agriculture and Forestry 1. Agroforestry Systems 2. Climate Change in Agriculture and Forestry 3. Integrated Knowledge for Sustainable Forest Resource Management 4. Enhancing Knowledge and People's Capacity to Adapt to Climate Change in Uplands 5. Silvicultural Technique
ZAMBIA	
Mulungushi University MU	Study programmes and courses have been embedded with Climate Smart Agriculture, Problem-Based Learning and Entrepreneurship elements. MU: Upgrades of undergraduate and postgraduate programmes: Climate Change and Variability, Management of Farm Enterprises, Agriculture, Food Security and Climate change, Key concepts of Climate change and Sustainable Development, Agroforestry and climate Smart Agriculture, Agricultural Entrepreneurship, Farm Machinery and Food Processing, Irrigation, Management of Farm Enterprises, Agricultural Marketing.
University of Zambia UNZA	UNZA: PBL & entrepreneurship embedded in Year 1-4 of courses; Year 1: Introduction to Sustainable Agri-entrepreneurship, Year 2: Agribusiness Entrepreneurship Development, Year 3: Agribusiness Planning and Creation, Year 4: Agribusiness Management.

Annex 3. List of books, articles and publications by HEI ICI projects

COUNTRY	BOOK, ARTICLE, PUBLICATION
Ethiopia	**MOPEDE:** OP4 guidebook: Burns, G., & Harmoinen, A. (2024). Digital transformation of learning environments: From the classroom to student-centred online learning. https://www.theseus.fi/handle/10024/864744.
Kenya	**TOTEMK:** Kwena, J. & Mondoh, H. (2022). REPORT FOR THE BASELINE SURVEY 2 Socio-Cultural Issues to Empower Teachers Work. SURVEY 2 for TOT4. Seija Karppinen and Veera Kallunki supervised the following Master's thesis, with data collected from TOTEMK participants: Lehtonen, Hilde (2023). There is beauty in diversity. Kenyan teacher educators religious and worldview competences. Subject Teacher Education of Islam. Master's Thesis. Supervisors: Mulki Al-Sharmani, Seija Karppinen & Veera Kallunki. 4/2023. https://helda.helsinki.fi/server/api/core/bitstreams/b7b8df05-dd02-4642-bfa4-81cc86108bdf/content Tuija Marstio, Mikko Häkkinen, Tomi Tolonen & Beatrice W. Njeru (2023). Bullying in the Higher Education Context - Case studies from Kenya and Finland https://www.theseus.fi/bitstream/handle/10024/815840/Laurea%20Long%2013_2023.pdf?sequence=2&isAllowed=y **PBL:** The partnering universities have published a total of 22 peer-reviewed professional and research and development publications in HAMK Unlimited. Pedagogical and curriculum development materials published/shared: https://oercommons.org/courseware/lesson/116453/overview • PBL-ENT Manual • 7 ENT videos & 2 Manuals: Aalto developed a 7-module set of videos covering the entrepreneurial process and its integration into curricula. Two accompanying, in-depth hands-on manuals for teaching and curriculum planning on entrepreneurship were written, with contextualised exercises derived from the project's PBL context. ENT Professional Development video modules
Mozambique	The book Moçambique e Finlândia Perspectivas Educacionas Comparadas was published in August 2024 and offers a comparative analysis of education and pedagogical practices in Finland and Mozambique. The book includes 8 articles written by key Mozambican experts. Henriksen, S. & Chavale, A. (Eds.) (2024). Moçambique e Finlândia Perspectivas Educacionas Comparadas. Mozambique. Gala-Gala Livros. Castiano, J. P. (pp. 11-17). O Futuro em Questão: os Caminhos da Sociedade ao Aluno a partirde Exemplos na Educação Moçambicana e Finlandesa. • Henriksen, S. (pp. 17-29). Aprendizagem Contínua ao Longo da Vida e Aprendizagem de Línguasao Longo da Vida – Lições da Finlândia. • Chavale, A. F. (pp. 39-46). Língua na Educação e Educação sobre as Línguas: O Caso da PolíticaLinguística da Finlândia e de Moçambique. • Mondlane, A. (pp. 47-57). Autonomia do Professor e Autogestão dos Alunos nas AtividadesEscolares. • Cruz, P. (pp. 59-76). Aspectos Teórico-práticos Sobre Avaliação: Pontes e Fronteiras entreMoçambique e Finlândia. • Guilherme, B. (pp. 77-120). O Desenvolvimento Profissional e Identidade do Professor emMoçambique: Reflexões e Desafios. • Ussene, C. (pp. 121-140). Formar um Professor Criativo para a Transformação da Sociedade. • Feluane, H. (pp. 141-172). Ensino e Pedagogia Centrada no Aluno: Da Teoria à Realização noEnsino da Língua Inglesa. *Translations (By Google translate)* *Castiano, J. P. (pp. 11-17). The Future in Question: the Paths of Society to the Student based on Examples in Mozambican and Finnish Education.* • *Henriksen, S. (pp. 17-29). Continuous Lifelong Learning and Lifelong Language Learning – Lessons from Finland.* • *Chavale, A. F. (pp. 39-46). Language in Education and Education about Languages: The Case of the Language Policy of Finland and Mozambique.* • *Mondlane, A. (pp. 47-57). Teacher Autonomy and Student Self-Management in School Activities.* • *Cruz, P. (pp. 59-76). Theoretical-practical aspects about Assessment: Bridges and Borders between Mozambique and Finland.* • *Guilherme, B. (8pp. 77-120). Professional Development and Teacher Identity in Mozambique: Reflections and Challenges.* • *Ussene, C. (pp. 121-140). Training a Creative Teacher for the Transformation of Society.* • *Feluane, H. (pp. 141-172). Student-Centered Teaching and Pedagogy: From Theory to Achievement in English Language Teaching.* Maunonen-Eskelinen, Irmeli & Kaikkonen, Leena (2021). Kansainvälinen hanketyö etämoodissa [International project work in distance mode], Review of the Development of Education. Publications of Jamk University of Applied Sciences.

Nepal	Handbook for cascading knowledge on digital and 21st century skills: Peer-to-peer training manual to guide the inclusion of 21st century skills in all learning activities at all educational level Train-the-Trainers Handbook on Guidance and Counselling for Schools: https://nou.edu.np/2024-10-02-1727853749 Higher Education initiative challenges based on multiple frames of leadership: the case of Nepal Open University, published by Taylor & Francis Online in The Journal of Open and Distance Learning (open access publication) on 22 Feb 2021. Khanal, J., & Ghimire, S. (2022). Practices enacted by Nepal Open University for equity and access: a qualitative study. Perspectives: Policy and Practice in Higher Education, 26:3, 78-84. DOI:10.1080/13603108.2022.2043480 Ghimire, S., & Khanal, J. (2022). Experiences of University Staff in Online Proctored Examination: A Phenomenological Study. J Mod Educ Res, 1:8. DOI: 10.53964/jmer.2022008. Ghimire, S., & Khanal, J. (2022). The Impact of COVID-19 and Challenges of Online Learning: Evidence from Technologically Under-developed Country. J Mod Educ Res, 1:2. DOI:10.53964/jmer.2022002. Susimetsä, M. & Korkealehto, K. (2023). Opettajankoulutuksen kehittäminen Nepalissa (Schoolteacher development in Nepal). Published by Hamk Unlimited at https://unlimited.hamk.fi/ammatillinen-osaaminen-ja-opetus/opettajankoulutuksen-kehittaminen-nepalissa/ Uusinoka, S. & Koskela, S. (2024). Developing guidance and counselling in Nepal. Published by Hamk Unlimited at Developing guidance and counselling in Nepal - HAMK Unlimited
Palestine	Collaboration and education in the times of crisis in Palestine : reflections from the OLIVE Project
Tanzania	**GeoICT4e:** Käyhkö, N., Mbise, M., Ngereja, Z., Makame, M. O., Mauya, E., Matto, G., Timonen-Kallio, E., & Rancken, R. (2021). Social innovations in Geo-ICT education at Tanzanian universities for improved employability (GeoICT4e). International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, XLVI-4/W2-2021, 83–89. HTTPS://DOI.ORG/10.5194/ISPRS-ARCHIVES-XLVI-4-W2-2021-83-2021. Msilanga, M., Käyhkö, N., Mbise, M., Ngereja, Z., Makame, M. O., & Mauya, E. (2021). Resilience Academy student internship model as an innovative way to enhance geospatially literate future workforce in Africa. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, XLVI-4/W2-2021, 115–117. HTTPS://DOI.ORG/10.5194/ISPRS-ARCHIVES-XLVI-4-W2-2021-115-2021. Grêt-Regamey, A., Switalski, M., Fagerholm, N., Korpilo, S., Juhola, S., Kyttä, M., Käyhkö, N., McPhearson, T., Nollert, M., Rinne, T., Soininen, N., Toivonen, T., Räsänen, A., Willberg, E., & Raymond, C. M. (2021). Harnessing sensing systems towards urban sustainability transformation. npj Urban Sustain 1, 40. https://doi.org/10.1038/s42949-021-00042-w Mkiwa, B. P., Mauya, E. W., Jonas, J. N., & Mbeyale, G. E. (2024). Integrating geospatial tools in mapping forest fire severity and burned areas in the Western Usambara Mountain Forests, Lushoto, Tanzania. doi: https://doi.org/10.1101/2024.09.29.615696 **Susie:** Hyttinen, R., Tunga, G. E., Ntulo, G. R. & Katundu, M. (Eds.) (2024). Towards Sustainable Higher Education Institutions in Tanzania: SUSIE Project Experiences. Turku, Turun ammattikorkeakoulu. Available at https://www.theseus.fi/handle/10024/865494 SUSIE papers, presented at the International Conference of MoCU and to be published in Proceedings in 2024. 1. Hyttinen, R.: Sustainable Leadership for Resilient Higher Education 2. Metili, Lois-Singa: Students' Perceptions of Innovative Pedagogy in Facilitating Learning: The Case of DarTU. 3. Tweve, Julius: Ethical Issues and Concerns of Artificial Intelligence in Co-operative Development and Management. 4. Querrec, Emmanuel: A Lean Approach to Co-operatives When Establishing a Sustainable Development and Corporate Responsibility Strategy. 4 articles by SUSIE members were published in the Conference Proceedings of Operatives and Industrialisation; Putting Members at the Centre (2nd International Conference at Moshi Co-Operative University, September 2021): - Hyttinen, R. & Ntulo, G.: Innovation Pedagogy Linking Universities and Working Life: FinTan Invites Co-operatives to Learning Communities. - Ntunga, G.: Co-operatives and ICT Integration in Tanzania: Opportunities and Challenges. - Tweve, J.: The Need for Ethical Consideration in Innovation Practices in Co-Operatives. - Querrec, E., Katundu, M. & Mauki: Co-operatives as a Sustainable Means to Support University Education and Impact the Labour Market: Experience from Tanzania and Finland

Zambia	**PBL:** The partner universities have published a total of 22 peer-reviewed professional & research & development publications HAMK Unlimited. Pedagogical and curriculum development materials published/shared: https://oercommons.org/courseware/lesson/116453/overview • PBL-ENT Manual • 7 ENT videos & 2 Manuals: Aalto developed a 7-module set of videos covering the entrepreneurial process and its integration into curricula. Two accompanying, in-depth hands-on manuals for teaching and curriculum planning on entrepreneurship were written, with contextualised exercises derived from the project's PBL context. ENT Professional Development video modules

Online
ISBN 978-952-13-6979-7
ISSN 1798-8926

Finnish National Agency for Education
www.edu.fi