



Regional Conferences on Transformation of Higher Education in Agriculture (November–December 2023)

Synthesis

Background

The Collective Action (CA) on Transformative Learning of Higher Education in Agriculture and related Subjects (CA) is a global action that aims to harvest and document the ongoing efforts to support the transformation of higher education for improved agrifood system transformation. It promotes the model of higher education based on experiential learning, ethical leadership, participatory curricula development, and co-research/co-innovation, with multi-actor participation, particularly of farmers and their organizations. It is currently taking place in four regions – Europe, Africa, Asia–Pacific, and Latin America.

The CA and its activities, such as the regional conferences, is facilitated by the Global Forum on Agricultural Research and Innovation (GFAR) with support of the European Commission’s DeSIRA funding. It is coordinated by the Asia–Pacific Association of Agricultural Research Institutions (APAARI), and implemented in partnership with the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM); Global Forum for Rural Advisory Services (GFRAS); the European Forum on Agricultural Research for Development (EFARD); Global Confederation of Higher Education Associations for Agricultural and Life Sciences (GCHERA); Promoting local innovation in ecologically oriented agriculture and natural resource management (Prolinnova).

Between November and December 2024, the CA’s partners coordinated a number of regional conferences on transforming higher education in agriculture as follows:

- **Latin America** –27 November 2023 – organized by GCHERA
- **Africa** – 30 November 2023 – organized by RUFORUM in collaboration with GFRAS
- **Europe** – 12 December 2023 – organized by Prolinnova, in collaboration with EFARD
- **Asia–Pacific** – 18 December 2023 – organized by APAARI.

The purpose was to present and discuss:

- **Survey insights:** Learn about the key findings from recent surveys, which will provide valuable insights on the status of transformation of higher education in the region
- **Sharing of good practices:** Learn about innovative transformative education practices that are being integrated in higher education
- **Interactive multi-actor discussions:** Learn about the outcomes of a Working Group on Transforming Higher Education and engage in a discussion on improving the integration of functional capacities (soft skills), innovative partnerships and enabling policies
- **Theory of change:** Learn about the transformative learning framework, how this CA will contribute to the transformation of higher education, and how your university can engage
- **Future project design:** Discuss the next steps of the CA and a full project design in 2024

Education transformation means developing researchers and professors with a different mentality of how to create a value, work in agriculture and innovate within the value chain system.

The overall objective of the e-conferences was to present the CA to the wider audience of the higher education community in the four regions, with the aim to:

- motivate the participants to share their experiences
- raise awareness of the case of success that the CA will seek to build upon
- strengthen the understanding of the need for change and accelerate progress to agrifood system transformation and achievement of the SDGs.

The conferences gathered agricultural life-science universities, leaders (university vice-chancellors, university presidents, deans, faculties, professional bodies, student union leaders, education ministers, accreditation agencies), graduates, students, and other professionals supporting efforts in the transformation of higher education in agriculture to participate in these regional conferences and contribute to the CA.

About the Collective Action on Transforming Higher Education in Agriculture

In each regional conference, GFAR – Dr Hildegard Lignau, Executive Secretary, and/or Mr Karim Hussein, Strategic Advisor – provided a brief overview on the rationale behind this CA on Transforming Higher Education in Agriculture, since it is the overall coordinator of this CA.

About GFAR/GFAiR

GFAR will be changing to GFAiR (integration of “i”) in the near future to reflect the centrality of innovation, equality and fairness in the agrifood systems as a driving force of sustainable development and transformation. It is a global network of networks with more than 900 members from 13 constituencies from farmer organizations to non-governmental organizations (NGOs), research organizations, National Agricultural Research Systems (NARS), and regional fora that have always been at the heart of GFAR. All of these actors are united in GFAR’s commitment to make the agrifood research and innovation system more effective, responsive and equitable towards achieving the Sustainable Development Goals (SDGs).

Global challenges

Collectively, we need to put the effort of transformation into the context of the complex and rapidly changing world affected by numerous challenges and risks. These include the COVID 19 pandemic and its aftermath; the violent conflicts and instabilities in the different regions, and the deepening climate crisis. Population growth (and the increasingly younger world) is both an opportunity but also a challenge. In addition, lack of access to nutritious food, animal feed, fuel, fertilizers and finance have pushed many small- and medium-income people into hunger and poverty, thus creating significant social and economic insecurity. These factors affect the most vulnerable small producers, especially women, youth and people living with disabilities – those that we are very much concerned with in the rural transformation. In this context, a renewed agrifood research and innovation system is needed to respond to the challenges. Agriculture clearly remains an important sector to produce nutritious food for all, sustain livelihoods, generating income and being a motive for inclusive and environmentally sustainable national systems.

Need for transformed education system

In this context, it is vital that higher education in agriculture and related subjects is transformed to equip students with knowledge and skills to enable them to respond to current and future challenges. This requires innovative ways of teaching, learning and pedagogy. It also underlines the importance of

developing more effective and integrated education systems that go beyond the basics of agriculture, food and natural resource management.

Purpose of the Collective Action

The GFAR Collective Action implemented with a range of partners seeks to address these issues through the transformation of high educational learning in agriculture and related subjects. It seeks to improve the skills and the effectiveness of agriculture professionals to enhance their employability, agricultural entrepreneurship and leadership in AIS (agricultural innovation systems). This is envisioned to contribute to agrifood systems transformation and livelihood improvement of small-scale producers, family farmers, rural communities and others. The CA promotes higher education based on experiential learning, ethical leadership, participatory curricula development, co-research and co-innovation with multi-actor participation, especially of farmers and their organization.

Multi-sector approach

The CA is based on the understanding that agriculture needs to be studied alongside other sectors and disciplines, such as health, nutrition, biosciences, engineering, and environmental sciences. It requires students' engagements with businesses, with societies and communities and small-scale producers in particular. It requires values and ethics that contribute to inclusive transformation of rural food systems.

Setting the Stage: Transformation of Higher Education in Agriculture – a trajectory of the future

To set the stage of each regional conference, Ms Martina Spisiakova, Strategy and Innovation Coordinator, APAARI, provided an overview of the outcomes from the Working Group (WG) on Transforming Higher Education Facilitated by the Tropical Agriculture Platform (TAP) hosted by the Food and Agriculture Organization of the United Nations (FAO) that is working in synergy with GFAR's Collective Action on Transforming Higher Education. The WG's objective was to explore and elaborate on the opportunities to promote institutional innovation in higher education institutions to build their capacities for impact- and practice-oriented agricultural education. Thereby, it aimed to provide substantive and evidence-based knowledge to feed into decision and policy making in order to influence change.

The WG was based on some key principles that are aligned to the CA, namely: the need to integrate functional capacity/soft skills development (experiential learning, critical thinking, ethical leadership, multi-actor collaboration, engagement with communities through co-innovation and co-research) in university curricula. The participants included representatives of Asia-Pacific universities, and key interregional partners from Africa, Europe and Latin America.

Key challenges

The key challenges facing higher education in agriculture include the lack of alignment of education with the AIS thinking, which is affecting:

- **Education relevance** to AIS with too much focus on the development of technical and R&D capacities and theory, and poor integration of soft skills and interdisciplinary approaches
- **Education quality** – narrow mindset, outdated education approaches and methods, limited multi-actor collaboration (co-research and co-innovation) and community engagement
- **Education governance** – policy incoherence, politically appointed posts, investment trends emphasizing higher public investment (India) versus Thailand that is cutting its public funding on education
- **Alignment with the SDGs** – poor reflection on and monitoring university contributions to the Goals.

For example, Thailand has faced a policy challenge since 2022 when its government announced that it will no longer fully fund Thai universities, and they need to generate their own funding. This provided both a challenge and an opportunity for small universities to engage in collaboration and partnerships to overcome the funding challenges and sustain themselves. An example is the Chulalongkorn University in Bangkok that has multiple income streams, e.g. from MA and PhD programmes, its own hospital, parking, shopping plazas, and dormitories. This points to the need to integrate a new way of thinking: how to bring about university transformation and the change of curricula with limited resources.

In Africa, the number of graduates that get absorbed by the labour market seems lower than in other regions. The likelihood of employment of youth with a diploma is higher than for youth with a university degree, which results in a youth preference for technical and vocational education and training (TVET). As such, the cost–benefit of four-year university education is questioned, which requires more research/data to provide evidence to support a more systematic change process in education.

Capacities for innovation

The WG found that capacities for innovation are mostly facilitated or driven by non-academic institutions. For example, at the global level it is GFAR that is facilitating the CA; GCHERA that is undertaking global and regional advocacy and capacity development towards transforming higher education based on the model of Earth University in Costa Rica; GFRAS is promoting education through rural advisory services; and TAP is scaling up the Common Framework on Capacity Development for AIS to build capacities for innovation. At the sub-regional level, the Southeast Asia Regional Center for Graduate Study and Research in Agriculture (SEARCA) is supporting capacity development initiatives to develop institutional capacities of universities that are strategic to play a vital role in their countries' socioeconomic development. At the regional level, key players include APAARI, RUFORUM and EFARD. International agricultural research organizations are increasingly integrated student-scientist collaborations through projects based on co-innovation and co-design. Lastly, international projects funded by donors such as the European Commission and the World Bank are operating at different levels, e.g. the National Agricultural Higher Education Project (NAHEP) in India.

Evidence of the different cases of transformation shows that changes are already happening at different universities. Increased opportunities are being created for empowering university students, with examples of curricula revisions with integration of innovative pedagogical tools, experiential learning, private sector collaboration in agribusiness education, civic engagement, innovative ways of engaging with farmers – co-innovation and co-research. However, even though the impact is visible, this integration is not practical and systematic. It requires consistent collaboration mechanism that would integrate the innovative pedagogical requirements in university curriculum and ensure their continuity.

Recommendations for promoting systematic change processes

Understanding the need and commitment to institutional change Institutional change is crucial to address the disconnect between and within universities, between ministries in charge of development and those in charge of education, between universities and communities, industry and other innovation actors. Regular discussions within and between universities and other innovation actors need to take place to make university/faculty leadership aware of the challenges in their current education system, and convince them of the benefits of transformation. This is crucial to make the necessary commitment to change, and communicate this commitment across the university, to staff, faculty, and students. A systemic vision and programmes instilling the change across the curriculum need to be communicated across universities, supported by simultaneous policy dialogue and cultural change to make the transformation sustainable.

Modernization of higher education to enhance innovation Re-orientation of academia needs to take place through building soft skills of university staff, adapting and incorporating processes, which allows the development of skills that are relevant for the labour market. Systematic capacity development of faculty is needed, e.g. competencies for advancing courses, new curricula development concepts that

include the realignment of technical subjects to the needs of the market, improving motivation, which need to be supported by success stories and case studies of the benefits to students and impact on the ground. Mainstreaming soft skill development in agricultural education programmes (instead of keeping it separate from technical content) requires building of understanding on how such improved skills can complement technical expertise with more relevance and demand-driven knowledge and competencies. Experiential and active-based learning needs to be at the centre of the transformation process, actively involving students in the learning process, making them responsible for their own learning. Building emotional intelligence of students and faculty needs to be integrated in the pedagogy and training to make the transformation at universities sustainable. Government support is crucial to ensure university autonomy to implement change programmes. Furthermore, the current university business model that relies on public funding needs to change towards the generation of own resources.

Improving collaboration Combining resources of different universities to generate improved research outputs and opportunities can lead to more effective resource management, collaboration and reduced duplication of knowledge outputs. Co-research and co-innovation should be the way forward to enhance the impact of R&D, by investing in research that is directly productive and visible. Research should focus on problem solving through co-innovation to better integrate the issues of farmers and communities. This requires systematic engagement with local communities and interdisciplinarity that must be integrated in education to enable students to better address community issues, communicate and apply technical skills, all to be based on trust and respect.

Change of culture Institutional change programmes supported by appropriate incentives, leadership and mindsets need to be introduced as they are instrumental for building a learning culture that is propagated within the universities. Faculty members need to become the facilitators of learning, guiding the learning process, rather than teaching, as well as setting direction and learning outcomes while involving students in this process. Innovative thinking needs to be rewarded at all educational levels. Reward mechanisms and innovative policies need to move away from rewarding individual work and publications, towards encouraging faculty members and researchers to engage in collective learning, teamwork, knowledge sharing, and collaborative research and innovation with communities to seek new answers to the challenges confronting the agricultural sector and rural communities. University leaders and staff (champions) that are open to change and can make a huge impact on students need to be identified to lead and facilitate the transformation process, along with institutional incentives and policy support.

Monitoring and alignment with the SDGs Formal and informal monitoring mechanisms need to be developed to document evidence of the competencies that make graduates excel, and to evaluate what learning took place. The demonstration of this impact is necessary to raise support of other university leaders and faculty members to reformulate their learning objectives and put students at the centre. Evidence is required by policy makers to enable them to implement policy changes for rewarding innovative faculty members, co-innovation and co-research with communities as opposed to individual research.

Latin America

The first Regional Conference on Transforming Higher Education was held in Latin America on the 27 November 2024. Over 107 people registered for the Conference and almost 70 participated. There was a very strong participation from Mexico, but wide participation across Latin America and the Caribbean, including Argentina, Barbados, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Haiti, Nicaragua, Panama, Peru, Puerto Rico, and Uruguay. There were also participants from Africa, Asia and Europe.

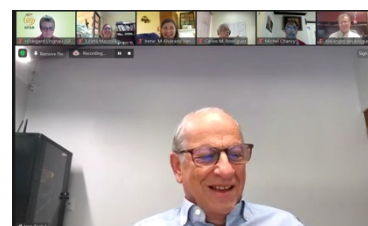
Opening the Conference

Dr Hildegard Lignau, Executive Secretary, GFAR, shared her welcoming remarks stressing the importance of higher educational systems in agriculture and the need to prepare students with the knowledge and abilities needed for them to confront the present and future challenge, which requires innovative reforms in teaching and learning and innovative pedagogy. The Collective Action on Transforming Higher Education in Agriculture was created to address these challenges.



Particularly, it aims to improve the abilities of agricultural professionals to increase their employability, agricultural entrepreneurial spirit, and leadership in the agricultural innovation systems that contribute to the transformation of the sustainable agrifood systems and the interest of small producers and family farmers, rural communities, and other organizations. Dr Lignau challenged educational institutions to reflect on whether they are preparing their graduates in agriculture to be successful change agents, ready to address the challenges of agriculture and rural development.

Dr Jose Zaglul, President, GCHERA, and founding President of EARTH University, Costa Rica, shared why this topic is important to GCHERA and how it has been involved in the transformation of higher education since 2018 and before during its period of inception. He shared his vision of the need for a more inclusive education system that is interdisciplinary, encouraging students to choose to study agriculture as a profession that offers many opportunities and that allows us to transform society and produce food more sustainably. Dr Zaglul shared his concerns around the fact that the post-pandemic era can be characterized by violence, inequity and a world at war. Educators in agriculture should emphasize the ethical education of our graduates, to seek to educate humanistic professionals, with honesty, respect, as entrepreneurs that seek economic return but that respect the environment and other humans, without harming them, to seek to help everyone improve, with win-win solutions. Special attention should be paid to the small agricultural producers and their families that have often been left abandoned, ending in greater poverty and inequity among other problems. We have the responsibility, opportunity and privilege to be the educators of future leaders. This Collective Action will provide opportunities to learn, share, and comment on the experiences and impacts from everyone's efforts to transform the world through university systems that create the change agents that will lead us down the right path.



Survey results

In September 2024, the CA launched a survey to take stock of the different education models that are “transformative” in the ways they are preparing graduates to face the realities of farmers and the needs of agrifood systems, as well as to assess the current status of transformation across the four regions involved. The survey sought feedback on the efforts of transforming higher education, the successes gained, and the challenges that the universities have confronted as part of the transformation process.

Dr Jim French, the GCHERA Secretary General and the Conference moderator, introduced the conference by presenting the survey results from Latin America. The information provided was very rich and highlights many key areas critical to inform others on the issues that should be considered as part of a transformation process.

Through the survey, the CA reached out to universities participating in university transformation processes and others to gain feedback on several aspects of the transformation process at their institutions. There were twelve respondents from the Latin American region, primarily from Mexico (ten) where the Transforming Higher Education project led by the American University of Beirut, and funded by the Kellogg Foundation has focused its efforts. Two respondents came from Costa Rica and Peru. (ref. full Survey report)



Transformative education practices in agriculture

The conference presented four specific cases of universities that have been undergoing transformation efforts in line with this CA. Each case highlights different parts of their efforts to implement the transformation in their colleges or faculties of agriculture, and in one case across the entire institution. Three of these cases are from México (public institutions), and one is from Haiti's private university.

ITESCAM's talent in synergy with communities, Dr Mario Benhur Chuc, Instituto Tecnológico Superior de Calkiní, México (ITESCAM), México

ITESCAM has followed various innovative processes of the inclusion of experiential learning as a key component of its educational model. It also created a learning ecosystem of their students through community engagement as part of a systematic process beginning in the first year, through the final year as part of student residences or internships. Based on this experience, Dr Chuc shared the rich experiences on what students learn from the communities, how they learn from them to improve the problem-solving research that benefits the communities, as well as applying theoretical skills to real life situations in support of these communities. These innovative and transformative education practices will be reflected in the CA's case study compilation.

Participatory research for the economic transformation of rural areas of Haiti, Dr Gael Pressoir, Université de Quisqueya (UniQ), Haiti

The transformation of the educational model at UniQ seeks to educate agents of change by applying the five elements of success – experiential learning, community engagement, value-based education, entrepreneurship, and conflict resolution through dialogue. UniQ sees that the role of the university is to also act as an agent of change to contribute to a more sustainable, equitable, and developed rural community. Dr Pressoir shared the UniQ experience in integrating faculty research on community problems, the integration of farmers as partners in the process, and the inclusion of students as part of their experiential learning. He shared how students integrate theoretical concepts learned in other classes, how they learn from their management of the field plots, and analyse the results with their professors and farmers. They develop communication skills, learn to understand, and respect the farmers and their challenges, and how they can work together to improve the quality of life of the farm family. These innovative and transformative education practices will be documented in the future.

Transforming Higher Education: In search of effective strategies, Mr Daniel Alberto Panti González, Instituto Tecnológico Superior de Hopelchén, México

The Hopelchén Technological Institute of Higher Education seeks to systematically integrate the five elements of success into their educational system (detailed previously by UniQ). The university

leadership's vision is to seek transformative change broadly across all three of their academic programmes, namely, sustainable agriculture innovation, business administration, and informatics. To achieve effective transformation, it has developed change strategies involving the entire university, with different strategies for the administrative personnel, faculty and students, recognizing the need to treat each group differently to achieve effective communication, involvement, and implementation by each group. As part of the institutional planning, each administrative unit must relate each planned action to the five elements of success (experiential learning, community engagement, entrepreneurship, ethical leadership, and conflict resolution) specifying the expected effects and impacts of each action. For the faculty, each professor is expected to become an agent of change him/herself and to share what he/she is doing with the community. Professors are being evaluated based on their contributions to the change process. The differentiated strategies have permitted them to be more effective and systematic in creating the desired changes envisioned at the highest levels within the university. These innovative and transformative education practices will be reflected in this CA's case study compilation.

The transformation process as an integral axis of university change, Ms María Concepción Lara Gómez, Instituto Nacional de México – Campus Conkal

The Technological Institute of Mexico Conkal Campus seeks to train agents of change in agriculture with leadership, solid technical and scientific knowledge, ethical values, and an entrepreneurial spirit committed to society and the environment. Its mission is to comprehensively train competitive professionals in science, technology and other areas of knowledge, committed to the economic, social, cultural development and sustainability of the country. The university initiated the change process four years ago, and have achieved measurable results, including a notable increase in the number of students entering its agricultural programme. Other changes that have taken place internally include more interdisciplinary, collaborative work between professors and across departments, more focused agreements with community actors, and reactivation of practical field sites and practices. The university has also observed a more entrepreneurial and active growth of students since the implementation of the changes. The change process for each of the five elements of success is led by faculty committees, and the professors have become more engaged in the process because of the observed impacts and positive feedback from students. Other departments, observing the impact of the transformation, are requesting participation in the process, including the opportunity to include more experiential learning actions as part of their curriculum. They see positive effects on the students as change agents as they are demonstrating the competencies that society requires and demands. They plan to evaluate these as the first group of students experiencing the transformative educational process will soon graduate. They now seek to institutionalize the change process incorporating each coordinating committee into their official structure. These innovative and transformative education practices will be documented in the future.

Innovative, transformative educational models and the impact of soft skill development

The EARTH University shared experiences of various education agents of change, particularly focused on soft skill development, as well as their evaluation of success. The presentations shared educational programmes oriented towards community engagement through service-learning, entrepreneurship and the development of soft skills that have been identified to be critical for students' future success. The presentations also included the evaluation and importance of the acquisition of these skills by the EARTH graduates, as well as the employers, and the faculty.

Service-learning, Dr Julieta Mazzola, Professor, the EARTH University

Dr Mazzola is a recognized certified specialist in community engagement, who shared the work that allows students to learn from the communities, develop new knowledge, capacities and skills, and apply their knowledge and skills in different circumstances through experiential learning in many differing curricular and co-curricular activities practiced at EARTH University. She focused on service learning,

which attempts to create a balance between mutual student learning and benefits to the community. The work experience/professional experience programme takes place over the four years and allows students to gradually grow in their understanding, and capacity to interact with the communities. It consists of working and interacting with members of the community during different semesters one day a week in alternative settings, including sustainable agriculture and sustainable natural resource management, inclusion and social equity, community organization, technology adaptation, entrepreneurship and creating value. The first two years promotes the development of sensibilities and social consciousness through the identification of problems and opportunities under the distinct contexts of the rural community, reflecting on what they observe, see, and experience as part of the educational process.

Focusing on the soft skills learned through working in the community, Dr Mazzola distributes them into three domains, cognitive, behavioural and affective learning. The results of a study among 38 students on the soft skills development identified 68 types of learning, 18 under cognitive (technical areas), 23 in behavioural, and 27 in affective learning. The most outstanding affective learning skills include interpersonal relations, where they valued the interchange of knowledge with the small producers, and the interchange of ideas and practices. The confidence established based on humility is an important factor for these relationships. Communication and active listening skills, listening with interest, the ability to express oneself adequately, and to adapt to the producer's language were recognized as critical skills that students learned. As part of EARTH's work experience programmes, students also learned to value working together in mutual collaboration to bring about change. Furthermore, students indicated that skills, such as self-sufficiency, empathy, and persistence allowed them to better support their community group to achieve their objectives. Learning empathy enabled them to appreciate learning about the difficult circumstances that small farmers and entrepreneurs face, and the persistence as a value not to give up when facing diversity.

Dr Mazzola pointed out that although working with the community allows students to develop many types of knowledge and skills in these three domains, the experience itself does not necessarily generate the desired learning. It is critical to have well designed, planned, and organized courses, managed with appropriate tools for reflection on what is being learned, with the corresponding support of appropriate technical teams. These innovative and transformative education practices will be reflected in this CA's case study compilation.

Importance of strengthening soft skills for entrepreneurship, Dr Irene Alvarado, Ex-Professor, the EARTH University

The educational systems for entrepreneurship are based on different stages or scopes. The first stage involves the development of an entrepreneurial mentality, understanding, sensitivity and the development of entrepreneurial or business ideas. The second stage begins a more advanced formulation of entrepreneurial ideas, which includes the creation of business teams, business plans, prototypes, and the validation of markets. At the EARTH University, students implement their business plans with loans provided by the university, integrating all theoretical concepts in the operation of their business. This stage reinforces the learning of many soft skills, which are also being developed across the entire university curriculum through experiential learning and community engagement (ref. Dr Mazzola's presentation) and in other courses, including team work, communication, leadership, as well as values and ethics, among others. Later stages include the implementation of a business, the development of business incubators, business accelerators and technological parks. When speaking of soft skills besides those mentioned, tolerance, conflict resolution and risk taking are also emphasized in entrepreneurship. Dr Alvarado stressed that the skills required for successful business development and entrepreneurial thinking cannot be achieved in one or two semesters, they need to be integrated across the curriculum over the four years of study. Soft skills for entrepreneurial success are necessary and can be grouped into four categories, namely: attitudes, attributes, entrepreneurial capacity, and interpersonal capacities. Soft skills are critical to entrepreneurial success. A study of MBA students throughout central America

found that after COVID pandemic, students were found to have weaknesses in some critical areas for entrepreneurial development.

Exit profile, soft skills and impact evaluation on graduates and employers at the EARTH University, Dr Caros Rodríguez, Director of Academics Affairs, EARTH University

Dr Rodríguez shared the EARTH University results of the studies involving more than 300 EARTH graduates, their employers and professors. They evaluated the importance of the characteristics that they have defined as components of the exit profile for the success of their graduates. The exit profiles are defined as the system of specific and generic competencies, that the university expects students to achieve upon graduation, which includes technical skills and soft skills. The university has identified over 90 competencies critical to the present and future success of its graduates and which they have integrated in eleven critical components of the exist profile.

The study asked employers and graduates what importance technical capacities had in their success, and it was evaluated very highly. But when they looked at the soft skills development, the change was dramatic and the results much higher. The top 20 was the highest ranking and 19 were soft skills. In fact, generally on the scale of 1 to 10 technical competencies (8.05) were one point lower than the soft skills (9.06) in importance. The highest on the list included the ability to make decisions, and to communicate (orally and written); commitment to ethics; work in teams; plan and manage time; act under new situations; identify, propose, and resolve problems; continuous learning, commitment to high quality, as well as leadership.

Asking professors how each of these soft skills are treated in their classes, high importance is given to teamwork, education on values, communication, and problem resolution, with a lot of emphasis on leadership development. These soft skills are treated transversally across courses, as crosscutting themes in the curriculum. Key curriculum components that stimulate the development of soft skills include work experience programme, entrepreneurial programmes, and community engagement.

Conclusions and closing

Dr Alejandro del Bosque, former President of AMEAS, former Dean of the Faculty of Agriculture, and Professor of the Autonomous University of Nuevo Leon, Mexico, concluded the conference. He appreciated the efforts and many cases of transformative change that are taking place in Mexican Faculties of Agriculture, such as experiential learning through field practice, dual academic studies combing university education and practical learning in real life activities, and social skills development.



Africa

Opening the Conference

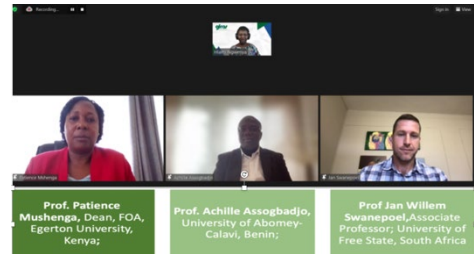
In his opening remarks of the Regional Conference in Africa, Prof. Patrick Okori, Executive Secretary, RUFORUM, indicated that the topic of transformation of education is more urgent now than ever because of three factors:

- **The global youth population:** It is estimated that 16% is aged below 24 years. 60% of the world's young population come from Asia–Pacific, while 70% of Africa are young people. The contribution of both Asia–Pacific and Africa to the world's young population is over 80%. These trends are also seen in Latin America and the Caribbean.
- **Major economic transformation, advancement of science and technology, and reduced mortality globally:** This greater acceleration has also brought about some challenges, such as



climate change and increased inequalities, especially in the global south. Some of the countries in these areas were colonized before, and the education system may not fit the new context of the world under this greater acceleration.

- **The increased need for job and wealth creation due to increased younger population:** The world today is influenced by science and technology, globalization and global connectivity. According to the World Economic Forum, more than half of the jobs that the youth will require would need the understanding of digital technologies. The future youth employment is insufficiently reflected in our current education systems. For example, similarly to other regions, Africa cannot create one third of the jobs that are required annually. We are not doing well collectively to tap on the digital advances. However, this imposes opportunities and challenges for young people.



Implications for Africa's education systems

There is a need to change Africa's education system to better align it the purpose, rather than only focusing on localized ecosystem. Students need to be equipped with skills and competencies that will enable them to fit in the changing world. The world where entrepreneurship, critical thinking, emotional intelligence, leadership and, more recently, artificial intelligence (AI) become an integral part of increasing productivity. Furthermore, thinking ecologically and sustainably about our production food systems need to be integrated into our education systems in order to enable young people to thrive and build a sustainable future for themselves, their children and their generations to come.

Collective commitment

Collectively, as a team of educators and facilitators, we need to commit through:

1. Focus on **reforming our training agenda**, with the idea of re-balancing the human resource pyramid that the number of TVET colleagues, the number of Bachelors, Masters and PhDs are such that they create jobs and wealth in a meaningful manner.
2. The training must move away **from creating civil servants to creating wealth creators**. This means that entrepreneurship becomes the central part of higher education, with business incubation and strategic partnership with private sector and other actors.
3. **Education must enhance the creativity of young people**. Research for development training is essential to enable young people to become wealth creators through innovative and creating thinking.
4. **Partnerships to scale is needed to create impact**. No man or woman is an island. We need partnerships to scale and create impact. This requires synergies, leveraging and learning from lessons and mistakes of others. Globally we can learn from one another to turn our education systems into more inclusive and suitable for the world the youth are living in and the world they will make.

Transformative Education Experiences from the ground

Three panellists drawn from East Africa, Southern Africa and West Africa were invited to the panel discussion to share their universities' transformative education experiences. These included: **Prof. Patience Mushenga**, Dean, FOA, Egerton University, Kenya; **Prof. Achille Assogbadjo**, University of Abomey-Calavi, Benin; and **Prof. Jan Villem Swanepoel**, Associate Professor, University of Free State (UFS), South Africa.

Current transformative education practices

The panel discussion explored the types of ongoing transformative education practices in these three institutions, each of which provided examples of innovative pedagogical practices.

Egerton

- Undergraduate programmes that are hands-on and include experiential learning. Students work on the farm and do practical work in the processing plants.
- Farm attachment programme where students are attached to farmers for 2 to 3 months.
- Entrepreneurship is embedded in the curricula, where students are able to start their own enterprises and supported through a funding scheme.
- Agribusiness Clinics where students work with communities and farmers to identify problems and work together to solve them.
- Student challenge programme to make learning more student-centred. Students work with industry partners to identify problems and find ways to solve them.
- MSc in Agri-Enterprise Development aimed at producing students who will be job creators. Students work with farmers' enterprises and have to develop own enterprise based on which they are graded accordingly.

UFS

- Experiential learning and on-farm experience.
- Integration of theory and real-life experience as part of assignments and case studies.
- Strong partnerships with the private sector and businesses.
- Advisory Board with people from industry and government to ensure the university stays up to date with current changes in the industry and advise on what curricular changes need to be made.
- Integrating entrepreneurial and business skills into the curriculum, engaging students in community action learning and business development.
- Strategic partnerships, and leveraging expertise and resources from private sector partners.
- The use of a university experimental farm as part of the integration of entrepreneurial skills for students.

Abomey-Calavi

- Harmonizing curricula between French-speaking and English-speaking countries, the university initiated BSc, MSc and PhD programmes that allow synergies with the English-speaking country systems.
- BSc students are attached to farms during the first year; in the second year they are linked to enterprises; and by third year they are required to engage in enterprise development or the development of a business plan.
- After BSc some students are able to study further to develop and be mentored to start their own enterprises.

Key success factors for the transformative models

In Egerton, one of the key success factors for education transformation is the establishment of a funding scheme that started at USD 5000 and now is worth USD 70 000. The aim is to support students interested in entrepreneurship through seed funding. The fund also supports Master's students in the Agri-Enterprise Development programme as it is now mandatory for them to write a business plan as part of their studies. The institutionalization of entrepreneurship within the university has resulted in a change of attitudes and enabled some students to study and run businesses simultaneously. There are two ways in which the university assesses students' performance on the farm. Firstly, a university assessor follows students on the farm. Secondly, farmers themselves provide assessments of students' performance and provide it to the university. Students are also encouraged to innovate by using digital tools, such as

software development for marketing and market linkage dairy management. The university provides guidelines to manage intellectual property (IP) issues.

In Abomey-Calavi, students now have more opportunities to be linked to the industries. Staff mobility and credit transferability between French- and English-speaking country systems were among other factors. The current university system has become more flexible than the previous rigid one, with more emphasis on industry linkages. The system now provides more self-learning space for students.

At UFS, the wool project that focuses on student-centred education is a good example of how to address value chains. The university also runs farmer enterprise projects specifically geared towards commercializing smallholder farmers and there is 95% success rate. The enterprise development and entrepreneurship training is taking place at different levels. For the Masters classes students have to write a business plan of their choice. The existing entrepreneurial hub allows students to get further training. Another level is working with community projects that is adding value to students' business education. This work is done in collaboration with other programmes, such as the Department of Economics and the Business School. The university is currently establishing the research commercially. Furthermore, an inclusive Advisory Board that updates the curriculum meets four times per year to manage the changes for different programmes. The university also employs lawyers within the research and technology development that assist with the IP management.

All these innovative education practices are adding value to the sustainable agrifood transformation.

Outcomes of the Africa baseline survey

Prof. Agnes Mwang'ombe, University of Nairobi, provided highlights of the results of the survey that assessed the status of transformative education in Africa. The survey covered a wide range of questions covering leadership support, gender inclusivity, innovative practices, engagement with communities, involvement of farmers in leadership, resource mobilization and other related issues related to the transformation of higher education in agriculture. In total, 25 respondents from Africa provided substantive responses to the survey from the following countries: Benin, Botswana, Cameroon, Côte d'Ivoire, Democratic Republic of Congo, Ghana, Kenya, Nigeria, Rwanda, South Africa, Tanzania, Uganda, and Zambia.

The survey presented results showed that there are many innovative ways of transforming education applied in different countries in Africa. Yet, there are many issues to ensure that such integration is done systematically. It was pointed out that we need to collectively address the issues through consistent collaboration mechanisms that would integrate the innovative pedagogical requirements in university curricula and ensure their continuity. (ref. full Survey report)

Europe

Opening the Conference

Dr Murat Sartas, Executive Secretary of EFARD opened the European Regional Conference on Transforming Higher Education in Agriculture on 12 December 2023. He pointed out that transformational learning is very context specific. The best organizational approach to enhance transformational learning is to stay informal and enable partners to build the capabilities of others rather than taking lead on initiatives. The context-specific experience of transformational learning has led universities to a different institutional configuration. In the European context, it is important to increase the inclusivity and participation of all regions, especially East and Central Europe. Their participation needs to be enabled through a transformational learning experience, for example by leading initiatives.

The number of registered participants for the event was 65, and over 22 participated.

Experiences from the ground

Small-scale aquaculture in Zambia – Mr Jan Staš, Project Centre Officer and Associate Researcher, Czech University of Life Sciences (CZU), Prague

CZU has been involved in several Czech international development programmes funded since 2018, including the strengthening of teaching, research and networking capacities at the University of Barotseland for agricultural development of the Western Province of Zambia. Furthermore, it has been contributing to capacity building of farmers in selected value chains, including mango, cassava and organic fertilizer value chains.

Currently, CZU is implementing a programme on integrated farming to increase the income of small and medium-scale farmers by helping them to implement and develop an integrated approach to farming in the Western Province of Zambia, thus contributing to raising the living standards of local people. This programme that works with small and medium-scale farmers is helping to increase agricultural production and productivity through the implementation of sustainable agricultural practices.

The university's approach for student–farmer collaboration has led to the identification of the following benefits acquired through experiential learning:

- **Inspiration:** By bringing various people together, including students and farmers, the community is motivated with practical examples.
- **Improved research capacities:** Both farmers and students are more confident to assess and research the issues and progress.
- **Reap what you sow:** Community engagement is ensured at every step.
- **Empathy:** Students improve their listening and communication skills as they better understand the needs of ordinary people and apply “do not harm” principles.
- **Interdisciplinarity:** The collaboration approach is implemented in a holistic way, considering the improvement and education of the ecosystems to manage the environment, and support diversity and diversification, hence ensuring that no one is left behind.
- **Sustainability:** The programme contributes to sustainability, ensuring benefits of the whole community while protecting nature.
- **Collective thinking:** Monitoring, evaluation, and assessment is performed jointly with the local community with documented lessons learned.
- **Global visibility of progress:** The collaborative efforts and the good practices implemented in Zambia are visible internationally.

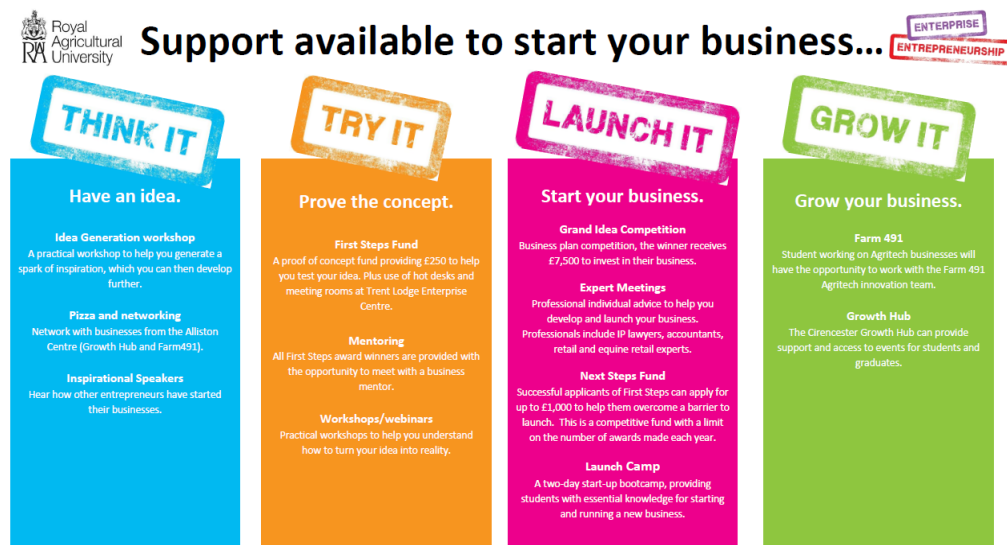
A key lesson learned is that it is crucial for students to be exposed to field conditions and learn by doing through their participation in real-life situations, outside the classrooms.

Nurturing Enterprise Skills – Dr Katherine Duke, Head of Enterprise & Employability, Royal Agricultural University, UK

Since 2023 the Royal Agricultural University in Cirencester, United Kingdom (UK) has been running an Enterprise and Entrepreneurship Programme (EEP), which provides an inspiring and supportive environment in which students can share, develop and launch their entrepreneurial ideas. This programme is extracurricular and provides students from all degree courses and years the opportunity to realize their aspirations in a professional and rewarding environment. Since 2013, 148 students have been part of the Enterprise Programme, out of which 97 were funded to develop their concept further and 69 innovators have launched businesses after leaving the university.

As well as acting as a springboard for student enterprise development, the EEP has attracted the support of business leaders and sponsors across the UK, enabling the RAU to organize networking events, enterprise workshops, mentoring services and inspirational talks. Budding entrepreneurs benefit from the knowledge and experience of their lecturers and the strong industry links. The RAU has been named an Institute of Enterprise and Entrepreneurs “Centre of Excellence” in 2019, and in 2020 being shortlisted as “outstanding entrepreneurial university of the year”.

The EEP has a clear four-stage approach THINK IT - TRY IT - LAUNCH IT - GROW IT (see figure below).



The First Steps Fund provides students with proof-of-concept funding of up to £250 to help them test their business idea as part of the TRY IT stage, as well as access to an external business mentor. The business mentors provide at least ten hours of support to help a student to develop their business idea. In addition, every Wednesday there is a practical workshop series to provide students with the opportunity to enhance their knowledge in areas such as social media for business, branding, intellectual property and accountancy.

Each year, the entrepreneurial students are invited to enter the RAU business planning competition “The Grand Idea” to support the LAUNCH IT stage and pitch their concept and business plan to a panel of expert judges, who have included people such as Levi Roots (Reggae Reggae sauce) and Julian Dunkerton (co-founder of SuperDry). Students pitch in the hope of winning £5000 equity free to invest in their business. To date, there have been 13 entrepreneurial winners (eight women and five men), ten of whom are heading up businesses today.

The RAU EEP approach

The RAU has created two student-focused social enterprise projects: Cotswold Hills Wine and Muddy Wellies Ale. These have provided students with the opportunity to develop their enterprise and entrepreneurial skills, whilst proceeds go into the First Steps Fund to support students in starting their own businesses. Muddy Wellies Ale was sold in 40 independent shops plus Gloucestershire branches of the Waitrose supermarket chain, while Cotswold Hills Wine is in 130 outlets across Southern England, including 87 Midcounties Co-op stores. Both brands have won a series of awards. The social enterprise has voluntary student teams, who have access to all areas of the project from running the vines to sales, marketing and new product development. In addition, the social enterprises are used as live business case studies in a number of taught modules. The project allows students to get involved with all facets of the business to develop their employability and enterprise skills and experience.

The EARTH University experience – Dr Jim French, Secretary General, GCHERA, and Project Director of the Transforming Higher Education Project of the American University of Beirut

The EARTH university was established by Costa Rican law in 1986 as a private, non-profit, international university and created with the support of the Costa Rican government, the US Agency for International Development (USAID) and the W.K. Kellogg Foundation. There is an international board of directors and trustees. The EARTH university offers a world-class scientific and technological education emphasizing ethical entrepreneurship and strong socioenvironmental commitment.

The campus is located on a 3300 ha commercial farm operation and teaching was initiated in 1990 with a student body with an approximately 50:50 male–female split. There is one international faculty and no academic departments, e.g. teaching is organized by academic year.

The educational model has evolved over the years towards systemic transformative learning, which has also inspired international projects, such as the Transforming Higher Education Project (see the figure). The teaching and learning process at EARTH University is dynamic and participatory based on experiential and action-based learning where students become active and responsible learners and the faculty become the facilitators of the learning process.

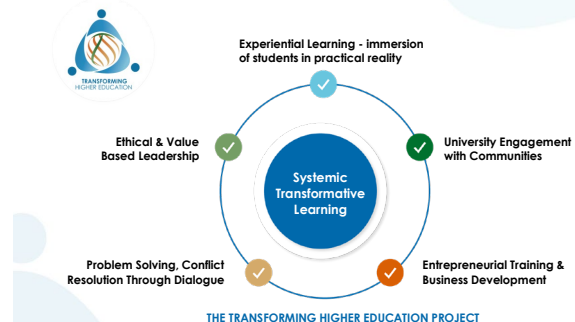
Initially there was some resistance to change from a more traditional model. Through continuous communication, training and policy agreements a gradual change of the educational model was introduced. Students were given increasing responsibility for their learning and became much more a partner in their own learning process.

The current curriculum includes, apart from technical skills also key soft skills, such as problem solving, critical thinking, leadership skills and communication skills, ethical entrepreneurship and social and environmental awareness and commitment.

The core learning programmes includes work experience, service learning in the communities, entrepreneurial projects, internships, professional experience and graduation projects. Students also organize an international fair.

Since 1990, more than 200 000 individuals in the communities surrounding EARTH benefited from the institution’s Community Development Program, which includes a service-learning course where students work with small-scale, local producers on their farms and with organized groups to promote sustainable community development.

The experience of EARTH shows that university transformation requires changes in policies, curriculum, pedagogy (experiential learning), and cultural change within the university, among students, faculty, and university leadership. There is a need for a more systematic change within programmes. For instance, community engagement must be a policy change, institutional change, integration with ongoing courses, and new innovative courses. Furthermore, this needs to be accompanied by changes in university culture and systemic change, change in the educational model, and incorporation of the community as partners within the university.



Experience sharing and key learnings, Dr Lisa van Dijk, Co-Chair, Prolinnova Oversight Group

An online exercise through Mentimeter (www.menti.com) was conducted to provide an opportunity for participants to share their experiences and consolidate the learning from the e-conference. Participants were requested to respond to two questions, which were included in the survey which preceded this e-conference. First the survey results were presented and then the conference participants were requested to provide further input.

Key factors underlying the participants’ successful introduction of changes to their university’s educational model

Survey results:

- staff dedication
- dedicated university leadership

- excellent contact between teaching staff and local private sector entities, NGOs, and public service organizations
- flexibility
- technology
- interest by civil society (farmers)
- learning by doing and seeing all in the field, not just on the screen

Further inputs from the conference participants:

- open-minded colleagues
- participation of local people
- starting with a smaller group, as it can be challenging to scale
- case studies and inspiration of other universities
- governance or university policy
- active students
- institutional leadership

How were any challenges overcome in transforming the educational model and practices

Survey results:

- very effective teamwork and leadership
- courses offered as electives to international students (though not all take this opportunity)
- persistence
- encouraging people and leading by example
- specific project funds

Further input from the conference participants:

- group discussions with the related people at the university
- demonstrating successful impact
- case studies – projects
- working with enthusiastic others to make it happen

Ten representatives of European universities provided substantive responses to the survey.

Asia–Pacific

Opening the Conference

The Asia–Pacific Regional Conference on Transforming Higher Education in Agriculture took place on 18 December 2023 and was opened by Dr Ravi Khetarpal, Executive Secretary, APAARI. He underscored the anticipation surrounding the outcomes of the Collective Action, emphasizing the pivotal role of higher education transformation as a key catalyst. Referring to insights from the McKinsey report on higher education transformation, Dr Khetarpal highlighted the need to allocate budgets more effectively for the improvement of institutional missions. The discourse delved into the essential mindset and approach required for transformation, aligning with the belief in leadership that embraces innovation. The actionable steps proposed by the McKinsey report, such as developing a shared vision, establishing a driven organizational baseline, and creating a sense of urgency for bold action, were outlined. The latter, particularly, caught attention as a call to address urgent and emergent issues with a proactive and strategic approach.

Panel discussion: What is driving agricultural education transformation and what are some key lessons learned from regional and global initiatives?

The panel discussion discussed the drivers of agricultural education transformation in the Asia-Pacific region, as well as the diverse experiences and lessons learned. The objectives were to learn about the region's experiences in mainstreaming innovative pedagogy in the system of higher education in agriculture, particularly focused on equipping education leaders, managers, researchers and professors with a mentality, attitudes and skills needed to create a different value within agrifood systems, innovate within the value chain, and graduate professionals with the right capabilities, ethical behaviours, and mindsets to actively participate in agrifood system transformation.

The speakers included Dr Noor Asura Adam, Deputy Director for Programs, Southeast Asia Regional Center for Graduate Study and Research in Agriculture (SEARCA); Dr Lisa van Dijk, Co-chair, ProInnova Oversight Group; Dr Narendra Shah, Member Secretary, Raja Gandhi Science and Technology Commission, Government of Maharashtra, and former Professor at IIT-Bombay, India; and Mr Gopesh Tewari, Head of Education, International Rice Research Institute (IRRI).

Current transformational educational efforts in Malaysia's and India's agricultural universities to better prepare students to effectively respond to the rapidly changing and complex agrifood systems

In **Malaysia**, the Ministry of Higher Education has strategic planning blueprints for higher education. Its transformative shift in higher education encompasses creating balanced and entrepreneurial graduates, achieving talent excellence, promoting lifelong learning, ensuring financial sustainability, and empowering governance to involve industry in the funding of university programmes. In terms of fostering innovation ecosystems, Malaysian universities are looking at how innovations in agriculture can be implemented through transformed education delivery, and how they include interdisciplinary programmes that integrate skills and knowledge from various disciplines (e.g. biology, economics, technology and environmental science). The Ministry is also increasingly trying to involve industry in curriculum development. Furthermore, the 2u2i programme emphasizing a structured two-year at university and two-year at industry experience to cultivate holistic graduates. This is very different from the traditional classroom-style learning but focused on experiential learning.

In **India**, the economic transition is also driving the agricultural sector. Agricultural education transformation is therefore marked by the country's economic transition and the challenges faced by the sector, which points to the need for increased efforts to sustain the livelihoods of those involved. The Government of Maharashtra provides about INR 5 million per year to agricultural universities to encourage young faculty members and scientists to innovate, particularly through engagement with industry.

The Government's "Capita" scheme, for example, is encouraging collaborative project initiatives between industries and institutions, including universities, aiming for technological advancements through joint proposals.

The Government is also promoting the "Case Study-based Pedagogy Approach" as an important and effective tool for higher-level education. Case study-based learning helps students connect theory with realistic scenarios, providing a practical understanding of the subject matter. Analysing case studies allows students to develop problem-solving skills and think creatively. This approach enables students to apply their theoretical knowledge to real-world situations, preparing them for future careers. The Government used this approach, for example for the use of ozone to treat cotton stalks to create animal feed.

The role of international agricultural research centres in making agricultural research and education more responsive to the real issues that small-scale producers and their rural communities are facing

IRRI's research, innovation and education programmes are designed based on the needs of its stakeholders, including small farmers. It has a system in place to match the needs of these different

stakeholders. It has five impact areas to address the issues of small farmers: nutrition, health, and food security; poverty reduction, livelihood, and jobs; gender equity, youth, and social inclusion; climate adaptation and mitigation; and environmental health and biodiversity.

The educational programmes and interventions of IRRI focus on these areas, and emphasize short-term and long-term courses, fellowships, and scholarships to create an enabling learning ecosystem. IRRI sees a significant importance of informal (extension, internships, scientists/student exchange programmes) and non-formal education (community engagement), as well as collaborative research projects to address real-time challenges. The organization also works on knowledge management, South–South Cooperation, online learning, and advisory support to national partners with different types of institutional capacity development. IRRI's unique approach, the "3H" approach, incorporates head, heart, and hand, along with soft skills, to enhance the learning experience of participants. Soft skills are a very important component required to promote students' professional success.

Key benefits of university–community collaboration for farmers; students; society; and transformation of agrifood system

Experience of Prolinnova shows that co-innovation and co-research actively engaging farmers in participatory diagnosis and assessments as partners where they can decide on research priorities leads to more directly applicable and useful outcomes. Their collaboration with higher education brings the diversity of knowledge in the innovation process that is required for experimentation. The diversity of knowledge brought through such collaborations helps address the complex challenges faced by farmers. Innovation process should be therefore driven by farmers with inputs by research and industry.

In terms of the benefits of this collaboration for students, looking at future employability of students and considering the changing role of agricultural advisory services, there is a strong implication on how advisors need to be trained to be effective in this role. Students must understand what is happening in the field, which requires soft skills that are normally not learned in universities but that support farmers in the research and innovation process, and include facilitation and intermediation. Social benefits are also numerous and include more resilient farmers, more effective research, and more ownership of farmers.

The changing landscape requires students to understand field realities and expectations through their field immersion, and the development of soft skills that are crucial for fulfilling effective roles in the evolving field.

There are many challenges faced by universities and colleges in implementing this collaborative approach, including resource constraints and the need for a cultural shift in working with farmers, approaching them from different perspectives.

The enabling environment driving university transformation

Transformation of higher education is mostly driven by non-academic institutions at global, regional and sub-regional levels. In South Asia, SEARCA is an important intermediary or an enabler supporting capacity development of universities that are strategic to play a vital role in their countries' socioeconomic development.

There is a need to make agriculture to appear more "sexy", shifting away from stereotypes associated with the field. One of SEARCA's departments emphasizes agricultural innovation through collaborating with industries, universities, agencies and NGOs to connect with universities, improve their funding and create a platform for capacity-building programmes for innovation. The University Consortium provides opportunities for universities in Southeast Asia and beyond, to engage in collaborative initiatives, connect with experts around the world, and enhancing research and innovation in agriculture, particularly through seven priority areas linked to the SDGs. For example, it is looking at sustainable agricultural systems, poverty reduction through innovative entrepreneurial models, and One Health.

SEARCA's partnerships with universities globally (including in Germany, Canada, Japan, and Taiwan) and international agricultural research organizations (such as ADB, IRRI and the World Bank) are offering joint scholarships to promote international collaboration. The focus is not only on students but also on engaging with farmers, industries, communities and governments to make agriculture a sustainable and attractive field. SEARCA works to ensure that agriculture remains vibrant and relevant, attracting both young and experienced individuals to contribute to the sector's growth and sustainability.

Education policy in India

India's central and state governments are promoting educational transformation through various initiatives and policies aligned with the New Education Policy (NEP 2020). The emphasis is on integrating interdisciplinarity and multidisciplinary, encouraging faculty members from different domains to collaborate and learn from each other.

The State Government of Maharashtra's commission works with agricultural universities, bringing in reviewers from multiple disciplines, including NGOs and private industries. This approach aims to foster horizontal learning, where individuals learn from their peers across different disciplines (e.g. how a chemist needs to learn about engineering aspects of process development). The Government is pushing for the creation of pilots and case studies that would facilitate collaboration between universities and industry experts and facilitates networking.

The rural–urban divide is no longer existent in the digital age, so the Government is interested to facilitate the knowledge transfer between agricultural and non-agricultural universities, as well as other institutions. The government encourages universities to engage with industry, NGOs, and other sectors to address real-world problems and challenges. This approach aims to create a platform for interdisciplinary learning, where researchers from diverse fields collaborate on projects, leading to holistic and innovative solutions. Overall, the government's efforts focus on bridging the gap between different disciplines, promoting collaborative research, and providing a platform for universities to interact with industries and communities. The goal is to create a conducive environment for horizontal learning and knowledge exchange

Integration of transformative education practices in agricultural universities

Integrating Community-Based Learning into Curriculum for Youth Agrifood Entrepreneurship and Rural Sustainability in Thailand, Asst Prof. Supawan Visetnoi, School of Agricultural Resources, Chulalongkorn University, Thailand

Chulalongkorn University School of Agricultural Resources (CUSAR) has a four-year undergraduate programme established in 2009 that includes two learning sites: the main campus in Bangkok and the Nan province campus. The programme's curriculum aims to create a new generation of farmers with an entrepreneurial mindset – a new breed of agricultural entrepreneurs with well rounded and extensive knowledge and management skills throughout agricultural value-chains. The focus is on community (rural) farming, which is relevant as most students came from rural areas. The programme encourages students and graduates to go back to serve their communities where they can play an important role in sustainable rural development.

Thai farmers face numerous challenges, which require a transformative approach to empower them: for example, aging farmers, shortage of agricultural workforce with decreasing replacement rate of younger farmers (by ~ 50% each decade), and unsustainable production systems (agrochemical dependency leading to farming debts). Furthermore, the weakest point in agricultural value chain is the farmer. Hence, to raise the level of the whole value chain requires fixing the weakest point. To be self-reliant, farmers must have a well rounded knowledge ranging from production to processing and marketing.

The current challenges of Thai education for sustainable agriculture is therefore how to design multi-interdisciplinary courses crossing the traditional education boundaries of specialized subjects. The integration of community-based learning in the curriculum allows students to interact with local

communities and villages and to develop real-life problem learning and solving skills in the context of complexities. The main teaching method at CUSAR is therefore a combination of theory and community-based/focused learning, which includes the practice of virtual local agribusiness implementation for students, and highly experienced external speakers to build students' inspiration.

CUSAR's **main transformative concept in agricultural education** includes the development of human resources and broader knowledge for the community and Thai society, not just to provide narrow technical training and skills or produce specialist graduates. Secondly, the university aims to produce a new generation of "agricultural entrepreneurs", who have a holistic vision of the agricultural value chain in social, economic and environmental contexts, not to simply enhance the farmer practice or production alone.

The key actors involved in the implementation of the transformative education programme include the university administration through funding, scholarships and other support; CUSAR's programme/curriculum that includes faculty members and staff; students and their families; government and related organizations involved through MOUs, e.g. funding and scholarship and other "in-kind" support, such as internship opportunities, land-granting and seed funding or loans to start small businesses.

Examples of community engagement courses of CUSAR includes: compulsory courses for 2nd – 4th year students (Nan campus) in animal/livestock production (3 courses). The community engagement starts from the area selection, to the problem identification, data collection (interviews/observation), planning to solve the problem (based on academic knowledge with instructor's guidance), presentation of the plan to farmers followed by discussion, implementation in practice, follow up and evaluation, and conclusions and lesson-learned by the end of semester. The key benefits of this approach for students include capacities to cooperate and engage with farmers to better understand their needs. Professors also benefit in terms of improved mentoring capacities.



Some student feedback shows that they are now able to develop communication and problem-solving skills through learning from real issues, and help farmers improve their production process and quality.

Feedback from farmers shows that they value that they also can play a role in students' learning process. They also learn that knowledge from universities can be applied to improve their livelihoods. The university's experience also shows that engaging in diverse local problems is good for students' learning, as this creates opportunities to interact with local communities and learn about diverse, not just specialized, areas. However, the approach requires overcoming the cultural and language barriers, and the establishment of trust through the connection with locals.

To institutionalize this transformative education approach, CUSAR identified the following challenges:

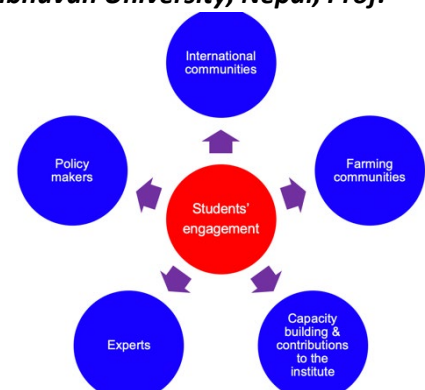
- Maintaining the programme/curriculum with the limited budget and resources e.g. tools, transport, food, equipment, trained staff and instructors.
- Discontinuation of external support due to executive or staff rotation of government organization or changes in their administration policies.
- Significant effort is required from faculty and staff, who run the programme, as such an educational programme could be time-consuming with small benefits to the staff.
- Lack of recognition of the effort by administration.

- Lack of incentives for faculty staff to move away from the conventional evaluation system, job burden (research and non-academic workloads).

Dr Supawan concluded with lessons learned and a number of recommendations emphasizing that the community-based learning benefits both students and communities. “Students could act as a bridge” that connect HEI and community. To make CUSAR’s innovations sustainable and adopted in other universities requires continuous cross-sectoral cooperation among stakeholders and ongoing support from the university and government. Furthermore, academic innovation for the agrifood sector and youth needs to be better appreciated for its potential contribution to society, the environment and a new generation of Thai youth supporting sustainable rural development. Future comparative research could also be useful to examine how academic innovation among other universities in Thailand and different countries have addressed similar problems in their agricultural sector.

Integrating innovative and transformative educational practice in Tribhuvan University, Nepal, Prof. Dharma Dangol, Institute of Agriculture and Animal Science, Tribhuvan University, Nepal

Tribhuvan University is the first and largest university in Nepal with multiple faculties and research centres. The university's dispersed presence across Nepal serves as a hub for education and development. It has five institutes, four faculties, four research centres, and many constitutional and affiliated colleges scattered all over Nepal. Among the five institutes, one is the Institute of Agriculture and Animal Science for agricultural education (<https://www.iaas.edu.np/>).



One of the innovations is the new curriculum development for a MSc Ag Course Title: Participatory Innovation Research and Development Studies (2+1) It combines the theory with practical training, which includes the integration of ethics, learning innovation and document knowledge, writing funding proposals, conducting research on local innovations, launching travelling seminars/mobile camps, and conducting awareness camps.

To produce innovative human resources, many events are organized by the students together with communities. Students are not only interacting with the communities but also with writers and reporters, as they are organizing their own webinars and contributing to newspapers. Such activities help in producing innovative human resources and create opportunities for students to work with experts and international communities.

The triggers of change for the universities have been the following change agents: Prolinnova Nepal and International, NWG members, focal person education (TU Faculty), Subject Matter Committee, Faculty Board, as well as teachers, students and farmers.

Several challenges were identified, including a lack of understanding of innovative and transformative education, limited curriculum development in universities, and insufficiently trained faculties, as well as lack of creativity, commitment and dedication of university staff. To address these challenges, Prof. Dangol proposed solutions, such as faculty exposure programmes for faculty board members, subject committee members and professors; new curriculum development focused on participatory innovation research; building institutional capacity; and engagement of policy makers in university activities. He concluded by highlighting the need for establishing agricultural innovation centres and sharing teaching and research experiences through webinars and conferences, particularly with other universities in Bangladesh, Cambodia, India and Sri Lanka.

Way forward with the CA: Theory of Change

Ms Martina Spisiakova presented the Theory of Change for the CA as a next step in moving forward on collectively transforming higher education in agriculture. The presentation started with the problem statement, addressing the root issues that the CA aims to tackle. Indicative activities on which feedback from different stakeholders is still open were summarized, leading to various expected outputs and outcomes, finally contributing to the defined impact pathways. The CA will primarily focus on awareness raising, knowledge management, institutional capacity development, and advocacy to help create an enabling environment with policies that are favourable to an innovative education ecosystem. The CA cannot achieve its goals alone, and the conferences' participants were invited to share their thoughts on their possible engagement, contributions, and desired activities.

Wrap up and closing

The four conferences have showed that the significance of innovative education approaches and interdisciplinary learning, especially in connecting higher education with real-life multidisciplinary practices and problem-solving involving farmers, cannot be underestimated. Innovative pedagogical and participatory education approaches need to be systematically applied in universities to equip students with the necessary capacities needed to enable them to address the real-world challenges. In the context of the world's poverty, the climate crisis, and conflicts, higher education in agriculture has a critical role to play. As such, agricultural universities need to prioritize the need to understand the context, foster community engagement, and increase multi-actor participation in research and innovation.

Annex 1: Programme of Regional Conferences

Latin America Regional Conference on Transformation of Higher Education in Agriculture – 27 November 2023, 9.00 Central America

Moderator: Dr Jim French, Secretary General, GCHERA

Time	Session	Objective	Speaker
9.00-9.10	Welcome	Welcome the participants	Dr Hildegard Lignau , Executive Secretary, GCHERA; and Dr Jose Zaglul , President, GCHERA
9.10-9.20	Introduction	Introduce the meeting's objectives	Dr Jim French , Secretary General, GCHERA
9.20-9.35	Setting the stage for education transformation: Survey results	Learn about key findings of the recent survey	Dr Jim French , Secretary General, GCHERA
9.35-10.05	Regional experiences of agricultural education transformation	Learn about the region's experiences in mainstreaming innovative pedagogy in the system of higher education in agriculture.	<p>Prof. Mario Benhur Chuc, Instituto Tecnológico Superior de Calkiní, México</p> <p>Prof. Gael Pressoir, Université de Quisqueya, Haïti Daniel</p> <p>Prof. Alberto Panti González, Instituto Tecnológico Superior de Hopelchén, México</p> <p>Prof. María Concepción Lara Gómez, Instituto Nacional de México – Campus Conkal</p>
10.05-10.30	Innovative education model of the Earth University and impact of the development of soft skills	Learn about experiences of the Earth University in Costa Rica with its innovative education model and the impacts of developing soft skills of students.	<p>Prof. Julieta Mazzola, the Earth University</p> <p>Dr Irene Alvarado, Ex-Professor, the Earth University</p> <p>Prof. Caros Rodríguez, the Earth University</p>
10.30-10.50	Asia–Pacific perspective, and the way forward with the CA: Theory of Change	Learn about Asian-Pacific experiences, the outcomes of an inter-regional WG on Transforming Higher Education and the way forward with the CA.	Martina Spisiakova , Strategy and Innovation Coordinator, APAARI
10.50-11.00	Wrap up and closing		<p>Dr Alejandro del Bosque, Member, ASOCIACIÓN MEXICANA DE EDUCACIÓN AGRÍCOLA SUPERIOR A.C. (AMEAS)</p> <p>Dr José Zaglul, President, GCHERA</p>

Africa Regional Conference on Transformation of Higher Education in Agriculture 30 November 2023, 14.00-16.00 EAT time

Moderator: Dr Hlami Ngwenya, Professionalization Coordinator, GFRAS

Time	Session	Objective	Speaker
14.00-14.30	Setting the scene and introduction	Welcome the participants	Prof. Patrick Okori , Executive Secretary, RUFORUM
	Introduction	Introduce the meeting's objectives	Dr Hlami Ngwenya , Professionalization Coordinator, GFRAS
14.30-14.40	About the Collective Action on Transforming Higher Education in Agriculture	Learn about the CA	Mr Karim Hussein , Senior Advisor, GFAR
14.40-15.00	The outcomes of the WG on Transforming Higher Education in Agriculture, and the Theory of Change	Learn about the transformative learning framework, the outcomes of an international WG, and how this CA will contribute to the transformation of higher education	Ms Martina Spisiakova , Strategy and Innovation Coordinator, APAARI
15.00-15.30	Panel discussion: Experiences from the ground on transformative education practices in agriculture	Learn about the region's experiences in mainstreaming innovative pedagogy in the system of higher education in agriculture	Panellists: Prof. Patience Mushenga , Dean, FOA, Egerton University, Kenya Prof. Achille Assogbadjo , University of Abomey-Calavi, Benin Prof. Jan Villem Swanepoel , Associate Professor, University of Free State, South Africa
15.30-15.45	Outcomes of the stakeholder survey	Learn about key findings of the recent survey to provide valuable insights on the importance and status of transformation of higher education in the region	Dr Agnes W. Mwang'ombe , Professor of Plant Pathology, University of Nairobi
15.45-16.00	Way forward with the CA, wrap up and closing		Dr Hlami Ngwenya , Professionalization Coordinator, GFRAS

European Regional Conference on Transformation of Higher Education in Agriculture – 12 December 2023, 14.00 CET

Moderator: Dr Lisa van Dijk, Co-Chair, Prolinnova Oversight Group

Time	Session	Objective	Speaker
14.00-14.15	Welcoming	Welcome the participants	Dr Murat Sartas Executive Secretary, EFARD
	Introduction	Introduce the meeting's objectives	Dr Lisa van Dijk , Co-Chair, Prolinnova Oversight Group
14.15-14.20	About the Collective Action on Transforming Higher Education in Agriculture	Learn about the CA	Mr Karim Hussein , Senior Advisor, GFAR
14.20-14.35	The outcomes of the WG on Transforming Higher Education in Agriculture, and the Theory of Change	Learn about the transformative learning framework, the outcomes of an international WG, and how this CA will contribute to the transformation of higher education	Ms Martina Spisiakova , Strategy and Innovation Coordinator, APAARI
14.35-15.20	Panel discussion: Transformative education practices in agriculture – Experiences from the ground	Learn about the region's experiences in mainstreaming innovative pedagogy in the system of higher education in agriculture	<p>Mr Jan Staš, Project Centre Officer and Associate Researcher, Czech University of Life Sciences, Prague</p> <p>Dr Katherine Duke, Head of Enterprise and Employability, Royal Agricultural University, UK</p> <p>Dr Jim French, Secretary General, GCHERA</p> <p>Dr Lisa van Dijk, Co-Chair, Prolinnova Oversight Group</p>
15.45-15.30	Way forward with the CA, wrap up and closing		Mr Karim Hussein , Senior Advisor, GFAR

Asia–Pacific Regional Conference on Transformation of Higher Education in Agriculture – 18 December 2023, 14.00 BKK time

Moderator: Ms Samitha Haldar, Partnership and Membership Manager, APAARI

Time	Session	Objective	Speaker
14.00-14.10	Welcome	Welcome the participants	Dr Ravi Khetarpal , Executive Secretary, APAARI; and Mr Karim Hussain , Senior Advisor, GFAiR
14.10-14.15	Introduction	Introduce the meeting’s objectives	Ms Samitha Haldar , Partnership and Membership Manager, APAARI
14.15-14.35	Setting the stage: Transformation of Higher Education in Agriculture – A trajectory of the future	Learn about key findings the WG on Transforming Higher Education in Agriculture, with valuable insights on the importance and status of transformation of higher education in the region	Ms Martina Spisiakova , Innovation and Strategy Coordinator, APAARI
14.35-15.00	Panel discussion: What is driving agricultural education transformation and what are some key lessons learned from regional and global initiatives?	Learn about the region’s experiences in mainstreaming innovative pedagogy in the system of higher education in agriculture, particularly focused on equipping education leaders, managers, researchers and professors with a mentality, attitudes and skills needed to create a different value within agrifood systems, innovate within the value chain, and graduate professionals with the right capabilities, ethical behaviours, and mindsets to actively participate in agrifood system transformation	Dr Nur Azura binti Adam , Deputy Director for Programs, SEARCA Dr Narendra Shah , Member Secretary, Rajiv Gandhi Science and Technology Commission, Government of Maharashtra, former Professor at IIT-Bombay, India Mr Gopesh Tewari , Head of Education, IRRI Dr Lisa van Dijk , Co-chair of the Prolinnova Oversight Group Moderator: Ms Martina Spisiakova
15.00-15.30	Integration of transformative education practices in agricultural universities	Learn about innovative transformative education practices that are being integrated in higher education in Asia–Pacific (case studies from Nepal and Thailand)	Asst. Prof. Supawan Visetnoi , School of Agricultural Resources, Chulalongkorn University, Thailand Prof. Dharma Dangol , Institute of Agriculture and Animal Science, Tribhuvan University, Nepal
15.30-15.45	Way forward with the CA: Theory of Change	Learn about the transformative learning framework, and how this CA will contribute to the transformation of higher education.	Martina Spisiakova , Strategy and Innovation Coordinator, APAARI
15.45-16.00	Wrap up and closing		Karim Hussein , Senior Advisor, GFAR