

# Relevance of current higher education for the professionals of the 21<sup>st</sup> Century



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# The role of universities of agriculture and life sciences in the 21<sup>st</sup> Century

- The backbone of national agricultural research and innovation systems
- Contributing to the SDGs, addressing specific topics through research, teaching and societal mission
- Links with actors that are part of the transformative process, e.g. the food sector, forestry and renewable energies

However...

- Most APR agricultural universities follow prescribed norms and standards, academic regulations, curricula and syllabi established decades ago (many in the 1960s)
- No focused way towards achieving the SDGs outcomes
- The APR is constantly changing, becoming more complex and dynamic, with new issues, trends and opportunities, in the context of various disruptions and climate change

# The Two Faces of Asia-Pacific: Prosperity vs Poverty

- Strong income and population growth, industrialization, and urbanization the drivers...
- Average economic growth 7.6% a year between 1990 and 2010, far exceeding the 3.4% global average....

## **BUT...**

- Very diverse economies and cultures...
- **Two thirds of the world's poorest** people
- **560 million people live on less than \$1.25 a day** (260 million of those people in India)
- About 40 percent of APR inhabitants **cannot afford a healthy diet..**
- 30 per cent of children under five are stunted
- Over half of APR population still lives in rural areas, and most are engaged in agriculture..



Source: Syngenta

# From COVID-19 recovery to new crisis...

- The Ukraine crisis disruption of global value chains
- **5F Crisis** (food, feed, fuel, fertilizer and finance) – derailing the progress towards the SDGs
- Ukraine and Russia among the world's biggest exporters of commodities like vegetable oil and grains, as well as the nitrogen, phosphorus and potassium used to manufacture fertilizer
- Surging commodity prices, and financial sector and supply chain disruptions (e.g. sunflower oil export suspension)
- Countries like Bangladesh, China and Pakistan rely on grain imports from Ukraine and Russia
- Price hikes across the entire oilseeds sector are occurring in Asia, affecting the prices of soybean and palm oil



# Are we educating the future leaders of agriculture that the communities, agribusiness and society requires?

- **Increasing creation of opportunities for empowering university students through entrepreneurial and agri-business education**
- Curricula revisions with integration of experiential learning and private sector collaboration, international exchange and promotion of digitalization of farming systems
- Opportunities for fellowships, internships, experiential learning, civic engagement, mentoring
- Increased use of learning methods focused on life-long learning perspective, employability skills, innovation, critical thinking, problem solving, teamwork, decision making and various personality attributes



# Some examples

- **India:** Increasing **business incubators within universities** e.g. Technology Incubation Center, at the University of Agricultural Sciences, Dharwad
- **Malaysia:** “**Service-learning experience**” at UPM creating a transformative learning environment to enable students to quickly adjust to employment settings – through civic engagement students better understand community needs and develop skills e.g. communication, problem-solving, social and inter-cultural understanding, teamwork and cooperation, and decision making
- **Thailand:** Public-private partnership “**Mentoring and Attracting Youth in Agribusiness (MAYA)**” programme to inspire students to develop their entrepreneurial career in agriculture. The participants are supervised by an agribusiness or industry-related professional with soft skill development in the centre.



Source: FAO

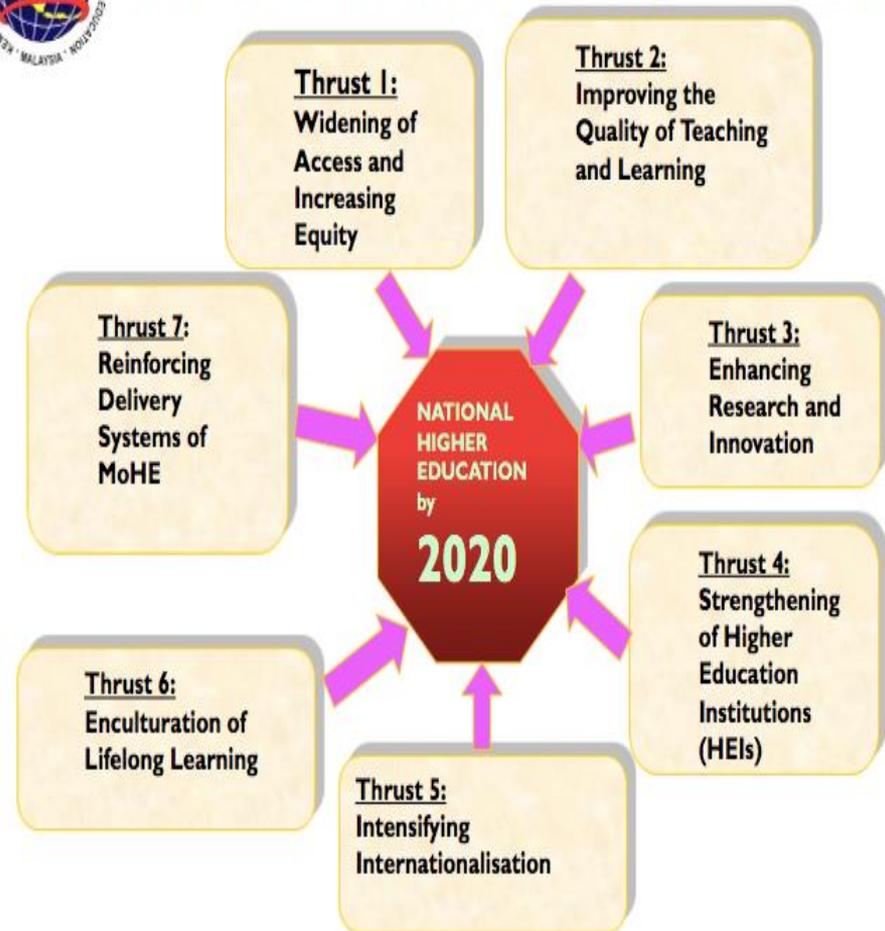
# Enabling environment: Policy innovation

## Malaysia:

- **New Economic Model Plan** that focuses on human capital development and improvements in innovation capacity, the need to intensify research activities and outputs from universities and public research institutes, and enhance their links with private companies to maximise commercialization opportunities.
- The **National Higher Education Strategic Plan** aimed to develop a critical mass of 100 researchers, scientists and engineers for every 10,000 people in the workforce – increased funding.
- **National Innovation Strategy** focusing on developing “enablers” that include the use of ICT technologies, lifelong learning, interaction and collaboration between industry, academia, society and government, and the creation of entrepreneurs.



## THE SEVEN STRATEGIC THRUSTS



# Enabling environment: Innovative partnerships

- **Vietnam:** Collaboration of Hanoi University of Public Health with the Ministry of Health and Ministry of Agriculture and Rural Development on **food safety risk assessment** to build capacity of government officials to better support policy and decision making for improving Vietnam's food safety management.
- **Philippines:** Collaboration with GoP, Leyte State University, Australian universities, and Filipino farmers, to adopt “continuous improvement and innovation process approach” to enhance farmers' knowledge in technical and economic aspects of their farming system.
- **Cambodia and Thailand:** The Horticulture Innovation Lab's Regional Center at Kasetsart University in Thailand helping Cambodian farmers construct storage facilities and develop new marketing skills of Cambodian farmers.



Source: AFGRI

# Is higher education fulfilling these needs?

Despite a lot of efforts to transform HE...

- **Lack of thinking from the agricultural innovation system (AIS) perspective** – fundamental for driving innovative strategies that improve agricultural productivity, sustain food and nutritional security, and protect environment
- Education change processes are insufficiently addressed simultaneously at **individual, organizational and enabling environment levels**
- The traditional **research-extension-farmer model for technology delivery is no longer acceptable**, due to "top down" prescriptions, ineffectiveness to cope with the dynamics of production systems, complex interactions, effects of climate change and globalization
- **Lack of functional capacities** to collaborate, think critically, coordinate and communicate across sectors, understand how institutional innovation supports technical innovation processes, use trans-disciplinary approaches (gender-transformative, social, environmental)



Source: Diane Clark

# Is higher education fulfilling these needs?

- **APR HE general issues:** insufficient investment in research and education, education quality, and collaboration with the private sector; gaps b/w the skills with which students graduate and those demanded by employers
- **Cambodia and Laos:** Lack of interest in agricultural subjects, high education drop-out rates, poor teaching and research culture, pedagogical stagnation
- **India:** 90% of the universities and HEIs have outdated curriculum
- **Indonesia:** Lack of innovation culture and basic innovation prerequisites
- **Malaysia:** Nearly all the top leadership posts in public universities are politically appointed - training R&I management is not a prerequisite
- **Myanmar:** Agricultural research intensity ratio was just 0.06 per cent in 2017 – one of the lowest in the world, only one university works on agri-food systems
- **Philippines:** Unequal distribution of funding for universities
- **Thailand:** Lack of motivation of professors to design creative teaching methods to challenge students because of their stable working environment
- **Vietnam:** Limited R&I capacity of various actors, a relatively small number of university lecturers and researchers qualified at the PhD level

# Why do we need to change institutions of higher education?

## Key lesson from the recent disruptions of agri-food systems:

The best way for rural farmers, local and national economies to withstand unprecedented stressors is to **develop long-term resilience**:

1. become more self-reliant
2. mitigate the impact of severe events
3. increase rural prosperity and
4. ensure food systems are sustainable

# How can higher education enable future professionals to build long-term resilience?

Agricultural education must be **more responsive** to the changing context, and **more focused on the SDGs**, to build **long-term resilience**, keeping balance between agricultural competitiveness and sustainability through:

- Digital agriculture
- Promoting sustainable agri-food systems
- Facilitating regional cooperation
- Resilience for sustainable development



# Digital innovation in agriculture

## Holds the potential to:

- unlock employment opportunities
- better manage natural resources
- improve production and productivity
- bridge the rural divide and empower youth and women to access information, technology and inputs and markets
- ...making agricultural value chains more efficient and inclusive

AFA, APAARI, and GFAR collective multi-stakeholder action on **Inclusive Digital Transformation of Agriculture in Asia Pacific** to develop an evidence-base, and consensus driven governance framework on good practices for the inclusion of smallholders in digital agriculture



Source: Shivani Meena

# Digital agriculture – The growth of educational opportunities for HE to...

- Serve in **meeting the industry's demand** for talent (e.g. recognize precision agriculture as a discipline to develop well-trained graduates)
- **Impact various digital tools and processes through research**
- **Co-design** digital processes, tools and projects with multi-actors that are part of the agricultural innovation system
- **Connect with farmers and industry** – engage with farmers in the co-design and governance of digital solutions, to better understand their practical needs that would lead to adoption
- **Participate in and contribute to digital extension** programmes and collective multi-actor learning processes



# Promoting sustainable agri-food systems

- Vulnerability to climate change with intensive farming and fishing practices – increasing the pressure on natural resources
- An urgent need to shift towards **climate-resilient agricultural technologies** that sustain local production, and to **adapt and innovate** within both domestic and regional agri-food systems
- Any support for farmers, fishers and production systems should always be supplemented with **technical training** on sustainable and climate-smart farming and fisheries practices, as well as **soft skills**



**“Rural areas of our planet hold the key to solving some of the most critical challenges facing humanity,”**

**Kanayo F. Nwanze, former IFAD President**

# Promoting sustainable agri-food systems

## Opportunities for HEIs to:

- **Focus education on developing these areas in line with the SDGs**
- **Build the right education mindset** – From the joy of publishing a paper to the joy of application – Recognize that research as a purely intellectual exercise is pointless. Knowledge and research must have an application if it is going to make a difference!
- **Promote farming and agriculture as a dignified economic activity, a business** (no matter how small) since it is a primary source of income and livelihood for half of the region's population
- **Recognize the value of local knowledge** – Farmers' knowledge of local conditions, complex social dynamics and their community needs is far deeper than that of experts –learning from people whose learning comes from experience, not books is crucial
- **Engage with farmers in R&D as equal partners** – This can generate trust, create solutions to complex problems, and create conditions for small businesses to grow and thrive
- **Participate in knowledge diplomacy** to strengthen global partnerships

# Facilitating regional cooperation

- The role of HE is expanding as it moves into an era of **increasing cross-border activity**
- The mission of universities needs to go **beyond research and transfer of know-how**
- They need to promote innovative thinking and entrepreneurial culture, institutional innovation, and creation of venture capital – contributing to the **co-creation of regional innovation ecosystems**
- The need to foster intra-regional and international collaboration with other universities and among their countries
- Academic specialization in technical subjects needs to be combined with general education...
- ...which requires **functional capacities**, including **diplomacy** that is crucial for strengthening global partnerships...

War is failure of  
diplomacy.



John Dingell

# Higher education and diplomacy

- **HEIs in science diplomacy** – Evidence providers for global policy actors, institutional sources of scientific evidence, data and concepts that inform decision makers and help constitute global policy domains
- **Integration of diplomacy in HEIs curricula** to build trans-governmental and trans-national capacity of future professionals for cooperation and governance
- **HEIs in knowledge diplomacy** – Strengthening international relations and transnational cooperation between universities and colleges to promote knowledge exchange, scientific endeavour, and transformation of these HEIs themselves
- **HEIs in informal diplomacy** (e.g. ASEAN regional economic integration)
- **HEIs in academic diplomacy** (e.g. European Academy of Diplomacy (EAD))
- **Innovation diplomacy** – Contributing the set of ideas, principles, visions, strategies and practices that lies at the intersection of innovation and foreign policy
- **Education diplomacy** – Utilizing diplomatic skills and cooperating with both public and private sectors, educators and educational institutions, individuals and organizations, with an agenda of promoting education all over the Globe as a basic human right, accessible to all

*Source: Diane Stone, School of Transnational Governance, University of Florence*

# The art of diplomacy...

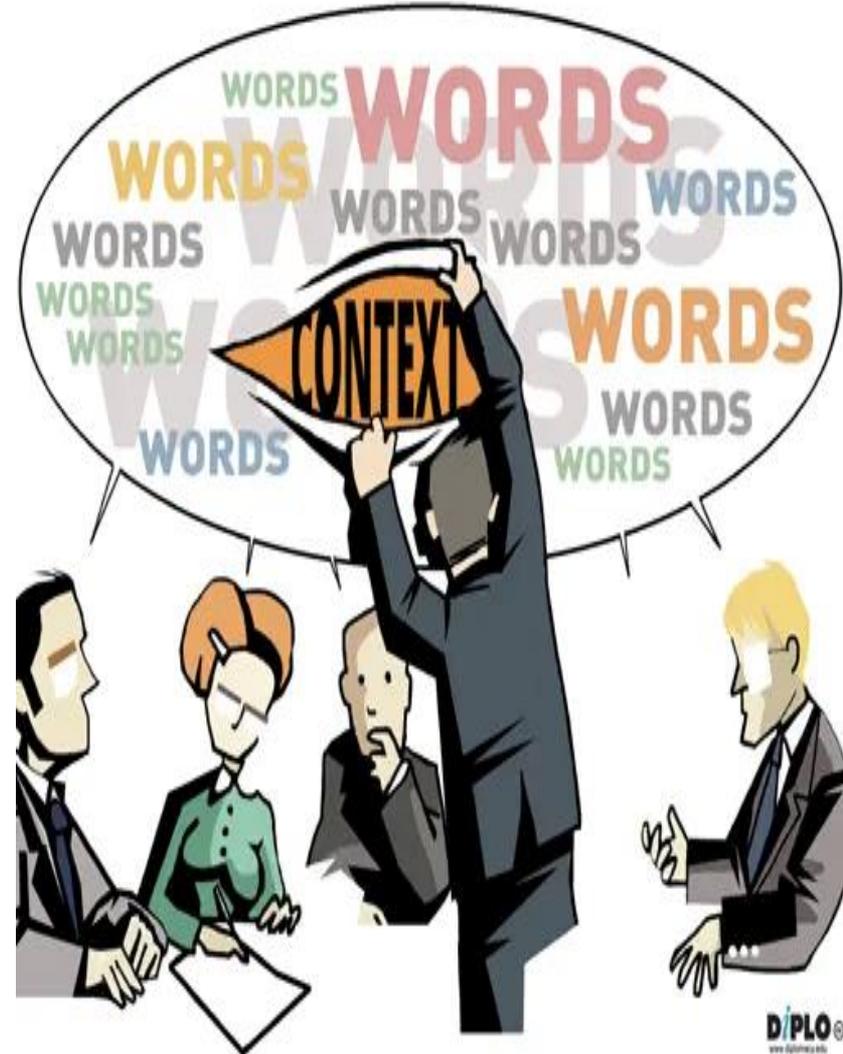
- Not just about conducting politics to advance own interests...
- International relations, forming alliances, and exercising tact and skill in dealing with people of varied backgrounds based on mutual understanding
- **Creating WIN-WIN outcomes** for the benefits of society – peace and prosperity
- Students need skills to analyze primary sources and employ **critical thinking and analysis** when considering individual bias and perspective
- Need to help **students develop their global competence** by considering multiple perspectives and comparing competing narratives



*Vibrant and innovative local-human-driven systems as engine for a profound food system transformation (source: N. Le Gall/Cirad—Année internationale des Forêts 2011)*

# Integration of storytelling from diplomats

- People's experiences **bring classrooms content come alive** and make subject memorable for students...
- Provide a **social and cultural context** that enriches curriculum in a way that textbooks never will...
- Published **literature often lack the everyday experiences** of people, how they felt about a particular topic, why they made certain decisions, and how their decisions impacted the society...
- Diplomats work on **important issues that relate directly to curricula** e.g. environmental, gender, economic, agriculture-related issues, job creation, human rights...
- Learning comes from the **reflection of experience**...
- The strategies applied make students learn and get inspired to become **agents of change**



# The world needs innovative solutions: The role of HEIs more pertinent than ever!

- **Broadening university vision** – how they can fill the needs by focused contribution to the SDGs
- **Integration of the AIS perspective** – functional capacities, multi-actor collaboration and cross-sectoral linkages
- **Scaling up global partnerships** through Knowledge / Education / Science / Innovation diplomacy
- **Engaging in digital innovation** in agriculture

**THANK YOU!**



Source: POST TODAY

# The impacts of the Transforming Higher Education Project on APAARI's work



Martina Spisiakova, Knowledge Management Coordinator, Asia-Pacific Association of Agricultural Research Institutions (APAARI)

# Asia-Pacific Association of Agricultural Research Institutions (APAARI)



- Membership-based
- Apolitical
- Multi-stakeholder
- Inter-governmental
- Regional organization
- Working in APR since 1990

## **Vision:**

Strengthened research and innovations for sustainable development in Asia and the Pacific

## **80+ APAARI's members**

- National agricultural research institutes and organizations (NARS)
- **Higher education institutions**
- Inter-governmental agencies
- International agricultural research centres
- Private sector
- Civil society (NGOs and FOs)
- Global/regional/sub-regional fora

# As a bridging organization and an innovation platform in Asia-Pacific, APAARI...

**Capacity development** – Funding and facilitating member participation in programmes that build their technical and functional capacities to strengthen innovation and sustainable transformation of agri-food systems in the region.

**Knowledge management** – Facilitating knowledge sharing, learning and collaboration, disseminating research outputs, and providing guidance to researchers, policy makers and donors to support policy development, re-orientation of investments, and focus on strategic agri-food priorities of the region.

**Policy dialogue** – Creating opportunities for multi-actors to engage in policy dialogue on science-based options for complex and interrelated economic, social and environmental sustainability challenges, influence mindset shift and inspire transformation towards sustainable agri-food systems.

**Networking** – Connecting member institutions and individuals in a network of national, regional and global AIS stakeholders and expertise; and facilitating research-extension-policy linkages.

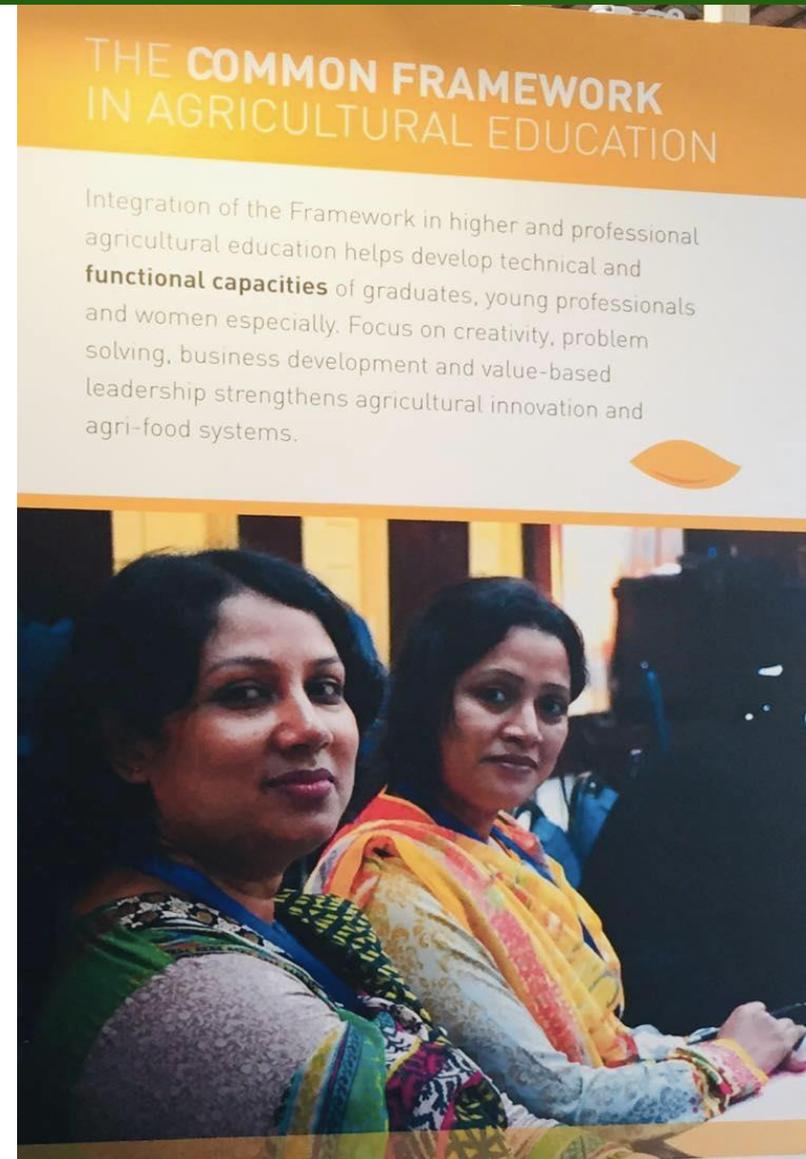
**Information management** – Facilitating data and information collection, analysis and dissemination to support scaling up and out of innovations, and feed evidence into decision-/policy-making processes.

**Advocacy** – Using evidence to advocate: policies for improved investments in agri-food research and innovation systems; reforms for agricultural higher education to better respond to the dynamics of the region's agri-food systems; and inclusive agricultural innovation strategies.



# GCHERA/Transformation of Higher Education Project – a major inspiration for APAARI

- January 2018 – analytical work on tertiary sector perspectives on AIS for sustainable development in Asia-Pacific; proposal for an ASEAN-UNESCO project...
- June 2018 – APAARI took place in the European Development Days of the European Commission to showcase activities of TAP in Bangladesh and Laos, and GCHERA on transforming agricultural education under the topic “**Women and girls at the forefront of sustainable development: protect, empower, invest**”
- **Re-engagement** with the European Union, FAO, GFAR on how to move the discussions on university transformation forward...



# Evolving knowledge partnership and advocacy on HE in Asia-Pacific

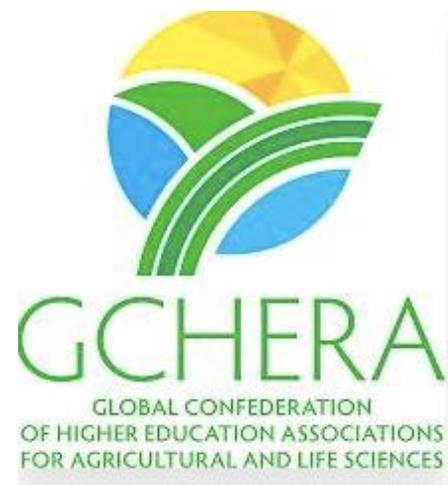
- 2018: GCHERA becomes a member of APAARI
- 2019: APAARI becomes member of GCHERA Steering Committee
- APAARI's participation in GCHERA World Agriculture Prize Award and GCHERA's 10th Conference on Transforming Higher Education in Nanjing, China
- 2018-2020: **Collaborative regional and global webinars** e.g. on...
  - ❖ Capacity development for agricultural innovation
  - ❖ How to make agricultural lectures more interactive for agricultural students
  - ❖ Experiential learning in agricultural education
  - ❖ Experiential learning in the face of COVID-19
- 2020: Contribution to the development of GCHERA's roadmap
- 2021-2022: APAARI-GCHERA partnership under the TAP and GFAR

# Integration of the Transforming Education Project Model in APAARI's work

- **APAARI has no focused programme for transforming HEIs**
- **Focus on mainstreaming HEIs involvement** in multi-stakeholder projects and processes through:
  1. **Blending the Transforming Education Project Model with the TAP Common Framework** approaches to encourage the use of improved methodologies and tools in teaching, in order to develop capacities for AIS; and help to institutionalize the framework, methodologies, tools and lessons in curricula
  2. **Integrating this “blending model”** in all APAARI projects, KM and CD activities where HEIs are involved, e.g. KM workshop in India and Iran, technical projects, i.e. Asia Pesticide Residue Mitigation Project; Biopesticide Development Project in South Africa; Phytosanitary Development Project in Bangladesh; Agroecology and Safe Food System Project in Southeast Asia (ASSET); analytical work – rapid joint appraisal; Regional Training on CD for AIS in Asia and Africa....
- **Revisiting the draft partnership framework** developed by APAARI-GCHERA in 2019 and scoping for new opportunities to work together under TAP and GFAR

# Alignment with TAP and GFAR

- APAARI's and GCHERA's focus on capacity development is aligned with the goal of the TAP Action Plan "**facilitating capacity development for agricultural innovation**"
- **Young people are central to future global development**, so it is essential that the education systems equip graduates to be leaders in catalysing innovation
- **HEIs also need to be empowered** to come forward in more active engagement and leadership to make change happen and contribute to sustainability
- EARTH University Model and experience under the Transformation Education Project, blended with the TAP Common Framework, to be used as an **international model** for preparing ethical leaders as agents of positive change in addressing social, economic and environmental challenges
- **Scaling up GCHERA Pilot Project and TAP-related initiatives** to interested institutions in Asia-Pacific, with focus on organizational and institutional development of HEIs to benefit small farmers



# Thank you!

