RiHEI



Responsible and Impactful Universities as Sustainable Growth and Enterprise Catalysts in Georgia

FUTURE GEORGIAN HEI

(FORESIGHT METHODOLOGY & FIRST ASSESSMENT)

TUM International GmbH

February
2024

Co-funded by the European Union

Project Number: 101125355 (ERASMUS-EDU-2023-CBHE)

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A. Overview

Overall Project Objective

The general aim of RiHEI is to transform the Georgian HEI ecosystem into an engine of sustainable and responsible (socially, environmentally) growth for enterprise and job creation by investing in the capabilities of youth and better connecting education, research and innovation with private sector needs. This will be achieved by placing HEIs as "engaged" transformational actors of the country's economic ecosystem (via quadruple helix-led responsible innovation coproduction and public-private impact investment), facilitating youth entrepreneurship, boosting STEAM skills and triggering ecosystem development (clusters synergies) that fully integrate vulnerable communities as well as remote & rural areas. This will be achieved via the following general objectives (GOs):

GO1: Modernise, internationalise and increase access to Georgian higher education for next generation labour market actors with emphasis on equal opportunities, gender sensitivity and the inclusion of marginalised (including better services to students from remote/rural areas).

GO2: Address the challenges faced by Georgian HEIs towards becoming a transformational engine of sustainable and responsible (environmentally, socially) engine of growth, jobs and enterprise creation by radically transforming how innovation production is being performed within universities and by training HEIs to become quadruple helix ecosystem mobilisers, while bringing youth closer to STEAM.

GO3: Increase cooperation with the EU by developing a network of HEI capacity building provision, staff exchange and multi-ecosystem co-creation and by motivating Georgian HEIs to voluntarily converge with EU standards in higher education while promoting cross-societal exchange and collaboration, intercultural awareness, and understanding.

Aim of the Foresight Exercise: Envisioning the Future Profile of Georgian HEIs

The objective is to expand and reframe the range of plausible developments (financial, political, digital, societal, and environmental concerns) that need to be taken into consideration. By adopting this approach, the RiHEI consortium will be able to better define what skills and competences should future Georgian HEIs rely on in order to transform themselves as regional actors of responsible (environmentally & socially) engines of jobs and enterprising.

Measures Related to the Foresight Exercise

To lay solid foundation for the RiHEI project, Foresight Workshops will be organized in a 2-step approach.

- **Step 1:** One Workshop per individual university in Georgia (in total 3), organized by each university (on-site/hybrid)
- **Step 2:** One joined Workshop and Training Session on sustainable transformation of HEIs, organized by TUMint (online)

Foresight Workshop Overview

In an ever-changing world where uncertainty is the new normal, organizations must embrace a proactive approach to stay ahead of the curve. Foresight workshops have emerged as a powerful tool for anticipating and preparing for potential future challenges and opportunities. These workshops bring together diverse perspectives, analytical tools, and creative thinking to foster strategic planning based on informed foresight. To lay the groundwork, this page delves into the concept of foresight workshops, their importance, and the benefits they offer to organizations seeking to navigate an unpredictable future.

What are Foresight Workshops?

Foresight workshops are collaborative sessions designed to explore potential future scenarios, identify emerging trends, and assess their implications for an organization's strategic decision-making. These workshops bring together stakeholders from different backgrounds, including experts, executives, employees, and external partners, to collectively envision possible futures and develop strategies to cope with various outcomes.

The Process of Foresight Workshops:

- Environmental Scanning: Participants gather data and insights from various sources, such as trend analysis, market research, and technological advancements, to understand the current landscape e.g. around a specific organisation.
- Scenario Building: Different plausible future scenarios are constructed, each representing a unique set of circumstances and challenges that might unfold. These scenarios often encompass a range of possibilities, from the most optimistic to the most pessimistic.
- Systematic Analysis: Each scenario is rigorously analyzed to understand its potential impact on the organization, including risks, opportunities, and required adaptations.
- Strategic Planning: Based on the insights gained from scenario analysis, participants develop strategic plans and adaptive measures to be implemented in response to the potential scenarios.
- Actionable Roadmaps: The outcomes of the workshop are translated into practical roadmaps that guide the organization in the face of future uncertainties.

The Importance of Foresight Workshops

- Risk Mitigation: Foresight workshops help organizations identify potential risks and vulnerabilities in advance, enabling them to take proactive measures to mitigate their impact.
- Opportunity Exploration: By exploring various future scenarios, organizations can uncover new opportunities and competitive advantages that might otherwise remain hidden.
- Adaptation and Resilience: With a better understanding of potential challenges, organizations can develop adaptive strategies to remain resilient in the face of changing circumstances.
- Strategic Decision-Making: Foresight workshops equip decision-makers with well-informed insights, reducing the reliance on reactive decision-making and improving long-term planning.
- Innovation and Creativity: These workshops encourage innovative thinking and creativity, fostering an organizational culture that values anticipation and preparedness.

Benefits of Foresight Workshops:

- Enhanced Strategic Planning: Organizations can develop robust strategic plans that account for a wide range of possibilities and uncertainties.
- Future-Proofing: By actively engaging in foresight, organizations become more agile and future-proof, allowing them to stay ahead of competitors and changes in the market.
- Stakeholder Engagement: Foresight workshops promote cross-functional collaboration and stakeholder engagement, breaking down silos and fostering a shared vision.
- Building a Learning Organization: Through the foresight process, organizations develop a learning-oriented culture that continuously scans the environment for potential shifts.
- Improved Decision-Making: Informed by foresight analysis, decision-making becomes more data-driven and evidence-based, reducing the reliance on gut feelings or short-term perspectives.

Therefore, foresight workshops offer a proactive and strategic approach to address the uncertainty of the future. By engaging in collaborative scenario building and analysis, organizations can uncover insights, embrace opportunities, and fortify themselves against potential threats. With the power of anticipation and informed decision-making, organizations are better equipped to navigate the complexities of an ever-evolving world and ensure long-term success.

RiHEI Foresight Methodological Design

To ensure that the training needs of HEI staff in Georgia are fully reflected in the educational content, RiHEI adopts an innovative approach as a starting point of its methodological development by relying on OECD's strategic foresight approach. The futuring/foresight process is linked with the pre-identified training needs of the HEInnovate dimensions (See appendix for further details on the concept of HEInnovate).[1]

After the foresight has been finalized, the Georgian HEI "persona" will emerge based on use-case approaches containing: expected competences, knowledge, skills, duties both hard and soft. This will feed into better shaping the training content and making the project outputs more applied.

The RiHEI strategic foresight will build upon: horizon scanning change drivers, scenario making, opportunities and challenges identification, and policy implications to empower HEI in becoming engines of sustainability and job creation in Georgia. Focus will lay on investing in the capabilities of youth and better connecting education, research and innovation with private sector needs.

[1] HEInnovate is a self-reflection tool for Higher Education Institutions who wish to explore their innovative potential. It guides you through a process of identification, prioritisation and action planning in eight key areas. The self-assessment is available in all EU languages. HEInnovate is not a benchmarking tool. It diagnoses areas of strength and weaknesss, opens up discussion on the entrepreneurial/innovative nature of your institution and allows you to compare and contrast evolution over time. You can have instant access to your results, learning materials and a pool of experts. HEInnovate can be used by all types of higher education institutions. It is free, confidential and open to anyone to use. (Source: https://www.heinnovate.eu/en)

B. Foresight Workshops at each Georgian HEI (Step 1)

"What will a responsible and impactful HEI as a sustainable growth and enterprise catalyst in Georgia look like in 2035?"

General Information on Step 1

Format: 2-3h workshop organized by each Georgian HEI

Participants:
Around 20 people from each university:

- University Leadership:
  Vice Chancellors, Deans, and other key decision-makers who can shape the strategic direction of the university.
- Faculty and Researchers:
  Academic staff and researchers from various disciplines to ensure a multidisciplinary perspective.
- Students:
  Both undergraduate and postgraduate students who can provide insights into their educational needs and aspirations.
- Entrepreneurs and Start-up Community:
  Individuals involved in entrepreneurship and the start-up ecosystem, fostering collaboration between academia and the business world.

Preparation Tasks

- Each university should confirm minimum 10 participants for the workshop (better 20, can be in person or online). The participants should be diverse (they can be internal as well as external) and should cover expertise tangent to university development, sustainability, job creation, entrepreneurship
- During the event and/or before, ask the participants to sign the consent form (see Appendix)
- Inform them that photos will be taken (and take some photos/screenshots).

Methodological Structure and Templates for Results and Documentation

Step 1A: Georgia in 2035: "Trend Scouting"

→ *To start with, participants imagine what Georgia, in general, could and should look like in the year 2035.*

- Guiding questions:
  - What will Georgia look like in 2035?
  - What new technologies will emerge and how will they impact on the economic systems?
  - What will be trends in the labour market?
  - What will be external pressures (social, environmental, regulatory)?

Step 1B: Focus on HEI Scenario Building (or similar activity): "Dream"

→ *Now with a focus on HEIs: Participants will engage in scenario planning exercises to envision an idealistic scenario for Georgian HEIs.*

- Guiding questions:
  - Thinking of Georgian HEI in 2035: What is the impact that HEIs seek to have on the society and the labour market?
  - Which skills does the population require in Georgia to deliver on this mission?
  - What should the collaboration of Georgian HEIs with stakeholders look like in 2035 to catalyse sustainable and entrepreneurial impact in the economic ecosystem?
  - How can vulnerable communities be integrated in this process?

(See table next page to be filled out during the workshops at Georgian HEI's.)

Table 3.1 – Idealistic/Utopic scenario

→ *Please go through the following dimensions and elaborate on the envisioned state in 2035, as well as potential enablers and barriers.*

Element of the HEI persona	Description of the envisioned state	Enablers	Barriers
Dimension 1 - Leadership and Governance: in order to develop an entrepreneurial culture in an institution, strong leadership and good governance are crucial			
Dimension 2 - Organisational Capacity: People, Resources, Incentives and Rewards: key areas a higher education institution might wish to consider to minimise the organisational constraints to fulfilling its entrepreneurial agenda			
Dimension 3 - Entrepreneurial Teaching and Learning: areas in which entrepreneurial development can take place and tools to deliver education and training opportunities			

Dimension 4 - Preparing and Supporting Entrepreneurs: ways in which HEIs can provide internal and external opportunities and expertise to support staff or students in their career development or enterprising individuals on their pathway to becoming an entrepreneur			
Dimension 5 - Digital Transformation and Capability: the institution's ability to integrate, optimise and transform digital technologies to support innovation and entrepreneurship			
Dimension 6 - Entrepreneurial Ecosystem and Networks: Building and sustaining relationship with key partners and collaborators to create value for the higher education institution and society			
Dimension 7 - The Internationalised Institution: the influence of the international environment on the entrepreneurial aspects of teaching, research, talent development, new opportuni- ties and culture			

Dimension 8 - Regional Impact of the Entrepreneurial HEI: areas a higher education institution might want to measure the impact of its activities to become more entrepreneurial / innovative / involved in the region			

Step 1C: Skills Mapping: "Reality Check" – Realistic Scenario

→ *Having envisioned the desirable future of HEIs in Georgia, it is now time to compare the vision with the current situation.*

- Guiding questions:
  - Please describe how your university is currently equipped with regards to the 8 dimensions of HEInnovate. For this purpose, you can also review the results of the HEIinnovate self-assessment on eight dimensions that you have undertaken when preparing the RiHEI Proposal: Is anything missing?
  - Identify skill gaps at Georgian HEIs (idealistic vs. realistic scenario) to become regional engines of responsible environmental and social transformation.

Table 3.2 – Realistic scenario

→ *Please go through the following dimensions and elaborate on the envisioned state today, as well as potential enablers and barriers.*

Element of the HEI persona	Description of the current state	Description of identified Skill Gaps
Dimension 1 - Leadership and Governance: in order to develop an entrepreneurial culture in an institution, strong leadership and good governance are crucial		

Dimension 2 - Organisational Capacity: People, Resources, Incentives and Rewards: key areas a higher education institution might wish to consider to minimise the organisational constraints to fulfilling its entrepreneurial agenda		
Dimension 3 - Entrepreneurial Teaching and Learning: areas in which entrepreneurial development can take place and tools to deliver education and training opportunities		
Dimension 4 - Preparing and Supporting Entrepreneurs: ways in which HEIs can provide internal and external opportunities and expertise to support staff or students in their career development or enterprising individuals on their pathway to becoming an entrepreneur		
Dimension 5 - Digital Transformation and Capability: the institution's ability to integrate, optimise and transform digital technologies to support innovation and entrepreneurship		

Dimension 6 - Entrepreneurial Ecosystem and Networks: Building and sustaining relationship with key partners and collaborators to create value for the higher education institution and society		
Dimension 7 - The Internationalised Institution: the influence of the international environment on the entrepreneurial aspects of teaching, research, talent development, new opportuni- ties and culture		
Dimension 8 - Regional Impact of the Entrepreneurial HEI: areas a higher education institution might want to measure the impact of its activities to become more entrepreneurial / innovative / involved in the region		

Step 1D: Action Planning:

→ *Finally, based on the identified skill gaps, measures to develop the required skills at the Georgian universities can be defined.*

- Guiding questions:
  - Collaboratively develop an action plan outlining the steps needed to develop the missing skills and build the necessary infrastructure within HEIs.
  - Which stakeholders need to be involved in this process?

Table 3.3 – Action Planning

→ *Please go through the following dimensions and define measures to close the identified skills gap, elaborating also on the stakeholders that could be involved in this measure.*

Element of the HEI persona	Measures to tackle Identified Skill Gaps	Stakeholders to be involved
Dimension 1 - Leadership and Governance: in order to develop an entrepreneurial culture in an institution, strong leadership and good governance are crucial		
Dimension 2 - Organisational Capacity: People, Resources, Incentives and Rewards: key areas a higher education institution might wish to consider to minimise the organisational constraints to fulfilling its entrepreneurial agenda		
Dimension 3 - Entrepreneurial Teaching and Learning: areas in which entrepreneurial development can take place and tools to deliver education and training opportunities		
Dimension 4 - Preparing and Supporting Entrepreneurs: ways in which HEIs can provide internal and external opportunities and expertise to support staff or students in their career development or enterprising individuals on their pathway to becoming an entrepreneur		

Dimension 5 - Digital Transformation and Capability: the institution's ability to integrate, optimise and transform digital technologies to support innovation and entrepreneurship		
Dimension 6 - Entrepreneurial Ecosystem and Networks: Building and sustaining relationship with key partners and collaborators to create value for the higher education institution and society		
Dimension 7 - The Internationalised Institution: the influence of the international environment on the entrepreneurial aspects of teaching, research, talent development, new opportuni- ties and culture		
Dimension 8 - Regional Impact of the Entrepreneurial HEI: areas a higher education institution might want to measure the impact of its activities to become more entrepreneurial / innovative / involved in the region		

Dimensions of the HEINNOVATE Framework

Leadership and Governance



Entrepreneurial leadership and accountable governance are crucial to developing an entrepreneurial and innovative culture within an HEI. Such leadership defines entrepreneurship as a strategic priority and takes entrepreneurial and innovative practices from one-off experiment to an integrated approach that is core to how the HEI undertakes teaching, research and knowledge exchange.

1. Entrepreneurship and innovation are a major part of the HEI's strategy.

2. Leadership of the HEI demonstrates entrepreneurial attitude and competences that drive institutional change

3. There is a structure/system for coordinating and integrating entrepreneurial activities across the HEI to facilitate the implementation of the institutional entrepreneurial agenda.

4. The HEI encourages and supports faculties, departments, units, teams and individuals to act entrepreneurially.

5. The HEI is a driving force for entrepreneurship and innovation in regional, social, community development and addressing societal challenges.

Organisational Capacity: People, Resources, Incentives and Rewards



The organisational capacity of an HEI drives its ability to deliver on its entrepreneurial strategy. If an HEI is committed to carrying out entrepreneurial activities to support its strategic objectives, then key resources such as people, funding and investments, expertise and knowledge, reward and incentive systems need to be in place to sustain and grow its capacity for entrepreneurship and innovation.

1. Entrepreneurship and innovation are supported by the institutional culture and sustainable funding.

2. Building new relationships and synergies are fostered by supportive institutional policies.

3. The HEI engages, recruits and promotes individuals with entrepreneurial attitudes, behaviour and experience.

4. The HEI invests in staff training and development to support its entrepreneurial and innovative agenda.

5. Rewards, incentives and recognition in career progression are given to staff who actively support the entrepreneurial and innovative agenda of the HEI.

Entrepreneurial Teaching and Learning



Entrepreneurial teaching and learning involve exploring pedagogies, practices and flexible learning pathways to stimulate entrepreneurial mindsets in an inclusive and sustainable way. While the idea of creating a start-up remains a powerful and versatile pedagogical tool, entrepreneurship education is not just learning about how to transform an idea into a sustainable business. It is also about being exposed to entrepreneurial experiences and acquiring the skills and competences for developing an entrepreneurial mindset and equipping students to be able to contribute to addressing challenging issues such as sustainability and the UN Sustainable Development Goals (SDGs).

1. The HEI provides diverse formal learning opportunities including the use of flexible learning pathways to develop entrepreneurial mindsets and competences.

2. The HEI provides a wide range of informal learning opportunities and experiences to stimulate the development of entrepreneurial mindsets and competences.

3. The HEI validates and assesses entrepreneurial learning outcomes and impacts.

4. The HEI co-designs and delivers a curriculum with external stakeholders which responds to societal challenges.

5. Results of entrepreneurship research are integrated into teaching and learning activities.

Preparing and Supporting Entrepreneurs



HEIs can help students, graduates and staff consider starting a business as a career option. At the outset it is important to help individuals reflect on the commercial, social, environmental, and lifestyle objectives related to their entrepreneurial aspirations and intentions. For those who decide to proceed to start a business, or other type of venture, targeted assistance can then be offered in generating, evaluating and acting upon the idea, building the skills necessary for successful entrepreneurship, and importantly finding relevant team members and getting access to appropriate finance and effective networks. In offering such support, an HEI should ideally act as part of a wider business support ecosystem rather than operating in isolation.

1. The HEI increases awareness of entrepreneurship and stimulates the entrepreneurial intentions of students, graduates and staff to start-up a business or venture

2. The HEI supports its students, graduates and staff in starting, running and growing a business or new venture.

3. Mentoring and other forms of personal and entrepreneurial project development are offered.

4. The HEI offers or facilitates access to business incubation, acceleration, and financing.

5. Global challenges are reflected in the HEI's entrepreneurial initiatives.

Digital Transformation and Capability



HEIs are already deploying digital technologies, however the uptake and integration varies among and within institutions. HEIs should make the most out of the opportunities presented by digital transformation and consider digital technologies as a key enabler of innovation and entrepreneurship. An HEI's digital capability is defined as the ability to integrate, optimise and transform digital technologies to support innovation and entrepreneurship.

1. The HEI fosters a digital culture and implements and monitors a digital strategy supporting innovation and entrepreneurship.

2. The HEI invests in, manages and continuously improves a digital infrastructure that supports innovation and entrepreneurship.

3. The HEI actively supports the use of digital technologies to enhance quality and equity in entrepreneurial teaching, learning and assessment.

4. The HEI actively uses open educational resources, open science and open data practices to improve the performance of the institution and increase impact on its entrepreneurial ecosystem.

5. The HEI makes full use of its digital capacity to promote sustainable and inclusive innovation and entrepreneurship.

Entrepreneurial ecosystem and networks



An entrepreneurial and innovative HEI proactively connects with its ecosystem (intended as an array of interlinked actors pooling skills and resources to pursue a common goal) to deliver social, cultural and economic benefits. The capacity to connect with entrepreneurial ecosystems and networks represents an important catalyst for organisational innovation in the HEI. It also helps the advancement of teaching and research, and transforms the HEI into an important actor in regional development and issues related to territorial cohesion.

1. The HEI creates effective collaboration and enhances synergies with its entrepreneurial ecosystem and networks.

2. The HEI is an active partner in developing and implementing local and regional entrepreneurial and innovation strategies.

3. The HEI has strong links with incubators, accelerators, science parks and other external initiatives supporting the development of a sustainable entrepreneurial ecosystem.

4. The HEI integrates research, education and knowledge exchange to build resilient communities.

The Internationalised Institution



A sustainable entrepreneurial HEI integrates the international into the design and delivery of education, research, and knowledge exchange by introducing new questions, approaches and alternative ways of thinking. Through considering international societal challenges, including the UN SDGs, the entrepreneurial HEI is also better equipped to support its ecosystem.

1. The HEI reflects on global trends, societal and ecological challenges in its entrepreneurial agenda.

2. The HEI explicitly supports inclusive and sustainable forms of mobility of its staff and students.

3. The HEI's entrepreneurial agenda contributes to global and social cohesion, mitigation of climate change and the HEI carbon neutrality.

4. The HEI engages in deep transnational cooperation with other European HEIs. The HEI places European cooperation at the core of its strategy and considers it as a driver for creativity and innovation

5. The HEI pursues international engagement across all its activities: teaching, research and knowledge exchange to deliver impact at local, regional, national and international levels.

Impact of the entrepreneurial HEI



Entrepreneurial and innovative higher education institutions need to understand the impact of the changes they bring about. The entrepreneurial HEI combines institutional self-perception, external reflection and an evidence-based approach. An HEI that monitors the impact of all activities connected to the entrepreneurial and innovation agenda generates valuable information and data to be used to improve its own performance. Metrics should span beyond spin-off creation, the volume and quality of intellectual property generation and research income generation. Assessment activities should focus also on graduate entrepreneurship, skills and competence development, teaching and learning outcomes, talent retention, contribution to global, national and local economic development or the impact of the institution's broader entrepreneurial agenda.

1. The impact of the HEI's entrepreneurial activities is regularly assessed across all its activities.

2. The HEI assesses the impact of its entrepreneurial agenda with key performance indicators, narratives and dedicated assessment tools.

3. The performance indicators allow for comparisons with other national or international peers.

4. The learning generated from the assessment of impact drives the further development of the entrepreneurial and innovation activities of the HEI to enhance its future impact.

C. International Perspectives on the Future of HEI as Sustainable Changemakers (Step 2)

"What will a responsible and impactful HEI sector in Georgia look like in 2035?"

After having realized the foresight exercise at the respective Georgian universities, participants are invited to attend a workshop during which these local results are shared and interpreted as to develop a cross-regional perspective on the idealistic and the realistic scenarios.

D. Initial Assessment/Foresight of the Georgian Higher Education System

Georgian HEI ecosystem

Over the last 20 years Georgia has made impressive economic progress. With an average annual growth rate of 5.4%, Georgia has been classified as an upper middle-income country since 2019[2]. Sustaining this development pathway requires, however, a transformation of the education system such that it: (a) can deliver the necessary competencies for young population aligned with market needs, and (b) support the private sector in creating jobs through enhancing entrepreneurship and innovation.

Several challenges still remain. The set of skills acquired during their education remain poorly aligned with the changing needs of the industry[3]. In addition, skills shortage and mismatch with industry's needs leave Georgia with a high youth unemployment rate (28.2% in 2020) and unattractive working conditions[4]. The country's human capital potential remains untapped, with most labour resources being locked into low-productivity jobs[5]. The unfavourable employment situation affects young graduates, in particular. Overall, compared to peer countries, the Georgian higher education system has a lower economic return, hardly enhancing the employability or increasing the salaries of young degree holders[6]. Yet, higher education institutions (HEIs) play a key role paving the way for these talents, equipping them with the 21st century skills needed to enhance the cultural and economic welfare of a country. Specifically in Georgia, HEIs can play an important role to close the skills gap and foster an innovation-based and entrepreneurial education model.

Moreover, to align to global standards, Georgian HEIs must think beyond their core role in teaching and research and include the so called Third Mission, the "contribution to society" they impart through driving entrepreneurship and engaging for higher societal impact[7]. As such, HEIs, as providers of education, knowledge and research should become the core of an innovation ecosystem, engaging society, industry, and policymakers. The new centrality of universities comes along with the emergence

[2] World Bank (2020). Georgia: Towards green and resilient growth. Washington DC: World Bank.
[3] OECD (2019): OECD Reviews of Evaluation and Assessment in Education: Georgia. Chapter 1. The education system in Georgia.
[4] UNIDO (2020): Formulation of UNIDO Country Programming Framework for ISID in Georgia.
[5] World Bank (2018). Country partnership framework for Georgia for the period FY19-FY22. Washington DC: World Bank.
[6] Bochorishvili, E., Peranidze, N. (2020): Georgia's Education Sector. GALT & TAGGART, Industry Overview, July 2020.
[7] Compagnucci, L., Spigarelli, F. (2020): The Third Mission of the university: A systematic literature review on potentials and constraints. Technlogical Forecasting and Social Change, Volume 161.

of collaborative innovation cultures with shared values and aims, as well as joint strategies and common interests. That new role includes the orchestration of multi-actor innovation networks, such as the ecosystem surrounding the university[8].

Furthermore, the concept of equality and non-discrimination approach has been articulated in Georgia's legal framework and development strategies. Yet, achievement of gender-equality goals remain challenging mostly due to the cultural perception of women's role in society. The integration of gender (and social groups at risk) equality perspectives in national programmes for economic development and poverty reduction, as well as in job creation policies, can stimulate gender balance in the labour market, especially through entrepreneurial activities.

Addressing the challenges of unemployment, skills mismatch, and limited inclusion calls for more collaborative and interdisciplinary research and training programs. The focus shifts from purely technological innovation to systemic, challenge-driven innovation with special attention to societal impact. This happens in HEIs worldwide and is described by the term of an "engaged university". The Third Mission of a university thus comprises economic and technological innovations based on cooperation with industry but also the community outreach of innovations and other university activities. The well-being of society as well as the regional development grow in significance. Concrete goals of the engaged university are the improvements in welfare, knowledge sharing, educating students on political, social, and personal responsibility, and collaborating with local industries and transferring technology into practice[9]. In simple terms, HEIs in Georgia should become sustainable and contribute to decent jobs creation and responsible business innovations. Policy makers also have a strong role to play by initiating education system reform to improve the quality of and access to education across regions and social groups[10].

Concrete progress towards an engaged HEI ecosystem in Georgia has been initiated. Specifically, the following actions pave the way for future efforts: Development of a business-friendly environment with adequate investor protection; Significant improvement in institutional quality; Strong commitment to education, as shown, inter alia, by setting up the 'Georgia's Innovation and Technology Agency' (GITA); Good performance in attracting foreign investment; Good integration into international academic networks, resulting in foreign funding and internationally relevant publications; Introduction of an enterprise survey on national innovation activity; Vibrant start-up scene[11].

Still, there are many challenges ahead towards devising a fully functional engaged HEI ecosystem in Georgia: Improve the commercialization of scientific results and establish systematic industry-science linkages; Increase the incentives for the private sector to invest in R&D; Enhance the quality of the education system, particularly in science, technology, engineering and mathematics (STEM); Reduce and mitigate the mismatch of skills on the labour market; Promote higher levels of business sophistication, especially managerial practices, to allow for the absorption of new ideas; Increase overall innovation capacity.

[8] Reichtert, S. (2019): The Role of Universities in Regional Innovation Ecosystems. European University Association Study.
[9] Moussa, A., Kesting, T., and Clauss, T. (2019): Embedding Entrepreneurial and Engaged Universities – A Holistic View.
[10] UNIDO (2020): Formulation of UNIDO Country Programming Framework for ISID in Georgia.
[11] IPO (2022): https://unece.org/DAM/ANNEX_2_-_IPO_Country_Snapshots.pdf

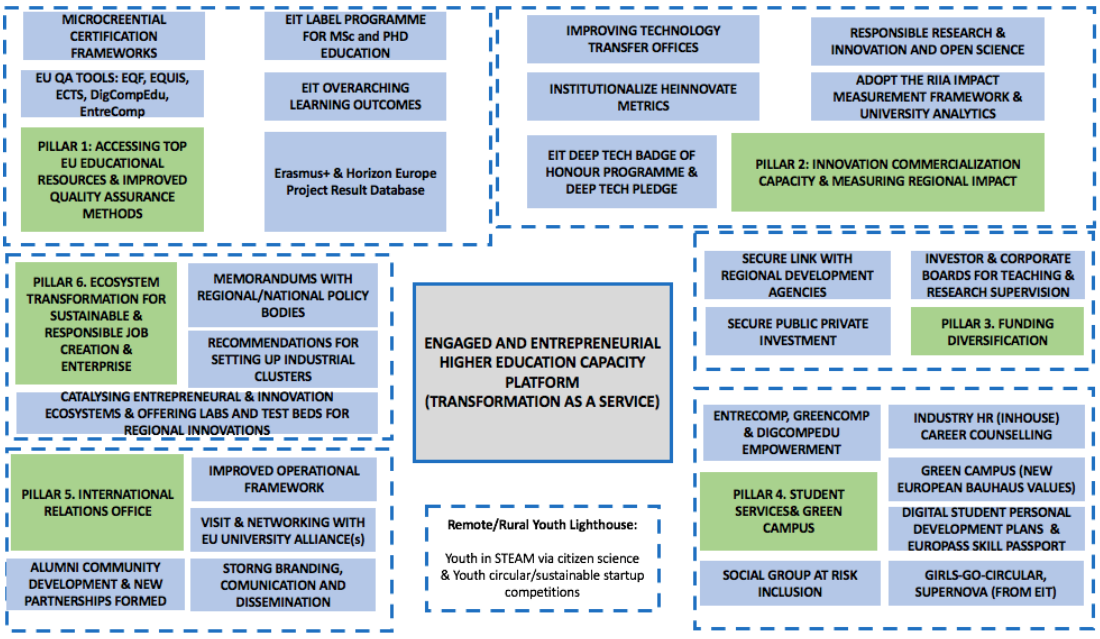
HEINNOVATE Assessment (preliminary) of the Georgian HEIs

In order to understand the institutional capacity of the participating HEIs (as a representative sample of Georgian HEIs), the HEINNOVATE assessment tool was applied. Each of the three HEIs undertook internal focus group workshops with higher management, academic and non-academic staff and did a holistic HEINNOVATE assessment. The results show a congruent lack of capacities tailored around the following HEINNOVATE pillars:

- Leadership and governance (required higher management training for change management and a more flexible governance structure); funding people and incentives (how to better reward excellence, diversify funding base and access public-private funds);
- Entrepreneurial teaching and learning (lack of skilled lecturers); preparing and supporting entrepreneurs (weak entrepreneurial support programmes for students, lack of support systems);
- Digital transformation capability (both for the university administration side as well as for teaching & learning), knowledge exchange and collaboration (industrial boards, knowing how to trigger quadruple helix movements, ecosystem mobilisation skills);
- Internationalisation (weak international relations offices and limited amount of international programmes – both teaching/learning and research); weak impact measurement (i.e. no university analytics, limited tracking of learning/progress, limited regional engagement).

Initial Recommendations – Piloting the RiHEI Approach to Solve Georgian HEI Ecosystem Needs

Based on the assessment results of the three Georgian HEIs, the following initial recommendations were developed.



Source: Own Illustration.

R1: Reform & modernise the university governance of Georgian HEIs to enable their transition to "engaged and entrepreneurial" universities and become regional sustainable and responsible (environmentally and socially) engines of enterprise and job creation by (the base value is for all the below items resides in very early stage/preparatory efforts across all domains):

- Introducing and/or reforming technology transfer offices in each HEI.
- Introduce HEINNOVATE as core university impact analytics and performance measurement framework and achieve 5% increase of externally-audited HEINNOVATE scores on a yearly basis.
- As a complement to HEINNOVATE, introduce the RIIA framework (by customising it for Georgia) in order to assess the economic impact of the HEIs within their regions and better align with the regional strengths/priorities of the government (to better facilitate public-private investment).
- Introducing responsible research and innovation[12] (RRI) as well as open science to ensure that the HEIs become regional producers of impactful innovations that respond to the market needs that boost the interest of young people in STEAM studies/innovation.
- Piloting public-private impact investment boards with representatives from industry, angel investment ecosystem and policy makers that are in charge of innovation funds.
- Join EIT's Deep Tech Pledge[13] towards motivating the Georgian HEIs to adopt Deep Tech programmes that would enhance graduates and staff with digital competences to enable business model/innovation transformation towards environmentally and socially sustainable outcomes.

R2: Enhance student services & greening campuses (student guidance, inclusion and employability support for social groups at risk from remote/rural areas, development of alumni portals/databases, counselling and job/entrepreneurial orientation) by actively coaching the Georgian HEIs towards:

- Embedding EntreComp principles into their entrepreneurial support systems.
- Set up industry-driven job counselling by developing university-industry partnerships through which industry HR staff will provide scheduled mentorship sessions for HEI students.
- Innovative demonstrations of career and skill guidance by adopting EIT Manufacturing's Teaching Factory[14] concepts through which batches of students are exposed to course delivery within company/industry premises.
- Development of digital student career/development profiles with badges and personalization that would enable skill-gap identification (and mitigation actions) for students that are keener to adopt a personalized education approach. Reliance will be made on the Europass Skills Passport framework[15].
- Training student support staff on DigComp/DigCompEdu competences to enable a more tailored and effective digital student support mechanism.
- Devise a hybrid strategy social group at risk inclusion and support in higher education (based on EU's Inclusion Strategy[16]) by enabling learners in difficulty (cultural, economic, social, disability, geographic/distance – i.e., rural/remote areas) to better access quality higher education and career support. This refers to: student recruitment bias, student support and

[12] RRI (2022), https://op.europa.eu/en/publication-detail/-/publication/ee9bacdf-fdad-46eb-8cd8-32879e310191/language-en
[13] Deep Tech Pledge (2022), https://www.eitdeeptechtalent.eu/the-pledge/
[14] EITM Teaching Factory (2022), https://www.eitmanufacturing.eu/what-we-do/education/resources/teaching-factory/
[15] EU Skills Passport Framework (2022), https://europa.eu/europass/en/what-europass-skills-passport
[16] EU Inclusion strategy (2022), https://erasmus-plus.ec.europa.eu/document/implementation-guidelines-erasmus-and-european-solidarity-corps-inclusion-and-diversity-strategy

inclusion in the learning process, non-discrimination actions, effective assessment support fi different needs.

- Inform university management about the New European Bauhaus Initiative[17] to pave the way for future green campuses.
- Organize start-up competitions for young people from remote areas and engage the already identified public-private impact investors in startup pitching sessions to provide feedback.

R3: Strengthen international relations offices and improve internationalisation strategies that would enable an increased capacity for inclusive student support and student or staff mobility. This will be achieved by:

- Improving the existing international relations strategies of the participating Georgian HEIs with competences related to: inclusion of social groups at risk (and/or from rural/remote areas) via mobility tools, building international networks of HEIs; understanding how to set up Erasmus Charters, engaging in Erasmus+ projects (mobility and cooperation partnerships), international student recruitment, international R&D projects, agile project management methodologies, internalization at home, brand awareness raising, communication and dissemination, maintaining alumni networks and developing international communities.
- International visit (in the EU) at the European University Alliances[18]
- Development of partnerships for international relationship cooperation (with EU counterparts) during the project lifecycle (related to student/staff mobility, mentorship, R&D).

R4: Establishing new quality assurance units and processes/strategy within HEIs that would increase the capacity and effectiveness of planning and evaluation units while providing better support for social groups at risk from remote/rural areas;

- Set-up, institutionalise and operationalise guidelines for quality assurance units that would upgrade/replace the existing ones with regards to: teaching and learner certification systems via: EQF ,ETF, ECTS; Higher education management procedures (EQUIS); yearly staff training and appraisal mechanisms (a blend of teaching, research and funding acquisition for income diversification and better value production).
- Development and introduction of university administration analytics that would monitor quality, student satisfaction, financial management, environmental/social impact, and that would facilitate a better insight into a more flexible and resourceful HEI apparatus.
- Develop a quality framework for issuing micro-credentials[19] towards enabling a more industry/skill-oriented learning pathway.

[17] New European Bauhaus (2022), https://new-european-Bauhaus.europa.eu/index_en
[18] EU University Alliance (2022), https://education.ec.europa.eu/education-levels/higher-education/european-universities-initiative
[19] Microcredentials (2022), https://education.ec.europa.eu/education-levels/higher-education/micro-credentials

E. Areas of future competences and skills for Georgian HEIs identified through the foresight process

The RiHEI strategic foresight consisted of a series of 3 foresight workshops that have been organized in Georgia by the three Georgian project partners. TUM International has led the process and significantly contributed to enhancing the educational framework in Georgia. These workshops aimed to pinpoint future competencies and skills needed by Georgian Higher Education Institutions (HEIs). During this strategic sessions, participants developed two scenarios for 2035: an "Idealistic" scenario envisioning an optimal future, and a "Realistic" scenario that considers likely practical outcomes. These exercises not only identified current skill gaps in the Georgian HEI system but also led to the formulation of targeted measures to bridge these gaps, ensuring a forward-looking approach to higher education in Georgia and will support the definition of HEI capacity profiles. This will feed into better shaping the capacity building content of the RiHEI project to ensure that the provided competences and skills reflect the future realm of Georgian HEIs.

Scenario 1 – Idealistic Scenario

Dimension 1 (Leadership and Governance)

Dimension 1, Leadership and Governance, emphasizes the importance of cultivating a **high-level entrepreneurial culture**, bolstered by strong **leadership** within the institution. Additionally, the **high qualification of both employers and job seekers** is crucial for success in this area.

Dimension 2 (Organisational Capacity: People, Resources, Incentives and Rewards)

Internationalization, funding opportunities, and robust communication with the business sector are key components that contribute to the overall success and growth of an organization.

Dimension 3 (Entrepreneurial Teaching and Learning)

Networking with other entrepreneurs on both local and international levels, coupled with a **commitment to life-long learning**, plays a pivotal role in cultivating a vibrant entrepreneurial ecosystem. Moreover, securing funding through state and international programs for small enterprises, along with providing **training courses in the basics of entrepreneurship,** are crucial for nurturing business growth and development.

Dimension 4 (Preparing and Supporting Entrepreneurs)

Sharing the experiences of partner universities that have successfully developed an entrepreneurial culture enhances learning and development across institutions. Additionally, offering specialized **training courses** and **promoting startups** developed by staff and students are vital for fostering innovation and entrepreneurship within the academic community.

Dimension 5 (Digital Transformation and Capability)

The idealistic scenario of Dimension 5, Digital Transformation and Capability, focuses on the **integration of developed technology trends** that are transforming higher education landscapes.

Dimension 6 (Entrepreneurial Ecosystem and Networks)

Under Dimension 6, the idealistic scenario envisions a **close connection between Higher Education Institutions (HEIs) and businesses, with internships readily offered to students to strengthen this relationship.**

Dimension 7 (The Internationalised Institution)

Joint entrepreneurial projects and startups foster a collaborative spirit, while local small entrepreneurs attending important international fairs highlight a commitment to global engagement. Plus, a wide range of networking opportunities further supports the growth and development of these entrepreneurial initiatives, especially thinking of an idealistic scenario for Georgian HEIs in terms of internationalization.

Dimension 8 (Regional Impact of the Entrepreneurial HEI)

The universities in Georgia boast a highly developed startup and innovation ecosystem, with businesses actively participating in the academic process and a large number of internships available to students. This brings an immense value to the regions. Furthermore, the internationalization and promotion of entrepreneurial and innovative projects are key priorities, enhancing the global reach and impact of these initiatives.

Scenario 2 - Realistic Scenario

Dimension 1 (Leadership and Governance)

Current State in Georgia:

During the foresight workshops, the Georgian universities affirmed that their leadership is highly qualified and fully dedicated to embracing innovations, new technologies, and the ongoing development of their institutions.

Identfied Skill Gaps:

The **national entrance exams** for admission to Higher Education Institutions (HEIs) in Georgia, introduced in 2005 to eliminate corruption, **are now considered outdated**. Universities only meet their incoming students after these exams, receiving the list of students just a few weeks before the academic year begins. This delay creates significant challenges, contributing to skills gaps as **students enter university unprepared and often struggle academically.** Additionally, the funding model for HEIs, which primarily relies on tuition fees paid by the state or families, exacerbates the problem. High dropout rates can lead to financial instability for institutions, prompting them to tolerate low student performance to maintain income. Ultimately, this cycle adversely affects the preparation of graduates who are expected to meet labor market demands, particularly in institutions dependent on tuition fees.

Dimension 2 (Organisational Capacity: People, Resources, Incentives and Rewards)

Current State in Georgia:

Entrepreneurship is a relatively new concept in Georgia, which remained under Soviet rule for over 70 years until the early 1990s. As a result, the culture of entrepreneurship is still underdeveloped, and the Georgian business landscape is in its nascent stages. **Many business owners started their ventures as**

amateurs, lacking formal business education. This lack of expertise is evident in their organizational capacities, particularly in how businesses engage and collaborate with academic institutions.

Identified Skill Gaps:

Higher Education Institutions (HEIs) in Georgia face **significant human resource challenges, as relatively low salaries in academia make it difficult to attract well-prepared professionals, particularly for administrative roles.**

Dimension 3 (Entrepreneurial Teaching and Learning)

Current State in Georgia:

Entrepreneurial teaching and learning within Higher Education Institutions (HEIs) in Georgia is diversified, with offerings ranging from standalone courses to integrated curriculum components across disciplines.

Identified Skill Gaps:

Georgia faces a **shortage of professors proficient in teaching entrepreneurship, hindering the development of robust entrepreneurial education initiatives within the region's academic institutions.**

Dimension 4 (Preparing and Supporting Entrepreneurs)

Current State in Georgia:

In Georgia, entrepreneurial ventures receive funding, alongside the organization of job fairs attended by established entrepreneurs and companies. Moreover, there's support for fostering connections between businesses and state authorities. Additionally, Higher Education Institutions (HEIs) are proactively pursuing international funding opportunities to drive entrepreneurial growth within the region.

Identified Skill Gaps:

Identified skill gaps include the **need for further integration of entrepreneurial education into curricula and the exploration of international funding avenues.** These gaps highlight areas where targeted efforts can enhance the entrepreneurial ecosystem and support the development of aspiring entrepreneurs.

Dimension 5 (Digital Transformation and Capability)

Current State in Georgia:

In the realm of digital transformation and capability, Georgian HEIs, especially KIU, is dedicated to advancing technologies within the study process and environment. As the institutions strive to become a technology hub in the region, this endeavor stands as a top priority.

Identified Skill Gaps:

Skill gaps in digital transformation and capability include the **need to enhance accessibility to new technologies and to establish robust technical support systems, alongside ensuring a qualified staff pool and exploring diverse funding options to support technological advancements effectively.**

Dimension 6 (Entrepreneurial Ecosystem and Networks)

Current State in Georgia:
In Georgia, HEIs are fostering enduring partnerships with local businesses, state authorities, international organizations, sponsors, and both local and international universities and research institutions, facilitating collaborative innovation and knowledge exchange. Especially at KIU, these sustained relationships are integral to KIU's commitment to fostering a dynamic ecosystem for entrepreneurship and research.

Identified Skill Gaps:
Georgian HEIs face **challenges in finding administrators capable of developing innovation ecosystems and entrepreneurship networks. The entrepreneurial mindset and experience in building up a strong innovation ecosystem is therefore an identified skill gap.**

Dimension 7 (The Internationalised Institution)

Current State in Georgia:

The international environment at some Georgian HEIs has a highly positive impact on both staff and students, as exposure to international professors and education significantly motivates them to think and create on a global scale.

Identified Skill Gaps:
To address skill gaps, there's a **pressing need for increased recruitment of international professors, fostering more academic partnerships and research collaborations globally, as well as expanding exchange and double degree programs.**

Dimension 8 (Regional Impact of the Entrepreneurial HEI)

Current State in Georgia:

Some of the regions in Georgia, especially the Imereti region (home to Kutaisi), were once thriving industrial centers in Georgia during the Soviet era. However, following the dissolution of the Soviet Union, many factories and plants closed down, struggling to adapt to Georgia's new reality. Presently, majority of businesses operate from Tbilisi or Batumi, limiting industry partnerships for HEIs in more rural regions. Despite this, a few universities in Georgia have actively engaged with industry partners, though the majority are based in Tbilisi with only a few local partners.

Identified Skill Gaps:
The skills gap identified here mirrors those observed in the aforementioned areas. There is a need for university personnel to build up the attractiveness of regions that are not yet industrial hotspots.

Skill Gaps and concrete measures to tackle them

Based on the self-assessment of RiHEI partner universities in Georgia as well as the foresight workshops that they conducted, the following graph summarizes the skills gaps that were identified across the 8 HEIINNOVATE dimensions as well as the recommended measures to address those skills gaps.

1. Leadership and Governance	2. Organizational Capacity	3. Entrepreneurial Teaching and Learning	4. Preparing and Supporting Entrepreneurs	5. Digital Transformation and Capability	6. Entrepreneurial Ecosystem and Networks	7. The Internationalised Institution	8. Regional Impact of the Entrepreneurial HEI
Skills Gaps • Insufficient flexibility of staff to adapt to changes • Need for upskilling in the areas of incentive mechanisms and fundraising	**Skills Gaps** • Weak networking and communication skills in many universities, particularly with regards to relations with business sector	**Skills Gaps** • Shortage of entrepreneurship professors • Lack of entrepreneurial culture in teaching faculty	**Skills Gaps** • Start-up founders often lack business know-how • Salary levels in academia not attractive for many business professionals to become entrepreneurship teachers • Weak entrepreneurial support programmes	**Skills Gaps** • Majority of university administration and faculty with insufficient digital skills	**Skills Gaps** • Lack of administrators capable of developing innovation ecosystems and entrepreneurship networks • Insufficient networking with entrepreneurs	**Skills Gaps** • Insufficient amount of faculty with international experience and mindset • Weak international relations offices • Limited amount of international programmes	**Skills Gaps** • Weak skills with regards to impact measurement
Measures • Introduce reforming technology transfer offices • Revise entrance exams to ensure sufficient level of prior knowledge • Join EIT's Deep Tech Pledge	**Measures** • Pilot public-private impact investment boards with representatives from industry, angel investment ecosystem and policy makers • Set up industry-driven job counselling • Inform about New European Bauhaus Initiative for green campuses • Establish new quality assurance units	**Measures** • Deliver basic training courses on entrepreneurship • Foster international teaching and learning partnerships in entrepreneurship • Develop digital student career/development profiles to steer entrepreneurial learning journeys • Develop a quality framework for issuing micro-credentials	**Measures** • Stronger integration of entrepreneurial education into curricula • Explore international funding avenues for entrepreneurship education • Embed and apply EntreComp	**Measures** • Strengthen skills to enhance access to technologies and establish robust technical support systems • Ensure qualified staff pool • Explore funding options to support technological advancements effectively • DigComp/DigComp Edu trainings	**Measures** • Organize Start-up competitions for young people from remote areas and engage public-private impact investors • Promote start-ups developed by staff and students more intensively	**Measures** • Recruitment of international faculty to foster global mindset in Georgia • Improve international relations strategies to become more inclusive, effective in fundraising, recruiting students, etc. • Visit European University Alliances • Develop partnerships	**Measures** • Introduce HEINNOVATE / RIIA as core university impact analytics and performance measurement framework • Introduce Responsible Research and Innovation (RII) • Devise social groups at risk inclusion strategy • Develop/ introduce university administration analytics

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KUTAISI INTERNATIONAL UNIVERSITY

RiHEI



Co-funded by the European Union

CC BY NC SA

Project Number: 101125355 (ERASMUS-EDU-2023-CBHE)

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.