



# ANGEL

ERASMUS+ CBHE



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## **R1.7. ANGEL Institutional Strategies**

WP 1. Customization and training





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## Executive Summary

The ASEAN Network for Green Entrepreneurship and Leadership (ANGEL) project represents a collaborative effort among selected EU and ASEAN institutions, co-funded by the Erasmus+ Programme of the European Union. This initiative aims to foster sustainable development and green entrepreneurship across the ASEAN region. Each partner institution has developed a strategic plan tailored to its unique context, leveraging its strengths and addressing specific challenges to contribute to the overall goals of ANGEL. Additionally, each institution focuses on empowering marginalized communities, ensuring that the benefits of green entrepreneurship reach those who need it most.

Universiti Teknologi Malaysia (UTM) integrates entrepreneurship into its curriculum and supports it through various centers such as UTM XCITE, UTM ICC, and UTM iLeaGue. The primary goals at UTM are to develop capacity in green entrepreneurship, create a supportive ecosystem, and achieve self-sustainability. Key initiatives include establishing the ANGEL Innovate Unit, conducting training workshops, and fostering a network of stakeholders. UTM specifically targets marginalized groups such as Afghan refugees and the urban poor around Kuala Lumpur, aiming to provide them with the skills and opportunities to create sustainable businesses and improve their livelihoods.

At Universiti Tun Hussein Onn Malaysia (UTHM), the focus is on enhancing technopreneurship and social entrepreneurship through the University Technopreneurship Centre (PTU). UTHM aims to integrate green entrepreneurship into existing programs, foster a supportive ecosystem, and ensure sustainability. Their strategic initiatives involve training workshops, developing a green entrepreneurship curriculum, and creating a network of green entrepreneurs. UTHM targets single mothers in the Batu Pahat community in upskilling them with green businesses knowledge in order to help them achieve economic independence and contribute to environmental sustainability.

Universiti Malaysia Kelantan (UMK) emphasizes entrepreneurship across all faculties and aspires to be Malaysia's leading entrepreneurial university. The goals at UMK include creating a holistic entrepreneurial ecosystem, enhancing research and innovation, and contributing to national entrepreneurship agendas. Key initiatives involve establishing the UMK Entrepreneurship Institute (UMKEI), conducting green innovation programs, and fostering community engagement. UMK focuses on MSME (Micro, Small, and Medium-sized Enterprises) entrepreneurs in the Kota Bharu District, aiming to foster sustainable innovation and economic empowerment through green entrepreneurship.

Universitas Gadjah Mada (UGM) in Indonesia aims to develop leaders in green entrepreneurship and leadership through its various centers and programs. UGM's goals are to promote green business practices, foster research and development, and build a supportive ecosystem. Their strategic initiatives include establishing the ANGEL Innovate Unit, conducting training and workshops, and developing a green entrepreneurship curriculum. UGM targets disadvantaged groups, particularly women, individuals with low income, and residents from rural areas in Yogyakarta who marginally survive through low income activities. Hopefully, with ANGEL, they could develop green businesses and improve their economic prospects.

The Islamic University of Indonesia (UII) integrates Islamic values with green entrepreneurship through its innovation hubs and grants. UII's goals are to strengthen green entrepreneurship, foster continuous innovation, and achieve sustainability. Key initiatives include establishing the ANGEL Innovate Unit, conducting training programs, and





developing green business models. UII focuses on rural entrepreneurial communities, MSMEs, and people with disabilities to join and learn about green businesses and improve their livelihoods.

The University of South-East Asia (USEA) in Cambodia focuses on promoting green entrepreneurship and leadership within the local community. USEA aims to incorporate green entrepreneurship into curricula, enhance research and development, and foster national and international cooperation. Their strategic initiatives involve establishing the ANGEL Innovate Unit, conducting training workshops, and developing a green entrepreneurship curriculum. USEA targets local entrepreneurs and community members to join ANGEL'S training and support them to develop green businesses to contribute to sustainable development.

The Institute of Technology of Cambodia (ITC) advances applied research and commercializes research outputs through its innovation centers. ITC's goals are to promote green entrepreneurship, foster innovation, and achieve sustainability. Key initiatives include establishing the ANGEL Innovate Unit, conducting training and workshops, and organizing innovation challenges. ITC focuses on disadvantaged groups, particularly women, individuals with low income, and residents from rural areas in Kampong Chhnang Province, providing them with training and support to develop green businesses and improve their economic prospects.

The Royal University of Phnom Penh (RUPP) integrates green entrepreneurship into ecotourism and community development. RUPP aims to promote green business practices, foster research and development, and build a supportive ecosystem. Their strategic initiatives involve establishing the ANGEL Innovate Unit, conducting training and workshops, and developing a green entrepreneurship curriculum. RUPP targets non-urban students and local communities in addressing issues of green businesses and contribute to environmental sustainability.

Savannakhet University (SKU) in Laos focuses on developing green entrepreneurship in agriculture. SKU's goals are to enhance green entrepreneurship, foster innovation, and achieve sustainability. Key initiatives include establishing the ANGEL Innovate Unit, conducting training workshops, and developing a green entrepreneurship curriculum. SKU targets *SENGSAVANG*, a Lao civil society organization which is a non-partisan and non-religious organisation providing protection and assistance to victims and girls at risk of human trafficking and sexual exploitation in Laos. In addition to providing holistic care and recovery for those rescued, SKU will collaborate with *SENGSAVANG* to **offer ANGEL training modules, job skills development and micro-business starter kits, together with selected students to support a sustainable community reintegration** and active group support.

Champasak University (CU) in Laos provides technical services in green entrepreneurship and leadership. The university aims to strengthen green business practices, foster research and development, and build a supportive ecosystem. Their strategic initiatives involve establishing the ANGEL Innovate Unit, conducting training workshops, and developing a green entrepreneurship curriculum. Champasak University targets local entrepreneurs and community members to significantly drive green business concepts and awareness on sustainable development.

Can Tho University (CTU) in Vietnam develops innovation and entrepreneurship training through its Maker Innovation Space (MIS-CTU). CTU's goals are to build a strong entrepreneurship network, develop training programs, and foster a supportive ecosystem. Key initiatives include establishing the ANGEL Innovate Unit, conducting training workshops, and developing a green entrepreneurship curriculum. CTU targets fresh first-year students and locally-challenged





industries in providing training and support to nurture green entrepreneurial leaders who could appreciate essences of sustainable development.

Hanoi University of Mining and Geology (HUMG) in Vietnam integrates green entrepreneurship into academic programs and research. HUMG aims to promote green business practices, enhance research and development, and build a supportive ecosystem. Their strategic initiatives involve establishing the ANGEL Innovate Unit, conducting training workshops, and developing a green entrepreneurship curriculum. HUMG targets local entrepreneurs and community members who face hardships and difficulties in their business, providing them with training and support to develop green businesses and contribute to sustainable development.

In summary, each institution tailors its strategic planning to leverage its unique strengths and address its specific challenges, contributing to the overall goal of fostering green entrepreneurship and leadership across the ASEAN region. Through these collaborative efforts, ANGEL aims to create a robust ecosystem for green entrepreneurship, driving innovation and sustainability throughout the region.





ASEAN Network for Green Entrepreneurship and Leadership (ANGEL) is a dream for a better future of an inclusive ASEAN. The project is inherently co-funded by the Erasmus+ Programme of the European Union and depict a collegiate and concerted effort of selected EU and ASEAN institutions to transform opportunities into effective sustainability for network of stakeholders within and across global partners.

Currently, it is almost a common generic that institutions in ASEAN promote entrepreneurship as academic programs, research and community services agenda, linking with industry and some even go further to inculcate it as an organizational culture. This has somewhat contributed to the growing number of entrepreneurs in ASEAN. Nonetheless, there is also a sudden realization among ASEAN higher education as well as industry creators that the ongoing efforts are not enough. Issues of societal, ecological and governance degradation rise amidst modernisation and globalization within the ASEAN settings. While the number of graduates becoming entrepreneurs increase, marginalized groups linger and over consumption of non-renewable resources bleeds. There is something missing in between which if unresolved may lead to further complexities in the ASEAN ecosystem.

Against this background, ANGEL views the urgent needs to develop capacity building of green entrepreneurial leaders who understand the needs to explore new opportunities and new business approaches. ANGEL follows an approach, mechanism and techniques that intend to play an active role in influencing societal change. It is a three- year project that focus on a) creating an effective framework for ANGEL through the concept of ANGEL Innovate Unit, b) developing an infrastructure based on the ANGEL Innovate Unit and capacity building of green entrepreneurial leaders through systematic training c) fostering a critical mass and ecosystem for ANGEL through involvement of various stakeholders namely students, HEIs staff, policy makers, community organisations and most importantly marginalized groups.

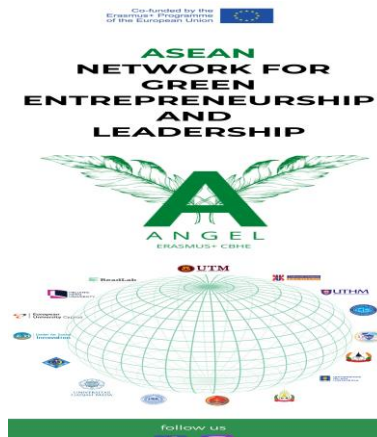
The ANGEL Strategic Planning document support the first stage of the project, namely to design how the ANGEL Innovate Unit framework could be practically implemented and sustained through realistic policy, structure, manpower and other resources, systems that effectively fit with each ASEAN partner HEIs. The following sections elucidates how each partner ASEAN HEIs plan to implement and sustain their ANGEL Innovate Unit based on their unique contextual nuances.







## STRATEGIC PLANNING - UTM



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA





## 1.0 CONTEXT

At Universiti Teknologi Malaysia (UTM), all undergraduate students are required to take a course in entrepreneurship. In addition, UTM students are encouraged to participate in entrepreneurial activities organised by the UTM Centre for Student Innovation & Technology (UTM XCITE), the Innovation and Commercialization Center (UTM ICC) and the Institute for Life-Ready Graduates (UTM iLeaGue). UTM XCITE is a collaborative centre - between UTM communities, SMEs, and entrepreneurship development agencies - in innovative and entrepreneurial learning for unleashing the spirit of collaborative innovation and entrepreneurship. UTM ICC is the coordinator for all faculty incubators at UTM. They provide support to entrepreneurs and Startups for commercialization, training, and mentoring. UTM iLeaGue is an institution responsible for enriching experiential learning through curriculum and co-curriculum as well as student academic development programs as an effort for students' readiness before entering the working world.

An academic staff is selected from the school or faculty to lead and report on their entrepreneurial activities. At Azman Hashim International Business School (UTM AHIBS), entrepreneurial activities are organised by AHIBS Business Incubator (AHIB i-Lab), UTM-Innovation and Commercialization Center (UTM ICC), UTM-iLeague, UTM-Xcite and three entrepreneurial classes (New Venture Creation, Techno Entrepreneurship). The activities included MBA Postgraduate Business Ideas competition 2022, Entrepreneurship Workshops Series 2022: Jom Set-Up Online Business and ESG - Agro Business Development.

At UTM AHIBS, the New Venture Creation (NVC) course is one of the core courses of the Master of Business Administration (MBA) programme. The course is based on experiential learning where students are introduced to the concepts of entrepreneurship and starting a new business. In this course, students acquire knowledge and develop their entrepreneurial skills and abilities by conducting research activities that consist of collecting primary and secondary data on the size, growth and revenue projections of a particular industry, conducting a feasibility study and market validation, presenting their business ideas and developing a business plan. In class, students use the Business Model Canvas to discuss business ideas and determine the viability of the business in the group. NVC thus focuses on the process of starting a new business, beginning with developing business ideas, conducting feasibility analysis and market validation, presenting the business idea, and writing a viable business plan. This course is a prerequisite for advanced courses such as Techno-Entrepreneurship and Commercialisation and Innovation, which are compulsory courses in the MBA Techno-Entrepreneurship concentration programme. The advanced course of Techno-Entrepreneurship (TI) is designed for students who want to learn how to start and run a technology-based business. This course combines traditional classroom learning with hands-on experience and interaction with entrepreneurs and other industry players. The course covers strategies for evaluating the potential of new ventures to improve high-impact business success. The Case studies of technology-based companies are used to illustrate the challenges faced by technology companies, including financial and human resource issues. The course's design thinking approach enables students to understand customer needs, redefine problems and develop innovative solutions. This approach enables students to develop and test prototypes and ultimately improve the offering.







Meanwhile, the Commercialisation and Innovation (CI) course focuses on the innovation process and the key elements of commercialisation. The course covers a wide range of innovation topics, including current theories and models of innovation, the process of bringing innovations to market, positioning for successful launch and subsequent growth, intellectual property issues, challenges associated with commercialising new products, and issues associated with identifying and evaluating technology opportunities. In addition, the course provides students with the tools to successfully manage product development cycles from idea generation to commercialisation. At the end of the course, students will be able to develop a wide range of appropriate digital technologies and/or suitable software to enhance commercialisation practices and business transactions.

To put theory into practise, AHIBS Business Incubator Start-ups (AHIBS i-Lab) was established in December 2021 with the aim of supporting start-ups and small firms. AHIBS i-Lab provides an appropriate and secure fully furnished office with biometric access and a dedicated mailing address at UTM AHIBS Kuala Lumpur. In addition, AHIBS i-Lab offers a business coaching programme, an office workstation with fax, telephone, photocopy and internet access (LAN and Wi-Fi) and an office postbox. To enhance the knowledge and skills of entrepreneurs, AHIBS i-Lab also offers a range of consultations to help entrepreneurs better define their business ideas, up to and including the full preparation of the business plan, covering all relevant aspects and the feasibility of the business. Currently, six (6) entrepreneurs are members of the AHIBS i-Lab. These are AHIBS students who have already completed courses on New Venture Creation and/or Techno-Entrepreneurship and/or Commercialisation and Innovation.

In short, all three MBA entrepreneurship courses involve the process of starting a new venture, prototyping and commercialization from a commercial enterprise perspective. The social entrepreneurship perspective has not been formally integrated into the curriculum. Currently, the Social Entrepreneurship course is offered as an elective course in the MBA Techno-Entrepreneurship concentration.

(a) Institution Level

The development of green entrepreneurship and leadership activities at UTM are undertaken by three units. They are responsible for the planning and execution of these activities. These units are:

1. UTM Centre for Student Innovation and Technology Entrepreneurship (UTMXCITE)

This centre intends to be a collaborative centre for innovative and entrepreneurial learning for students. The establishment of UTMXCITE was an outcome of the synergy between UTM Technology Entrepreneurship Centre (UTMTEC) and Centre for Student Innovation (CSI) in 2017. This centre is responsible for the development of entrepreneurship co-curricular and extracurricular activities among the students, especially the undergraduate students. In addition, this centre also supports the Institute of Life-Ready Graduates (UTM





iLeaGue) and other faculties at UTM to embed the elements of entrepreneurship in the curriculum. For example, UTMXCITE organises Sustainable Entrepreneurial Mindset Showcase (SEMS) competition, a signature program that has been embedded in the Fundamental of Entrepreneurship subject (compulsory to all undergraduate students) since 2019. In this competition, all students are encouraged to develop innovative solutions to the 17 challenges of the SDGs and present their ideas using the Business Model Canvas (BMC). In addition, UTMXCITE has organised several series of Startup Weekend @ UTM Johor Bahru under the licence of TechStar based on several themes including eco-innovation and SDGs.

## 2. UTM Campus Sustainability (UTM CS)

UTM Campus Sustainability aims to realise a sustainable lifestyle as a personal and community culture and to provide future generations with positive examples to emulate and continuously improve based on: (a) sustainable practises, (b) healthy living culture, and (c) low carbon society. Since its establishment in 2011, there have been efforts and initiatives taken by the unit to develop sustainable practice among UTM communities such as the zero waste initiatives and the establishment of UTM sustainable development solution network (SDSN). Besides, this unit has also conducted several green campaigns and promotions such as:

- a. No single-use plastic in campus with empowerment of SDGs
- b. Car free day
- c. Planting tree with volunteers at UTM Campus
- d. Active energy index and saving energy.

## 3. UTM Centre for Community & Industry Network (CCIN)

UTM CCIN is a unit under the Deputy Vice-Chancellor (Research and Innovation). It strives to play a leading role in community transformation through partnership between UTM, industry and society. This unit is responsible for fostering a culture of collaborative innovation to encourage sustainable engagement through the use of research, teaching and learning, and value-added services. UTM CCIN encourages the UTM community to engage in impactful collaborations with industry partners and target audiences through translational research, particularly through knowledge transfer programs. Under these initiatives, numerous projects have been implemented on 5 key areas namely: (a) social entrepreneurship, (b) improving education, (c) capacity building, (d) environmental sustainability, and (e) improving livelihoods.

### (b) National Level





The National Entrepreneurship Policy 2030 (NEP 2030), launched by the Ministry of Entrepreneurship Development and Cooperatives (MEDAC) in 2019 as a long-term national strategy that aims to transform Malaysia into an entrepreneurial nation by the year 2030. There are five main objectives outlined in the NEP 2030 as follows:

1. To create a holistic and conducive entrepreneurship ecosystem for sustainable, balanced and inclusive socio-economic development in Malaysia
2. To develop a Malaysian community with entrepreneurial mindset and culture
3. To produce quality, viable, resilient and competitive entrepreneurs with global mindset
4. To scale up local enterprises and SMEs
5. To make entrepreneurship as a preferred choice of career

In addition, the Ministry of Higher Education (MOHE) through the Entrepreneurship Action Plan governs the development of entrepreneurship among university students for Higher Education Institutions (2021 - 2025). At the national level, MOHE aims to produce balanced and holistic graduates with entrepreneurial mindsets and to nurture 'job creators' rather than just grooming 'job seekers'. Based on this plan, each university has been given several KPIs to achieve such as the percentage of student entrepreneurs conducting business on campus, the percentage of graduate entrepreneurs who venture into entrepreneurship after graduation, and number of teaching staff with entrepreneurship expertise.

## 1.1 ANALYSIS

In assessing UTM's efforts to support the green entrepreneurship initiative, we focus on the SWOT-TOWS Matrix to analyse this agenda against three (3) basic principles, namely a) green, b) entrepreneurship, c) central leadership. First, a SWOT analysis was performed to assess the internal environment (Strengths (S) and Weaknesses (W)), and the external environment (Opportunities (O) and Threats (T)). Strategies were then developed based on the components SO, OW, TS and TW. Please see Box 1.1 for more details.

Box 1.1: SWOT-TOWS Analysis

Internal	Strengths	Weaknesses
	1. Central leadership	1. Lack of focus on green entrepreneurship
	2. Infrastructure - UTMXCITE	2. Lack of university community awareness of UTMXCITE support
	3. Pool of entrepreneurship experts	
	4. Entrepreneurship-oriented courses	





	<p>(e.g. New Venture Creation, Tecno-Entrepreneurship and Commercialisation and Innovation) 5. Incubator program - Satellite incubator based in Pasir Mas, Kelantan</p>	<p>3. Low reporting on ecopreneurial activities and ventures 4. Lack of green funding especially in supporting local, community projects with a focus on sustainable, ecologically friendly agriculture. 5. Lack of focus on eco-advisory planning and strategy</p>
<b>External</b>		
<p><b>Opportunities</b></p> <ol style="list-style-type: none"> <li>1. Government's support for training of graduate entrepreneurs</li> <li>2. Green entrepreneurship training programme</li> <li>3. Growing public interest in green issues</li> <li>4. Focus on renewable energy especially on solar panel installation</li> <li>5. Government incentives for agricultural project</li> </ol>	<p><b>SO</b></p> <ol style="list-style-type: none"> <li>1. Encourage government and university's support for the UTM community (staff and students) in promoting green entrepreneurship</li> <li>2. Implement and promote the "trainers of trainers" initiative</li> <li>3. Educate the public on the concept of green entrepreneurship</li> <li>4. Install solar panels on fishing boats to replace diesel</li> <li>5. Secure a government grant to implement Kelulut honey farming project</li> </ol>	<p><b>OW</b></p> <ol style="list-style-type: none"> <li>1. Review and adaptt the university's policies and /goals to support green entrepreneurship</li> <li>2. Conduct a marketing campaign to raise awareness of the supports offered by UTMXCITE (e.g. visits to schools /faculties /departments by UTMXCITE)</li> <li>3. Develop a long-term strategy based on a sustainable environmental philosophy</li> </ol>
<p><b>Threats</b></p> <ol style="list-style-type: none"> <li>1. Low awareness of green entrepreneurship</li> <li>2. Low research into environmentally friendly processes and products</li> </ol>	<p><b>TS</b></p> <ol style="list-style-type: none"> <li>1. Conduct marketing campaigns to promote the concept of green entrepreneurship through high-impact programs or competitions</li> <li>2. Place an emphasis on research and development to improve eco-friendly product</li> </ol>	<p><b>TW</b></p> <ol style="list-style-type: none"> <li>1. Educate the civil community about the importance of green entrepreneurship</li> <li>2. Collaborate</li> </ol>

## 1.2 STRATEGY

The ANGEL project at UTM is strategized according to the following mission, vision, long term goals, objectives and milestones:





## Vision

Being a hub for national green entrepreneurial leaders.

## Mission

ANGEL Innovate Unit leads in educating green entrepreneurial leaders among faculty and administrative staff, and the community by disseminating knowledge and building capacity in green entrepreneurship - leadership, building the ANGEL ecosystem and enhancing UTM collaborations with intra and extra University partners (ie. University leadership, faculty members, administrative and technical staff – mentors, businesses, state agencies, funding agencies, etc.) and developing experts in commercialising UTM knowledge and technology.

Long-term Goals, Objectives, and Milestones:

### Strategy 1: Create UTM expertise

Long-term Goal 1: Building the capacity of UTM's teaching and administrative staff and the community

Objective 1 & Milestones: Organize and conduct training workshops on entrepreneurial and commercialization for 25 UTM teaching and administrative staff in the first quarter (Q1), 2023.

Objective 2 & Milestones: Conduct entrepreneurship and commercialization workshops for the community (students entrepreneurs and marginalized groups) in (Q1), 2023.

### Strategy 2: Create supportive ANGEL ecosystem

Long-term Goal 2: Create ANGEL Innovative ecosystem and sustainable partnership

Objective 1 & Milestones: Create a sustainable network of individuals to support the intra-university ANGEL network at UTM in the Q1, 2023.

Objective 2 & Milestones: Broaden UTM's extra-university network (i.e. mentors, businesses, state agencies, funding agencies, etc.) in Q2, 2023.

### Strategy 3: Develop successful brand building for ANGEL Innovative Unit





Long-term Goal 3: Build credibility and visibility of the ANGEL Innovative Unit

Objective 1 & Milestones: Develop the UTM ANGEL Innovative Unit's website in Q1, 2023 to disseminate and promote the Green Entrepreneurship - Leaderships modules /programs among UTM members and the community, collaborating partners and the public

#### Strategy 4: Establish an ANGEL infrastructure and build a network

Long-term Goal 4: Establish a ANGEL community and a ANGEL hub

Objective 1 & Milestones: Equip the unit with high-tech tools and consumables, and other equipment to enable students, faculty members and communities to develop ideas and realise their entrepreneurial and leadership agendas ( Q1 2023).

Objective 2 & Milestones: Develop ANGEL Community Facebook Group page as a source of information on ANGEL tools and events, opportunities and networking, in Q1, 2023.

Objective 3 & Milestones: Establish ANGEL as a hub for tech entrepreneurship and start-ups development in Q1 2023.

#### Strategy 5: Achieve Self Sustainability for ANGEL Innovative Unit

Long-term Goal 5: Achieve Self Sustainability by offering green entrepreneurship training and other services

Objective 1 & Milestones: Offer green entrepreneurship training to new entrepreneurs and businesses as well as to the community, in Q1, 2024.

Objective 2 & Milestone: Lease space for temporary office and meetings in Q1, 2024.

Objective 3 & Milestone: Offer a range of consultancy services and research for start-ups, businesses and government/private companies in Q1, 2024.

#### Strategic Levers

1. UTMXCITE's role in fostering the entrepreneurial ecosystem among students at the university level should be strengthened through the implementation of other green entrepreneurship initiatives. In this context, some specific programmes on green entrepreneurship and leadership are suggested below:





- a. Green entrepreneurship and leadership awareness program
- b. Green Entrepreneurship Hackathon among students (e.g. Startup Weekend)
- c. Green Innovation bootcamp with selected communities

2. UTM has a pool of entrepreneurship and environmental experts who are able to provide training on green entrepreneurship and leadership areas. However, a consortium on green entrepreneurship and leadership should be formed among the experts to enable them to communicate, collaborate and execute impactful programs related to green innovation and entrepreneurship to the students and community. In addition, it is proposed to conduct capacity building in green entrepreneurship and leadership to improve the skill and knowledge of experts.

3. The Entrepreneurship Incubator for the students. As currently structured, the incubator infrastructure is provided by two units at UTM, namely UTMXCITE and AHIBS (mainly for post-graduate student start-ups). UTMXCITE has recently revived its post-pandemic incubator program at the Johor Bahru campus, with five student companies selected to join the program in 2022. Selected undergraduate students who have started their own businesses, especially in the field of innovation, run these startups. UTMXCITE intends to expand its business incubator to other types of businesses in 2023, such as hairdressing, retail and computer services.

In addition, AHIBS Business Incubator Start-ups (AHIBS i-Lab) was established in December 2021 with the aim of supporting start-ups and small firms. AHIBS i-Lab provides a proper and secure fully furnished office with biometric access and a dedicated mailing address at UTM AHIBS Kuala Lumpur. In addition, AHIBS i-Lab offers a business-coaching programme, an office workstation with fax, telephone, photocopy and internet access (LAN and Wi-Fi) and an office postbox. To enhance the knowledge and skills of entrepreneurs, AHIBS i-Lab also offers a range of consultations to help entrepreneurs better define their business ideas, up to and including the full preparation of the business plan, covering all relevant aspects and feasibility of the business. Currently, six student entrepreneurs are members of the AHIBS i-Lab. These AHIBS students have already taken courses on entrepreneurship in their MBA program. The AHIBS i-Lab can expand its services to support green entrepreneurship and leadership projects and activities, as well as start-ups.

#### 4. Curriculum Design and Development.

The Deputy Vice Chancellor's Department (Academic and International) manages curriculum development at UTM through the Institute for Life-Ready Graduates (UTM iLeaGue) and the School of Postgraduate Office (SPS). Based on the policy outlined by the MOHE, all undergraduate students are required to include the





subject 'Introduction to Entrepreneurship' subjects in their curriculum from 2017. This subject has been revised and renamed 'Entrepreneurship and Innovation' from 2023 to reflect the current context of entrepreneurship, which focuses on the technology and innovation-driven aspects. Nevertheless, the green or sustainable sector is not explicitly taught in the entrepreneurship. This aspect can be embedded as a sub-chapter in the subject of entrepreneurship. Moreover, there are few subjects related to green entrepreneurship offered by faculties based on their curriculum development for the academic program. For example, the Faculty of Management offers Technology Entrepreneurship as an elective for Technology Management and Accounting students.

### Model of ANGEL

The UTM ANGEL Innovate model is based on the four elements, namely Structure, Focus, Pedagogical Approach, and Support Structure. The descriptions and tasks in relation to the four components are presented in the following:

#### Element 1 - Structure

##### Structure: Cooperation of Universities

The formation of the ANGEL Innovate Unit will be based on the cooperation between experts across universities. Hence, key tasks to be conducted are:

- a. Identification of experts who can deliver training on green entrepreneurship and leadership aspects
- b. Formation of task force to monitor the execution of the ANGEL Innovate Unit
- c. Appointment of the ANGEL Innovate Unit task force at the university level
- d. Organise a periodical meeting to discuss the progress of the ANGEL innovate unit
- e. Prepare progress report

#### Element 2 : Focus

##### Focus: Education and Mentoring

The key activities of the ANGEL Innovate Unit would focus on the aspect of education and mentoring. This is because green entrepreneurship and leadership development at UTM at the embryonic stage, and a group of







'angels' among UTM staff and students need to be groomed through education and mentoring activities. Therefore, the implementation of key tasks includes:

- a. Development of training modules related to green entrepreneurship and leadership.
- b. Launch marketing campaign to develop the awareness of the UTM community on green entrepreneurship and leadership, as well as the support system provided by ANGEL Innovative Unit
- c. Recruitment of potential angels (participants) among the students and staff
- d. Organise a series of intensive training boot camp for the angels
- e. Conduct business pitching activities in order to evaluate the feasibility of the entrepreneurship project proposals by the angels
- f. Assign relevant mentors to the angels in executing the projects until a few startups can be established from the project
- g. Prepare progress reports

### Element 3 : Pedagogical Approach

#### Pedagogical Approach: Design Thinking

The ultimate goal of the ANGEL innovate unit is to nurture more champions in the area of green entrepreneurship and leadership among the UTM community. Therefore, a better understanding of the importance of green entrepreneurship for the targeted community is crucial to create impactful projects. In order to ensure this, a design thinking approach is proposed in the delivery of relevant pedagogy for the ANGEL. Key tasks to be conducted are:

- a. Design a green entrepreneurship challenge based on the needs of the targeted community using design thinking processes (empathy, define, ideate, prototype and test)
- b. Identify key teaching activities to be conducted based on the challenge that is designed in Part A.
- c. Provide necessary resources to the participants in executing the project.

### Element 4 : Support Structure

#### Support Structure: Coordination + Education, Startups and Incubators





The operations of the ANGEL Innovation Unit would not be a success without a strong support structure. Hence, there are three (3) important aspects to be considered in developing the unit as follow:

### 1. Coordination + Education:

The delivery of the ANGEL program requires an integrated coordination as well as continuous education program to the participants. Hence, several tasks to be executed are:

- a. Create a coordination platform that is able to connect between participants and organising committee members (e.g. WhatsApp group)
- b. Conduct a periodical meeting and discussion between the participants and committee members
- c. Provide a learning toolkit to the participants

### 2. Start-ups:

The ANGEL Innovative Unit will also provide essential support services to the new startups that are established under the ANGEL program. In order to achieve this, several tasks need to be done as follows:

- a. Identify the types of support services needed by the startup
- b. Conduct a training need analysis to identify the types of training and development needed by the startup
- c. Consult and connect the startup with relevant stakeholders in business (e.g. financial assistance provider, training agency and supply chain players)
- d. Prepare a progress report

### 3. Incubator:

To provide a conducive environment for the ANGEL participants, a formation of incubator facilities would support the startup and participants involved in the program. In the incubator program, key tasks to be done are:

- a. Identify the support that will be given through incubator program (e.g. workplace, advisory and access to funding)
- b. Identify the location of the incubation program and infrastructure needed
- c. Prepare paperwork to gain approval from the top management of UTM
- d. Appoint key person who will be in charge on the management of the incubation program
- e. Plan and organise entrepreneurship development activities for the incubatees
- f. Prepare a progress report





### 1.3 ACCOMPANYING MEASURES

In order to ensure the long term effectiveness of the ANGEL Innovate Unit, we have identified the potential risks and developed the risk mitigation plans. The risks identified are derived from five (5) categories, namely technical, management, maintenance, procurement, and Self-Sustaining Unit. With this regard and the risk mitigation plans have been developed and presented in Table 2.

Table 1.4: Potential Risks and Risk Mitigation Plans

Risks	Risk Mitigation Plans
Technical i. System breakdown and update	i. Stand-by technical support staff to support on system breakdown ii. Provide up-to-date training to technical support staff, if required
Management i. Items lost by movers ii. Disorder lab usage (too many lab users at a time) iii. Lack of a dedicated IT person to manage the technology and ecosystem	i. Quarterly stock-take and audit. ii. Allow online and manual booking iii. Hire admin staff to take care of the Unit.
Maintenance i. Ensure cleanliness of physical space and facilities	i. To develop and share hardcopy of the User Manual in guiding the users in taking care of the physical environment and facilities, and provide signage for special reminders. ii. Cleaner to sign attendance book after daily cleaning session.
Procurement Delays to the procurement of equipment	i. Start the procurement procedures early to ensure that the unit will be ready and operational





Risks	Risk Mitigation Plans
Self-Sustaining Unit The unit which is not self-sustaining risk a failure after ANGEL project completion	i. The unit will create self-sustaining projects such as delivering training program, leasing space, consulting and research





## 1.4 INSTITUTIONALIZATION

For effectiveness, the operation of the entrepreneurship centre could be integrated into the organisational structure of the university. It has to be recognized as such by the university council. Based on the current structure of entrepreneurship ecosystem at UTM, there are two units responsible for the development of entrepreneurship capacity among the UTM community namely UTMXCITE and UTM ICC.

As mentioned earlier, UTMXCITE focuses on the collaborative centre for innovation and entrepreneurship learning among students, especially the undergraduate students and its young alumni. Meanwhile, UTM ICC focuses on enhancing the knowledge and competencies of UTM researchers or staff in the area of entrepreneurship and commercialization. This is because UTM aims to produce more spin off companies from research outputs. To date, UTM has forty-two (42) spin off companies.

## 1.5 INFRASTRUCTURE and EQUIPMENT

Adopting sustainable building and infrastructure design is one of the UTM campus sustainability policies. To support the green entrepreneurship and leadership initiatives, UTM has established eight Living Labs.

- Living Lab 1: Sustainable Arcade
- Living Lab 2: Green Office
- Living Lab 3: Sustainable Energy Management
- Living Lab 4: Bio-recycling centre
- Living Lab 5: Green School
- Living Lab 6: Green community
- Living Lab 7: Sustainable transport
- Living Lab 8: Biodiversity

Each living lab was designed to incorporate the pillars of social, economic, environmental and can be interpreted and used as a human-centric research and development approach. Living Lab 1, 2 and 3 was launched from 2011 onwards, in tandem with UTM Energy Policy on 29 May 2011. Living Lab 4, 5 and 6 was established between 2013 and 2014 while the other two more Living Labs were added after 2014.

At the faculty levels, initiatives on green entrepreneurship and leadership initiatives were also implemented. At the Faculty of Engineering (FE), for example, UTM Green Hub has been established and attracts student participation to drive sustainability activities. The hub aims to assist UTM and the community by providing training, community service and guidance on sustainable community development.





In Azman Hashim International Business School (AHIBS), the ANGEL Innovate Unit will be established and furnished with high-tech tools and accessories such as computer, laptop, projector, LED Screen, microphone and other equipments that allows the students, faculty members and communities to gather ideas and run their entrepreneurship and leadership agenda. Among the list of equipment are as below. The ANGEL Innovate Unit will reside within the main faculty lab, established as The Act Lab. Table 3 list ANGEL's equipments.

Table 1.5: List of ANGEL Equipment

Equipment	Details of Equipment
Arvia Interactive Smartboard	<ul style="list-style-type: none"> <li>● 65 inch</li> <li>● Professional Panel size 65 inch</li> <li>● Backlight : LED backlight • Resolution : 3840*2160</li> <li>● Brightness : 450cd/m2</li> <li>● Respond time : 9.5ms</li> <li>● Panel life : ≥50000 hours • Working power : ≤320W</li> <li>● Speaker : 8Ω/10W*2</li> <li>● Android specification</li> <li>● Android OS : Android8</li> <li>● RAM : 4G</li> <li>● Processor : MSD6A 638 ,ROM 32G</li> <li>● Touch points : 20 touch points</li> <li>● Integrated Wireless Sharing Android, Windows, IOS</li> <li>● Touch Technology : Infrared • Warranty : 3 years</li> <li>● Wall Mount Bracket Included Add On Slot PC :</li> <li>● Windows 10 pro , Processor Intel i7, 16GB Ram, 512 GB SSD</li> </ul>
Telescoping Sliding Height Adjustable Floor Stand TV Carts	<ul style="list-style-type: none"> <li>● For 55 To 80 Inch - SA80-T</li> <li>● Material: steel</li> <li>● Color: black</li> <li>● Loading Capacity: 200lbs/90.9kg</li> <li>● Tray Loading Capacity: 25lbs/11.4kg</li> <li>● VESA: 200*200 300*200 300*300 400*300 400*400 500*400 600*400 600*500 800*500</li> <li>● Adjustable Height: 1350- 1650mm</li> <li>● TV size: 55-80inch Finishing: powder black</li> </ul>
Printer: HP Color LaserJet Pro MFP M277dw (3-n-1)	<ul style="list-style-type: none"> <li>● Auto Tracking PTZ Camera - ARV VC100T ARV-VC100T</li> <li>● Model : ARV-VC100T</li> <li>● Sensor 1/2.8 inch high quality HD CMOS sensor</li> <li>● Effective Pixels 2.07 megapixel; 16:9</li> </ul>





Equipment	Details of Equipment
	<ul style="list-style-type: none"> <li>● Optical Zoom 12x optical zoom f=3.9~46.1mm 20x optical zoom f=4.7~94mm</li> <li>● View Angle 6.3°(tele)~72.5°(wide) 2.9°(tele)~55.4°(wide)</li> <li>● Iris F1.8 ~ F2.4 F1.6 ~ F3.5 Digital Zoom 10x</li> <li>● Resolution is up to 1920×1080 Low Noise CMOS effectively ensure high SNR of camera video.</li> <li>● Wide-range, Quiet and Quick Pan/Tilt Mechanism</li> <li>● By adopting step driving motor mechanism, ARV-VC100T camera works extremely quiet and moves smoothly without any noises.</li> </ul>
Projector	<ul style="list-style-type: none"> <li>● ViewSonic Pro9510L XGA Projector ViewSonic Pro9510L</li> <li>● Resolution: 1024x768 Brightness (ANSI Lumens): 6200lm</li> <li>● Contrast (with Dynamic Contrast Ratio): 8000: 1 Lamp Hour (Normal / Eco / DynamicEco): 1500hrs / 3500hrs</li> <li>● Throw Ratio in Meters (Wide ~ Tele): 1.3~2.21</li> <li>● Throw Distance: 0.79m-13.47m (100" @2.6m)</li> <li>● Lens Shift: Yes</li> <li>● Optical Zoom: 1.7x Digital Zoom: 0.8x~2.0x Screen Size: 30" - 300"</li> </ul>
LCD Projector (Portable)	<ul style="list-style-type: none"> <li>● Projector Screen - Ambient Light Rejecting</li> <li>● Fabric Black Crystal HG ALR-135</li> <li>● High Gain Normal Throw Ambient Light Rejecting Fabric Black Crystal HG</li> <li>● Overall Screen Size : 135" Model Name: Arvia Black Crystal HG</li> <li>● Front Color: grey</li> <li>● Back Color: white</li> <li>● Material: PET fabric + black crystal coating</li> <li>● Moisture Resistant: Yes</li> <li>● Gain: 2.0</li> <li>● Cleanable: Yes</li> <li>● Viewing Angle: 90 degree Thickness: 0.35 mm</li> </ul>
Microphone	<ul style="list-style-type: none"> <li>● Wireless Mic. 2unit WMic_02</li> <li>● Wireless Mic Comica Boom X-</li> <li>● Wireless Mic Comica Boom X-</li> <li>● 02</li> <li>● For Journalists, Vloggers, YouTubers</li> <li>● 2 x Transmitters with Built-In Mic &amp; Lav</li> <li>● Ultracompact 2-Channel Plug-In Receiver</li> <li>● 5-Hour Rechargeable Battery + USB</li> </ul>
Lighting	<ul style="list-style-type: none"> <li>● Nanlite LumiPad Lighting</li> <li>● Nanlite LumiPad 25</li> </ul>





Equipment	Details of Equipment
	<ul style="list-style-type: none"> <li>● 13.6 x 12.2 x 1.2" Panel Variable Color Temperature: 3200-5600K</li> <li>● CRI: 95, 0-100% Dimming Built-In Dual NP-F Battery Plate Soft Quality of Light</li> <li>● 110-240 VAC Adapter</li> </ul>
Smart LED TV samsung UA65TU7000	<ul style="list-style-type: none"> <li>● Samsung 65 Inch (UA65TU7000) 4K UHD</li> <li>● -Dynamic Crystal Display -Dual LED</li> <li>● -Crystal Processor 4K -3-side Boundless Design -4K Resolution</li> <li>● -HDR</li> <li>● -Game Enhancer</li> <li>● -Magic Screen</li> <li>● -Clean cable solution -Smart Hub &amp; One Remote Control</li> <li>● -Multi View</li> <li>● -AirPlay 2</li> <li>● -SmartThings Dashboard</li> <li>● -2 Years Samsung Warranty</li> </ul>
Floor stand	<ul style="list-style-type: none"> <li>● Telescoping Sliding Height Adjustable Floor Stand TV Carts For 55 To 80 Inch - SA80-T</li> <li>● SA80-T</li> <li>● Telescoping Sliding Height Adjustable Floor Stand TV Carts For 55 To 80 Inch - SA80-T</li> <li>● Material: steel</li> <li>● Color: black</li> <li>● Loading Capacity: 200lbs/90.9kg Tray Loading Capacity: 25lbs/11.4kg</li> <li>● VESA: 200*200 300*200 300*300 400*300 400*400 500 *400 600*400 600*500 800*500 Adjustable Height: 1350- 1650mm</li> <li>● TV size: 55-80inch</li> <li>● Finishing: powder black</li> </ul>
YAMAHA 12" PASSIVE SPEAKER CBR12	<ul style="list-style-type: none"> <li>● • 12" 2-Way Loudspeaker</li> <li>● • Custom-designed transducers and top-quality components add up to unequalled performance</li> <li>● • Extremely accurate 90 x 60 constant directivity horn</li> <li>● • Durable, compact plastic enclosures</li> <li>● • Symmetrical enclosure design for mirror-mode floor monitoring</li> <li>● • Input connectors supporting both speakON and phone plugs</li> <li>● • Installable with eye bolt rigging and brackets</li> </ul>
Laptop (Apple MacBook Pro 15"-	<ul style="list-style-type: none"> <li>● Macbook pro 13"</li> <li>● Apple M1 Chip with 8-Core CPU and 8-Core GPU</li> <li>● 512 GB Storage</li> <li>● Apple M1 chip with 8-core CPU, 8-core GPU, and 16-core Neural</li> </ul>







Equipment	Details of Equipment
Retina Display) x 2 pcs	Engine <ul style="list-style-type: none"> <li>● 8GB unified memory</li> <li>● 512GB SSD storage<sup>1</sup></li> <li>● 13-inch Retina display with True Tone</li> <li>● Magic Keyboard</li> <li>● Touch Bar and Touch ID</li> <li>● Force Touch trackpad</li> <li>● Two Thunderbolt / USB 4 ports</li> </ul>
Workstations	<ul style="list-style-type: none"> <li>● 3.3GHz 6-Core Processor with Turbo Boost up to 4.8GHz</li> <li>● 512 GB Storage</li> <li>● Retina 5K Display</li> <li>● 3.3GHz 6-core 10th-generation Intel Core i5 processor</li> <li>● Turbo Boost up to 4.8GHz</li> <li>● 8GB 2666MHz DDR4 memory, configurable up to 128GB</li> <li>● 512GB SSD storage<sup>1</sup></li> <li>● Radeon Pro 5300 with 4GB of GDDR6 memory</li> <li>● Two Thunderbolt 3 ports</li> <li>● Retina 5K 5120-by-2880 P3 display with True Tone (optional nano-texture glass available)</li> </ul>

The Angel Innovate Unit will be a place for meetings and training in green entrepreneurship and leadership. The space is designed to support consultation activity on business and community projects that involves both UTM staff, industry partners, and entrepreneurs. Local entrepreneurs, particularly the urban poor, the marginalised community, students, and an international audience will be targeted to be part of the Angel Innovate Unit ecosystem. As the space is equipped with high-tech communication equipment, it is capable of supporting online meetings and training.

## 1.6 THE ANGEL PROGRAM

Branding exercise will be carried out to promote the internal and external UTM community on the ANGEL Innovate Unit as well as strengthen its green entrepreneurial networking. In selecting the participants, the ANGEL Innovative Unit will channel down the promotional programme into two segments, namely, administrative and academic staff for the first stage. The proposal will be circulated via officers-in-charge to each of the respective units/departments/schools/faculties together with the relevant brochures with regard to ANGEL mission, vision, project deliverables, training plans and support ecosystem. Participants who are





interested in joining the training and development program will be required to fill-in an online registration form created by the UTM ANGEL Innovative Unit. In the next stage, this exercise will be repeated for the outside UTM community in promoting green entrepreneurship development.

Besides, the module of the training program will be tailored-made based on the suitability and capacity of the participants. In that spirit, the ANGEL Innovative Unit will specify the participant's background based on the details provided from the registration form. The content should be relevant to the current issues within the stipulated time and place. All modules (softcopy) will be circulated to the registered participants. Additionally, they will also be exposed to the real world scenario via case study discussions and presentations related to the green business. Throughout the session, all participants will be assessed to test on their understanding of the program. With this regard, an incubator lab will provide coaching and mentoring services in assisting new green entrepreneurship creation and management. In addition, tracer study will be conducted to monitor the development and sustainability of the start-ups produced by the ANGEL project. Besides, in ensuring the self- sustainability of the ANGEL Innovative Unit, the unit will generate its own income by continuously providing green entrepreneurial training and support services, lease space for temporary offices and meetings, and offer consulting services for its stakeholders.

## 1.7 ACTION PLAN

In terms of the action plan development, alignments have also been made according to the gantt chart of the ANGEL project. Table 4 displayed the action plan of UTM for the period of Quarter 4 (Q4), 2022 to Quarter 1 (Q1), 2024. The University will launch gap analysis in Q4, 2022. Next, in Q1, 2023 follows with the establishment of the ANGEL Innovate Unit, kick-starting the training of trainers, sensitization initiative that include awareness program and strengthening intra and extra networking, as well as training for the outside UTM community. Subsequently, Q2, 2023 continues with accompaniment exercise that involves post-training coaching, mentoring and incubation support. Finally, the UTM ANGEL Innovative Unit is targeted to realise self-sustainability by Q1, 2024 through income vegetation via continuous green entrepreneurial training, support and consulting services, and leasing office spaces.

Table 1.8: Action Plan of UTM

Activities	2022	2023				2024				2025
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1



Launch of Gap Analysis										
Establishment of the ANGEL Innovate Unit										
Training of trainers										
Sensitization (awareness programme & strengthening networking)										
Training										
Accompaniment (coaching, mentoring & incubation)										
Self-Sustainability										

## 1.8 RESOURCES AVAILABLE

Some resources that will benefit the UTM Angel Strategic Initiatives include:

### People

UTM has some experts in green entrepreneurship and leadership who could provide knowledge and practical guidance. According to the records, UTM has two faculties: the Azman Hashim International Business School and the Faculty of Management, which house experts in Green Marketing, Green Behavior, Green Leadership, and Green Business.

### Students' Activities

Many faculties at UTM have their own initiatives supporting the university's green entrepreneurship and leadership initiatives. For example, the UTM established the Green DNA Club on April 3, 2017 under the School of Chemical and Energy Engineering (SKT). The members of this association are students who are keen on volunteering and learning about sustainability activities to build a sustainable community. One of the activities included community service initiatives. For example, the Faculty of Built Environment and Surveying (FABU) has come up with the idea to construct a Bamboo Avenue as a living laboratory for campus-community engagement. The purpose of this activity is to educate the campus community about sustainability and green technologies. Bamboo Avenue will not only serve as a green project for UTM, but it will also become an iconic location for campus communities, attracting industry investors to develop Living Lab physically on campus.





## UTM Sustainable Campus

UTM Campus Sustainability is an initiative by the university to promote sustainable practices that include environmental, social, and economic impacts. It promotes a healthy living culture in UTM through events, seminars, and training. The team's goal is to create a master plan for a low-carbon city as well as a roadmap for implementation. Their target audience includes people in UTM, the local community, industry partners, and an international audience. The UTM Angel Strategic Plan will benefit from their expertise and connections.

## Funding

There is some funding available to support the green initiatives. Presently, UTM and other local organisations are potential funders. This includes an Environmental and Green Technology Small Grant Program to increase public awareness and understanding of the importance of caring for the environment and to encourage the use of green technology in the daily lives of the people of Selangor. The Ministry of Science, Technology, and Innovation also offers green technology and a financing scheme for small businesses. The Central Bank of Malaysia also offers financial facilities to start-ups in green sectors, including for research and development.

## Green Technology Master-Plan Malaysia, 2017–2030

The national master plan will assist in the formulation of strategies and activities for the UTM Angel Strategic Plan to ensure it is aligned with the national agenda. The Green Technology Master Plan outlines the strategic plans for green technology development to create a low-carbon and resource efficient economy. The document sets out the immediate course for the country to embark on a green growth journey. It lays the foundation for the cultivation of mindset and behavioural change, to inculcate a green lifestyle among the Malaysia citizens. The Master Plan is an important initiative to position Malaysia among the top countries in the world in economic development, citizen well-being, and innovation by the year 2050.

## Facility

As mentioned earlier, the Living Labs in UTM and the formation of the Angel Innovate Unit will serve as a locus of interaction, resources for knowledge and building connection. To date, we have 8 Living Labs that incorporate the pillars of social, economic, environmental and can be interpreted and used as a human-centric research and development approach. The Angel Innovate Unit will focus on green entrepreneurship and economy development, with support from high-tech communication technology.

## 1.9 TARGET MARGINAL COMMUNITIES





The ASEAN Network for Green Entrepreneurship and Leadership (ANGEL) at Universiti Teknologi Malaysia (UTM) is committed to fostering sustainable development and empowering marginalized communities in the region. For the upcoming project, we propose focusing on two distinct yet interconnected groups: Afghanistan refugees and the urban poor residing around Kuala Lumpur. This approach aligns with ANGEL's objectives to promote green entrepreneurship, enhance leadership skills, and address social inequalities within the ASEAN context.

UTM through its business school, AHIBS focuses on Afghanistan Refugees who resides within the vicinity of Kuala Lumpur due to three major reasons. Firstly, it is because of humanitarian needs and resilience. Afghanistan has been experiencing prolonged conflict and instability, leading to a significant refugee crisis. Afghan refugees in Malaysia face numerous challenges, including legal uncertainties, limited access to employment, and social integration issues. By focusing on this group, ANGEL can provide targeted support to individuals who are not only in dire need but also demonstrate immense resilience and potential. Supporting refugees aligns with the humanitarian values of the project and offers an opportunity to make a meaningful impact on their lives. Secondly, UTM views potentials for Green Entrepreneurship among the refugees. Since refugees come from a different background than the locals, they often bring new perspectives, diverse skills and innovative ideas. By providing training and resources in green entrepreneurship, ANGEL can help Afghan refugees leverage their talents to create sustainable businesses. This approach not only supports their economic self-sufficiency but also contributes to environmental sustainability. Green entrepreneurship training can empower refugees to start eco-friendly ventures, which can integrate traditional practices with modern sustainability principles. Thirdly, UTM strategizes to build bridges and inclusivity. Addressing the needs of Afghan refugees fosters inclusivity and strengthens social cohesion. By integrating refugees into the broader community through green entrepreneurship, ANGEL can help bridge cultural and social divides, promoting mutual understanding and cooperation.

On the other hand, UTM also intends to focus on the urban poor Around Kuala Lumpur because of the fact that the urban poor around Kuala Lumpur face significant challenges related to poverty, lack of access to basic services, and precarious living conditions. Many of these individuals live in informal settlements and have limited opportunities for economic advancement. By targeting this demographic, ANGEL can address the urgent needs of a large, vulnerable population that is often overlooked in broader development initiatives. In addition, the urban poor are often disproportionately affected by environmental degradation and climate change. Initiatives focused on green entrepreneurship can help these communities develop sustainable practices that improve their living conditions while reducing their environmental footprint. For example, projects could include waste management systems, energy-efficient housing solutions, or urban agriculture. Empowering the urban poor with leadership skills and entrepreneurial training can drive significant positive change at the community level. By providing resources and support, ANGEL can help individuals from marginalized backgrounds become leaders who advocate for sustainable development and social justice within their own communities.

The focus toward the two marginal groups will be done in synergy. Our strategies infuse the following:





- **Shared Learning and Collaboration:** Both Afghan refugees and the urban poor face economic and social challenges that can be addressed through green entrepreneurship. By bringing these groups together in training and support programs, ANGEL can facilitate mutual learning and collaboration. Refugees can share their unique perspectives and skills, while the urban poor can offer insights into local challenges and solutions.
- **Community Integration:** Fostering interactions between refugees and local urban poor communities can enhance social cohesion and mutual support. Joint projects and community initiatives can help build relationships, reduce social tensions, and create a more inclusive environment for all participants.
- **Comprehensive Approach to Sustainability:** A dual focus on refugees and the urban poor allows ANGEL to address sustainability from multiple angles. This holistic approach ensures that green entrepreneurship initiatives are not only environmentally sound but also socially equitable, creating broader and more lasting impacts.





## STRATEGIC PLANNING - UTHM

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### ASEAN NETWORK FOR GREEN ENTREPRENEURSHIP AND LEADERSHIP





## 2.0 CONTEXT

Malaysian green entrepreneurship practices are linked to the green economy, which was initially introduced in 2017 under the Green Technology Master Plan (GTMP). Today, green economic activities are being facilitated with the formation of the Malaysian Green Technology and Climate Change Center (MGTC). The MGTC is in charge of mainstreaming the green economy through programmes such as the MyHIJAU Mark Certification Program, the Green Technology Financing Scheme (GTFS), and the Green Technology Investment Tax Exemption (GITE). Furthermore, MGTC promotes green economy awareness through training and human capital development programs. While many other government organizations focus on entrepreneurship, the MGTC is regarded as a pioneer in promoting green economy and entrepreneurship, with the sustainable environment as its main purpose, aiming for the participation of industry players.

At Universiti Tun Hussein Onn (UTHM), green entrepreneurship is still a relatively new concept on an institutional level. However, UTHM has set up the University Technopreneurship Centre (Pusat Teknousahawan Universiti, PTU) to oversee entrepreneurial activity on campus. PTU is UTHM's effort in accordance with the Entrepreneur Development Policy of the Ministry of Higher Education (MOHE). With the establishment of PTU, UTHM intends to foster and enhance entrepreneurship development by enabling entrepreneurial activities to be carried out in an organized and holistic manner, specifically to produce quality students with entrepreneurial thinking, traits and values. Thus, PTU serves as a platform for integrating the concept of green entrepreneurship towards achieving ANGEL's objective of addressing green entrepreneurship and transformational leadership and social innovation challenges.

In order to meet the needs of society and the nation, PTU is committed to widely educating UTHM students about technopreneurship and social entrepreneurship activities, as well as developing top-tier human capital with creative, innovative, and honourable moral and intellectual personalities. Therefore, PTU supports the following three university entrepreneurship policies to promote the spirit of student empowerment: i) UTHM Student Entrepreneurship Policy, ii) Work@Campus Guidelines, and iii) Student Entrepreneurship Incubator Guidelines.

i. UTHM Student Entrepreneurship Policy:

This policy involves UTHM students who are interested in being guided to conduct business at the University through an established student start-up company. The policy outlines what students must do to comply with the law while starting their own businesses. It also describes entrepreneurship programs, strengthening the role of student entrepreneurship advisors, and the “mentor-protégé” system. The University facilitates the implementation of this policy by providing business/incubator space. In addition, the policy focuses on student entrepreneurs' responsibilities to identify obligations and hazards and develop a plan to address them.

ii. Work@Campus (W@C) Guidelines:







Understanding the need for a technologically and innovatively based workforce on a national scale, the University developed the W@C program to help students get a head start in the business world while they are still in school. UTHM students are encouraged to start their own businesses as part of an initiative to boost the number of student entrepreneurs. For the UTHM student entrepreneurship program to be successful, student enterprises are to be led and overseen by UTHM personnel or researchers to ensure that its governance and implementation run smoothly, orderly, and systematically based on practical experience.

- iii. **Student Entrepreneurship Incubator Guidelines:**  
 In particular, this guideline aims to establish a centralized business incubator/space in each faculty, responsible center, and residential college. This incubator program is open to all students with a current active status at UTHM as long as they have registered their business with the Companies Commission of Malaysia (Suruhanjaya Syarikat Malaysia, SSM). Simultaneously, PTU's initiatives through these guidelines encourage student businesses based on innovation and digitally driven technology.

In addition to the aforementioned, the MBA curriculum includes a set of elective courses named “technopreneurship,” in which students gain a deeper grasp of the intersection of technology and business, as well as leadership and strategic HRM. Through the courses, students are to be exposed to financial assessment for a new business, the laws and regulations that apply to businesses in Malaysia, the available grants, loans, and other forms of financial and technical support, and methods to create a business plan, marketing strategy, operational plan, and financing strategy. Alongside, students are to be presented with a range of case studies centered on thriving business entrepreneurs.

## 2.1 ANALYSIS

ANGEL's implementation in UTHM is assessed in relation to i) green, ii) entrepreneurship and pivotal leadership by using a SWOT-TOWS Matrix (outlined below) in Box 2.1:

Box 2.1: SWOT-TOWS Analysis

Internal	Strengths	Weaknesses
	<ol style="list-style-type: none"> <li>1. PTU, as the center to manage entrepreneurship activities on campus.</li> <li>2. Well-trained / focused</li> </ol>	<ol style="list-style-type: none"> <li>1. Need constant funding/Lack of funding.</li> <li>2. Limited Know-how in green entrepreneurship</li> </ol>





External

- |   |  |
|---|--|
| <p>trainers/coordinators inline with their field of expertise.</p> <p>3. There is a dedicated space for the ANGEL Innovate Unit to run programs and activities.</p> <p>4. University Strategic Plan to become Global Technopreneur University 2030 provides an advantage to enhance entrepreneurship activities.</p> <p>5. In-class curriculum covers entrepreneurship and leadership courses.</p> <p>6. There is a specific dedicated Sustainable Campus Office (SCO) that looks after green activities on campus.</p> | <p>(technology/industry standard practices).</p> <p>3. Lack of integrative strategies in campus among other faculties/departments.</p> |
|---|--|

Opportunities	SO	OW
<ol style="list-style-type: none"> <li>1. Explore sustainable-entrepreneurship.</li> <li>2. Knowledge-sharing/transfer within the alumni network.</li> <li>3. Global awareness of environmental protection.</li> <li>4. Availability of partner institutions of local and international on green entrepreneurship.</li> <li>5. UTHM scores high in UI Green Matrix World University rankings.</li> </ol>	<p>Strategy – To use strengths to take advantage of opportunities:</p> <ol style="list-style-type: none"> <li>1. Integration and synergize activities of green entrepreneurship between PTU, SCO and other departments (green initiatives)</li> <li>2. To leverage networking with alumni and partner institutions locally and abroad in holding green entrepreneurship activities and knowledge sharing.</li> </ol>	<p>Strategy – to identify which weaknesses will hinder the project the most:</p> <p>Lack of integrative strategies in campus among other faculties/departments</p>





Threats	TS	TW
<ol style="list-style-type: none"> <li>1. <b>Low engagement of students and staff in relation to entrepreneurship activities.</b></li> <li>2. <b>Public perceptions and awareness of green entrepreneurship.</b></li> <li>3. <b>The change of leadership top management position may hinder the development of student entrepreneurship activities.</b></li> <li>4. <b>The change of positions of PTU management may cease the activities project.</b></li> </ol>	<p>Strategy – to use strengths to remove threats:</p> <ol style="list-style-type: none"> <li>1. PTU should play a role in disseminating all information on ANGEL to the top management and all communities inside and outside UTHM.</li> <li>2. Green Entrepreneurship should be part of PTU's main structure and function.</li> </ol>	<p>Strategy – to identify which threats can be removed:</p> <p>None</p>

From the SWOT-TOWS analysis, several core activities are identified to strengthen the University's competencies and minimize the risks for project success. PTU, the University's entrepreneur development unit, plays a big role in serving the community from within and outside the University – synthesizing the business needs for both. The team that manages PTU is selected from UTHM's experienced professional staff in business management and development, in which they have been trained and empowered with the knowledge to nurture the idea of entrepreneurship. To ensure that the project is running smoothly, UTHM provides a dedicated space for ANGEL Innovate Unit to run programs and activities. This is consistent with the University's long-term goal of becoming a Global Technopreneur University by the year 2030. ANGEL Innovate Unit shall be evidence of the University's commitment to making the most of its resources for the benefit of the intended participants. UTHM sees achieving this goal by incorporating entrepreneurship and leadership into the classroom curriculum. Theories are taught with discipline and backed by PTU for application. In the bigger picture, a Sustainable Campus Office (SCO) was established to supplement the University's effort for green entrepreneurship by demonstrating leadership in sustainable campus ecosystems to raise awareness, create institutional culture, and sustain the green movement.

Numerous initiation initiatives are necessary to ensure that the objectives of the entities (i.e., UTHM, PTU, SCO) are realized, necessitating continual funding. As a public university, UTHM relies mostly on funds from linked Malaysian ministries and grants from the private sector, all of which have expiration dates that support project expenses within a limited timeframe. Concerns have also been raised over the adequacy of funding, as in cases where the costs of carrying out the project's objectives exceed the allocated budget, and the desired results are thus not achieved. In addition to the financing challenges, there are also worries regarding the execution aspects, where the University is still lagging in terms of industry-standard practice. The setback is tolerable from a human resources standpoint because the University can send designated employees to training. However, the time required to set up the new facilities and equipment is substantial. This leaves the integration aspect wanting, as campus-wide departments are not in sync with the green activity and green entrepreneurial ideas.

Following the strengths and weaknesses, UTHM is expected to explore the opportunities in green





entrepreneurship with relevant stakeholders, such as the government agencies (e.g., MOHE, Ministry of Environment and Water, MoSTi, etc.), private sectors, educators, and even the UTHM alum network. The opportunities could come from various types, such as information sharing, knowledge/technology transfer, and financial aid. It is well aware that with the rise of global awareness of a sustainable environment, the availability of experts from local and international institutions has also increased. This is especially coming in favour of UTHM to venture partnership with the said parties as it will allow the University to set a strong ground on green entrepreneurship. Eventually, there is a high chance that UTHM will be recognized and acknowledged for leading green entrepreneurship by getting a good scoring index in UI Green Matric World University rankings.

In addition to the foregoing, the University is considering the obstacles it will face from students and staff, particularly in green activities, because of their perceptions and awareness of the said area. Many of us at UTHM still have doubts about how to implement green entrepreneurship in a financially and managerially sound way, as it seems to be a relatively new concept in the community. That being said, the risk of sustaining the green entrepreneurial movement could be hindered by the change in leadership at the University and the PTU level. If the corporate strategy takes a different path than what the current management is doing, the business-level management will be immediately impacted.

## 2.2 STRATEGY

The value that UTHM is trying to set at the institutional level is to inculcate green understanding among communities of UTHM. At the same time to create awareness of the importance of green business and development among start-up companies of the communities in UTHM. Simply put, UTHM intends to embed the understanding of its people to regard green entrepreneurship as problem solvers and is very resourceful in that the adoption of environmentally responsible business practices can conceivably open up an additional range of opportunities for entrepreneurs. UTHM via PTU's ANGEL Team to guide students and staff businesses to move toward a more sustainable model, where there are many niches that enterprising people and businesses can find and fill. These include making new products and services, making existing businesses run better, coming up with new ways to market, changing business models and practices, and so on.

As a public university that focuses on people-centric, giving back to the community is part of the role; educating the community from within can contribute to the nation's success as a whole. While other western countries have already prioritized green activities in their business nature, Malaysia is still falling behind, still finding the right approaches to start. Hence, starting at the institutional level is deemed the right way to nurture the country's future leaders. UTHM sees these efforts as forming sustainable entrepreneurship that combines the concepts of green entrepreneurship and social entrepreneurship, in which the application of this approach can unleash business potential not only in profitability but in terms of being environmentally friendly. After all, green entrepreneurship is about creating and implementing solutions to environmental problems and promoting social change so that the environment is not harmed.

Thus, the function of PTU as the ANGEL project owner is coming to light, of which its entrepreneurs' development that majorly focused on social paradigm is broadened to include green activities. With great help from partner institutions of local and international on green entrepreneurship and supported by the ERASMUS+ Programme of the European Union (Capacity Building in the field of Higher Education), UTHM's green entrepreneur development could be achieved. The UTHM ANGEL team also collaborates with various internal departments to empower green entrepreneurship that is more holistic, involving technical aspects and usability in the industry. Among the departments involved are the Faculty of Technology Management and Business, the Faculty of Mechanical Engineering And Manufacturing, the Faculty of Civil Engineering and Built Environment, the Department of Student Technopreneurs, and the Student social entrepreneurship department.





## 2.3 STRATEGIC LEVERS

Following the above, we recommend adding a green entrepreneurship function into PTU's existing framework to supply the environmentally conscious element that UTHM has lacked in practice. The following organizational chart depicts the proposed added function to the current practice.

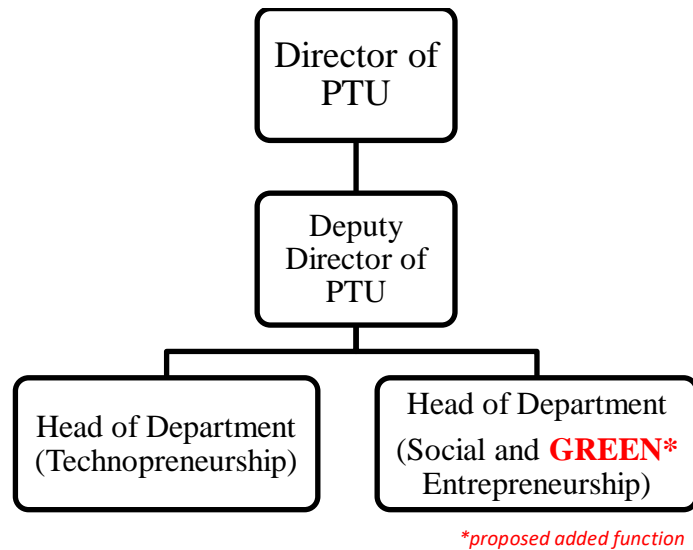


Figure 2.3: The business unit function of the UTHM PTU

## 2.4 MODEL of ANGEL

UTHM's ANGEL Model will focus on three major tasks in which we strive to lead green entrepreneurship with the correct sustainable mindset. UTHM plans to become a pioneer in environmentally sound business practices (particularly in the Batu Pahat area) by emphasizing these three tasks. The UTHM ANGEL team believes it is crucial to set up a proper infrastructure for environmentally friendly initiatives right from the start. Following that, steps to improve the green ecosystem must be taken to ensure UTHM communities can meet green industrial standards. Lastly, specific measures must be put in place to ensure the sustainability of the University's green aspects, which will benefit the local community as a whole. Task 2 and Task 3 are connected to each other in a way that sustainability will be achieved by following the right ecosystem at the right time. The following Figure 2 depicts the ANGEL framework that best explains how the ANGEL project will be implemented in UTHM.



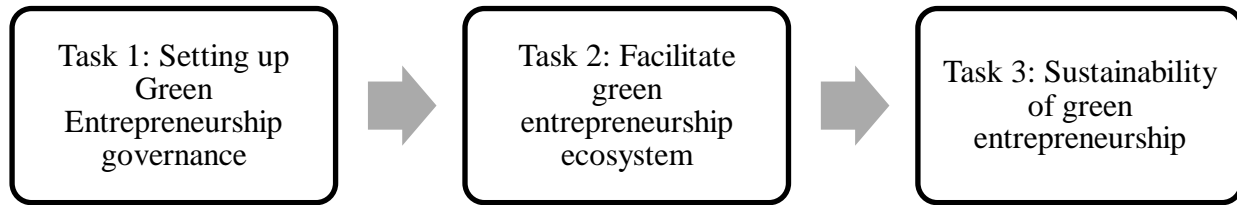


Figure 2.4: UTHM ANGEL Model

### Task 1: Setting Up The Governance Of Green Entrepreneurship

- Adding up a green component in one of the department structures in PTU. Currently, the Department of Social Entrepreneurship oversees only social entrepreneurship activities, and very minimum activities have been organized for which we are focusing so much on technopreneurship activities.
- Adding up to the readily structured PTU governance is not that difficult in comparison with creating a new department. The process of this initiative will be commenced in January 2023.
- Building rapport with the top management of the institution, especially with the Vice Chancellor, in explaining the new governance structure would ease the process of approval when presenting to the committee.
- Preparing a paperwork to be presented at Jawatankuasa Eksekutif that will be chaired by the Vice Chancellor of UTHM. The paperwork of proposing a new element of green in the current structure.
- Therefore, PTU serves as a platform for integrating the concept of green entrepreneurship towards achieving ANGEL's objective of addressing green entrepreneurship and transformational leadership and social innovation challenges.
- Creating an ANGEL Innovate Unit Team that comprises of team members from the ANGEL Team as well as the Director of PTU would give an advantage to the team as the decision-making process would be faster and easier.

### Task 2: Facilitating Green Entrepreneurship Ecosystem

- Setting up ANGEL Innovate Unit - With the establishment of the ANGEL Innovate Unit at the Students' Incubation Center of PTU, the activities of green entrepreneurship can be centralized under the management of PTU. Therefore, these facilities would enhance the ecosystem of green entrepreneurship at UTHM. Currently, the Center is undergoing renovation and is expected to be ready by 15th January 2023.
- Organizing Info Days - The Info Days would serve as a platform to disseminate information about ANGEL Project to all communities in UTHM (students, administrative staff and academicians).
- Organizing "Train the Trainers" Program - this training would enhance the capability of selected administrative staff and academicians on know-how green entrepreneurship business.



- Organizing training sessions on green entrepreneurship for students and disadvantaged communities (single mothers), which will be delivered by the trained personnel in the earlier phase.
- Organizing training sessions on green entrepreneurship for the strategic partners of UTHM, such as academicians from different institutions, industrial partners, government-linked agencies and etc.
- Leveraging the social media platform to disseminate all information on ANGEL Project and activities to create awareness and build enculturation of green entrepreneurship on campus.
- Work hand in hand with the other departments to synergize activities of green and embed green business elements in those activities. The potential departments/offices in UTHM that may have the same interest but different natures are the Sustainable Campus Office, faculties of Engineering and others. The integration of activities under one roof of PTU would enhance green business culture and practices in UTHM.

### Task 3: Ensuring Sustainability Of Green Entrepreneurship

- Getting approval from the Executive Committee Meeting would be the first step in ensuring the sustainability of the project
- UTHM currently focuses on three different categories of entrepreneurship; i) conventional entrepreneurship, ii) technical entrepreneurship, and iii) technopreneurship that covers technology innovation and digital transformation. Based on this, the green element can also be considered under technopreneurship but has not been spelt out clearly. Therefore having it spelt out as one of the functions of PTU would ensure its sustainability in the future
- After the project ends, ANGEL Innovate Unit Team may search for funding from various sources to maintain the services and facilities provided by the Erasmus+ CBHE project.
- After the project ends, getting volunteers from academicians, administrative staff, postgraduate and undergraduate students would be helpful in making sure the project is still viable and can be accessed anytime and anywhere.
- The Online Platform and Massive Open Online Courses (MOOC) that have been developed by the ANGEL Team would be used in teaching and learning as an additional platform for inculcating green business culture among students.
- The students/academician/administrative staff/community that attend training sessions will undergo a screening process for potential start-up development, and would be provided handholding services by PTU, such as mentoring, coaching and consultation in facilitating their business development.
- Besides that, research and development activities can be conducted on green entrepreneurship practices at UTHM, aiming at understanding the level of practices, affecting factors, green entrepreneurial intention and others. These findings, later on, would be used to improvise the facilities, ecosystem, infostructure and infrastructure of UTHM.
- For the long term, green entrepreneurship can be proposed to be a 1-course offering in the Co-curricular activities.
- Besides, the green element can be embedded in the current entrepreneurship courses in each faculty at Diploma and Undergraduate levels. This course is a university's compulsory course that must be taken by each student. While for MBA students, the green element can be added to the technopreneurship elective.





## 2.5 ACCOMPANYING MEASURES

In order to ensure the long-term effectiveness of the ANGEL Innovate Unit is that make green business agenda as one of the Key Performance Indicators for each faculty. At the moment, for 2022, UTHM has assigned each faculty to produce student entrepreneurs start-ups based on technology innovation and digital transformation. Minimum KPIs have been set up for this, which is only 18 for the whole campus. Nevertheless, when assessing the risks that might be involved in this KPI performance is that lack of support will be received from top management and middle managers in UTHM. The risks can be mitigated by working together with the Strategic Office of UTHM by the mid-year of 2023.

## 2.6 INSTITUTIONALIZATION

The operation of the entrepreneurship center shall be integrated into the organizational structure of the University, and recognized as such by the university council. Please refer to Figure 1 for the proposed structure of green entrepreneurship. The Director of PTU will directly report to the Deputy Vice-Chancellor (Research and Innovation) and then to the Vice Chancellor.

## 2.7 INFRASTRUCTURE and EQUIPMENT

The infrastructure of the ANGEL Innovate Unit is located at Building F3, Students Center of UTHM. It is under renovation starting 4th December 2022 until 15th January 2023. The Center is named En-Trade Hub, where it serves as an Incubator to train UTHM students' business start-ups to sell products and services through international platforms such as eBay and Amazon. The equipment that has been bought using the ANGEL budget, i.e. six desktop computers and two printers, will be placed at this Center to be used by students. The equipment will be maintained by the IT Department of UTHM and PTU.

## 2.8 THE ANGEL PROGRAM

The UTHM ANGEL team constructed a set of activities depending on the events' significance. Participants will be selected based on their suitability for each activity and invited following the action plan (as outlined in section J). In short, the ANGEL activities that will be conducted by UTHM are summarized as follows:

- Awareness Program - Info days Session will be held every three months (every business quarter) physically to all UTHM staffs, administrators, and students. Awareness programs will also be held to the community and depending on the events conducted by the local government or State Government, while awareness to strategic partners of UTHM will be sent via emails.
- Training Program – to be conducted on three operational levels, i) the trainers, ii) UTHM communities (inside and outside), and iii) strategic partners.
- Incubation and Startup Establishment - Each student who participated in the training will have a chance to participate in the competition for green business and entrepreneurship. These students, later on, will be included in the Start-up Accelerator Program.







- Monitoring Start-up Development - Through the handholding services, i.e., CMTC services that are Coaching, Mentoring, Training and Consultancy.

## 2.9 MARGINAL COMMUNITIES

The target groups of the ANGEL project at UTHM are single mothers in the community of Batu Pahat Johor. These Single Mothers will be joined together with UTHM students in the Bootcamp that will be conducted on 10 and 11 December 2023. This initiative was planned to foster sustainable innovation, economic empowerment, and environmental responsibility. By bringing together these two diverse groups, the project aims to create a collaborative ecosystem where university students can harness their fresh perspectives and academic knowledge to develop environmentally friendly business ideas. These ideas, once refined, will be embraced by single mothers who are looking for opportunities to support their families while engaging in eco-conscious ventures. The project not only encourages entrepreneurial spirit but also highlights the importance of sustainability, equipping these individuals with the tools and skills needed to address environmental challenges and make a positive impact on their communities. Through mentorship, resources, and shared experiences, this initiative seeks to create a win-win situation, where university students and single mothers can prosper financially while contributing to a greener, more eco-friendly future.





## 2.10 ACTION PLAN

No.	Activity	2022				2023				2024				2025			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
TASK 1: SETTING UP THE GOVERNANCE OF GREEN ENTREPRENEURSHIP																	
1	Add up a green component in one of the department structures in PTU																
2	Build rapport with UTHM's top management																
3	Prepare paperwork to propose a new element of green in the current structure - to be submitted to the University Executive Board.																
4	Identifying team members for ANGEL Innovate Unit																
TASK 2: FACILITATING GREEN ENTREPRENEURSHIP ECOSYSTEM																	
1	Set up ANGEL Innovate Unit																
2	Organize Info Days																
3	Organize "Train the Trainers" Program																
4	Organize training sessions on green entrepreneurship for students and disadvantaged communities																





No.	Activity	2022				2023				2024				2025			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
5	Organize training sessions on green entrepreneurship for the strategic partners of UTHM																
6	Leverage the social media platform to disseminate all information on ANGEL Project																
TASK 3: ENSURING SUSTAINABILITY OF GREEN ENTREPRENEURSHIP																	
1	Get approval from the Executive Committee Meeting																
2	Explore funding resources to maintain ANGEL's facilities and equipment																
3	Open up volunteer positions to care for ANGEL project																
4	Empower the usage of The Online Platform and Massive Open Online Courses (MOOC) as learning platform for green entrepreneurship																
5	Propose green entrepreneurship to be included in the Co-curricular activities																





No.	Activity	2022				2023				2024				2025			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
6	To embed green entrepreneurship in the current entrepreneurship courses in each faculty																





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NETWORK FOR  
GREEN  
ENTREPRENEURSHIP  
AND  
LEADERSHIP**



Universiti Malaysia  
KELANTAN



### 3.0 CONTEXT

Universiti Malaysia Kelantan (UMK), a public university in Malaysia, has been a vanguard of entrepreneurship education since 2006. UMK is all about entrepreneurship and its nuances thus underpinning its vocation being Malaysia's first entrepreneurial university. UMK, with its tagline and motto: 'Entrepreneurship Is Our Thrust', and 'Entrepreneurial University' aims at producing balanced and holistic human capital with know-how entrepreneurial characteristics so as to be competitively ready for global demands. Its main agenda is to produce, not just knowledgeable, but also, graduates that are equipped with pragmatically entrepreneurial attributes.

UMK has contributed not only to the country's higher education but also to the socio-economic development of the community in the state of Kelantan, Malaysia. With its campuses in Pengkalan Chepa, Bachok and Jeli, UMK has managed to enhance and balanced its academic achievements and graduates through entrepreneurship, research and innovative programmes. It also provides services for people's well-being and region development. Consistence with Malaysian Entrepreneurship Strategic Planning, UMK has developed strategic Plan 2021 to 2025 which focusing on seven (7) main thrust which are human resource, finance, academic and international, research and innovation, entrepreneurship and socioeconomic, governance and transformation delivery, and branding for strategic positioning.

In realizing the strategy to empower entrepreneurship in UMK, the university has make several steps to establish five basic principles based on the concept of entrepreneurship education @ UMK. The steps are: (1) Entrepreneurship cutting across programmes and disciplines, (2) entrepreneurship courses for all faculties and a mandatory third language, (3) Integrated delivery systems, (4) entrepreneurial attributes and good universal values, and (5) students on campus businesses.

Furthermore, in its pursuit of excellent entrepreneurship education and knowledge, so as to live up to its reputation being the leading entrepreneurial university in Malaysia, UMK has walked the talk by establishing the UMK Entrepreneurship Institute (UMKEI) that is dedicated to all entrepreneurial activities pervading academic, economic and social spectrums. UMKEI acts as the centre of entrepreneurial development excellence for in-campus and off-campus communities through focused, competitive, resilient and viable entrepreneurship training, advisory, counselling and networking entrepreneurship. The centre is divided into three entrepreneurial drivers namely:

- ✓ Institute for Small and Medium Enterprises (ISME) which function as a centre that helps developed SMEs through training, coaching and consultancy, creating network between entrepreneur, community, government agencies and universities, and provide advisory service or consultancies to micro and SME Entrepreneur; <http://isme.umk.edu.my/index.php/my/>
- ✓ Centre for Entrepreneurship Education and Development (CEED) which function as a centre that helps enhance Entrepreneurship Education curriculum, developed student business and entrepreneurial activities, and empowering staff and faculty in entrepreneurship activities and development <http://umkei.umk.edu.my/index.php/en/>
- ✓ Global Entrepreneurship Research and Innovation Centre (GERIC) which function as a centre that helps leaders in entrepreneurship research and innovation, established





research global network, and enhance translational research for community <http://geric.umk.edu.my/>. The Faculty of Entrepreneurship and Business supports UMKEI by providing academic curriculum for entrepreneurship across faculties.

### 3.1 ANALYSIS

The following Box 3.1 describes the SWOT-TOWs analysis for UMK with regards to current green entrepreneurship and leadership.

Box 3.1: SWOT-TOWS Analysis

	<u>Strengths</u>	<u>Weaknesses</u>
Internal	1.Existing entrepreneurship incubator (IVL and 2U2I Lab). 2.Center of Excellence for Global Entrepreneurship (GERIC). 3.Faculty of Earth Science - offer degree program sustainability program 4. UMK thrust is entrepreneurship 5.Offers entrepreneurship degree curriculum structure to students 6. Curriculum across faculty 7. Collaboration with industry (SIEP, 2U2I, MoU, MoA) 8. Incentive and reward to students that involve in entrepreneurship 9. Existing entrepreneurship fund pool 10. Consistent program/ event on entrepreneurship. 11. 2u2i incubate lab	1.changes of top management leaders 2.inexperienced staff in entrepreneurship practice 3.limited entrepreneurship fund 4.UMK is separated between 3 campus 5.Inappropriate place for student businesses 6.not focusing on green entrepreneurship
External		





<p><u>Opportunities</u></p> <ol style="list-style-type: none"> <li>1. UMK is located at country border</li> <li>2. Entrepreneurship is local culture in Kelantan</li> <li>3. KUSKOP, MDEC, are external agency that is link with UMK</li> <li>4. National policy on entrepreneurship support green entrepreneurship</li> </ol>	<p><u>SO</u></p> <p>UMK is an Entrepreneurial University and can be the champion of green education entrepreneurship and leadership.</p> <p>UMK students can be a benchmark/pioneer in green education related to entrepreneurship and leadership.</p>	<p><u>OW</u></p> <ol style="list-style-type: none"> <li>1. Disperse geographical location.</li> </ol>
<p><u>Threats</u></p> <ol style="list-style-type: none"> <li>1. Limited infrastructure due to delayed state development.</li> <li>2. Competitiveness- other local universities also offer entrepreneurship programs.</li> </ol>	<p><u>TS</u></p> <p>UMK can collaborate with other universities to develop the green entrepreneurship curriculum</p>	<p><u>TW</u></p> <p>Fund from HQ has to be distributed to others.</p>

### 3.2 STRATEGY

In general, there are FIVE (5) UMK entrepreneurship goals, as follows:

(1) to create a holistic and conducive entrepreneurial ecosystem to support development of Entrepreneurial University

In order to suit the existing goal and embrace a green ecosystem, UMK looks forward to having a pool of talented people as green entrepreneurial leaders. This should start at top management where top management should have a crystal clear of what green entrepreneurship is. Top management should have entrepreneurial mindsets towards green and sustainable businesses first before let the others do. As well as rallying behind green entrepreneurs, UMK need to build knowledge and expertise in this field and convene other stakeholders to support them. UMK must generate evidence on what works to show that green entrepreneurship is a viable pathway to generate employment, improve livelihoods and address environmental problems. To amplify all such efforts and create systems changes at scale, UMK need to collaborate to strengthen







entrepreneurial ecosystems. This needs visionary thinking, bold actions and agility to break silos and bring stakeholders together, acting at scale and engaging strongly with governments and the private sector.

(2) forming a thinking UMK community and entrepreneurial culture

The existence of UMK itself should benefit the local community. The concept of RICES ecosystem (R-research, I-innovation, C-community, E- Entrepreneurship and S-Social) should be revised by integrating the concept of green not just for leadership but also in entrepreneurship. UMK should work closely with the community to not just educate the community about how we should care for our environment for our generation but also educate them on what can be done to protect the environment.

(3) to make entrepreneurship the choice of UMK student career

Green entrepreneurship and leadership should be a UMK student career and not by choice. At UMK, we believe green entrepreneurs, a dynamic force, can help us in building green, inclusive and localised economies. There is growing recognition of the role green entrepreneurs are playing and can play at scale. Green entrepreneurs have the resilience and innovative thinking to turn environmental challenges into green growth and business opportunities by building and growing ventures. Developing entrepreneurial mindsets towards green and sustainable businesses is a less travelled path. It is proving to be effective in helping young people to develop skills, such as creativity, critical thinking, teamwork, communication and leadership that help them prepare for entrepreneurial opportunities. Introducing entrepreneurship into the curriculum at secondary school level can orient young people at an early stage in their lives.

(4) enhancing entrepreneurship research and innovation capabilities as well as entrepreneurship education

UMK is now focusing on doing research and innovation that reflects the SDGs. This is a good sign that UMK is now towards the transition from normal research into sustainable research and innovation. By promoting green entrepreneurship and leadership research grant will create more awareness on the importance of green innovation

(5) to contribute to the national entrepreneurship agenda and community development through the existence of UMKs and graduates.

UMK committed to realization of The Green Technology Master Plan 2017-2030 outlines the strategic plans for green technology development to create a low-carbon and resource efficient economy. UMK through UMK Entrepreneurship Institute (UMK EI) will deliver a series of infused green innovation and entrepreneurship programs in order to create awareness and educate the community on green entrepreneurship and leadership.

### 3.3 STRATEGIC LEVERS

The measurement of Entrepreneurship Excellence of HEIs in Malaysia hovers around four Performance Indicators (KPI) that was set by the Ministry of Education, namely:





- The number of students have entrepreneurial exposure during their studies;
- The number of HEIs graduates enter the field of entrepreneurship after graduation;
- Number of students doing business during their studies; and
- Number of internal and external teaching staff with Entrepreneurial expertise.

UMK had achieved all the three except for item number 3, which is the number of students doing business during studies. In positioning UMK as “No.1 Entrepreneurial University” in Malaysia by 2023, ASEAN in 2026 and Asia by 2030, UMK through its entrepreneurship unit, aims to bring in entrepreneurs from the industry to train the students firsthand. Hence, the students not only master the theory of entrepreneurship, but they also learn on commencing their business from the real entrepreneurs from the industry. More important, through ANGEL initiatives, UMK will be expanding the focus on green entrepreneurship as one of new area that can be explore by the students and lecturers.

### 3.4 MODEL OF ANGEL

The five-core strategy development of UMK towards entrepreneurship rely on one-four ecosystem namely: (1) University engagement; (2) Staff engagement; (3) Student engagement; and (4) Community and industrial engagement AND sustainability (green entrepreneurship and leadership).

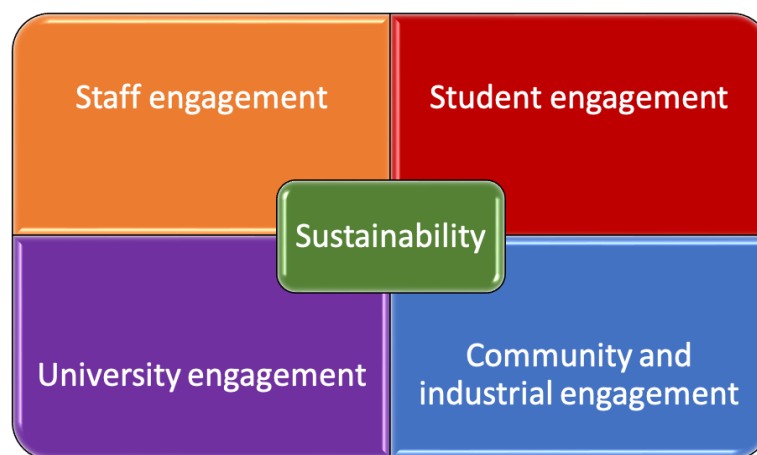


Figure 3.4: UMK Entrepreneurship Ecosystem

The existing UMK Entrepreneurship Ecosystem will be embedded in the operations of Angel Innovate Unit to make certain of Angel Innovate Unit sustainability and continuity. The Angel Innovate Unit engages with UMK staff at any level of Angel model. The following are some of the model tasks:





### Task 1: Teaching and learning (student engagement)

The Angel Innovate Unit is able to enhance students' engagement. It shares its room with 2u2i Incubate Lab. It is an existing lab for the students of Degree in Entrepreneurship with honors. All degree students in UMK are also required to undergo the subject Fundamental of Entrepreneurship. In this subject, students will be involved in Entrepreneurial week where students are required to conduct a business and document the process and progress. Angel will suggest the coordinator of the subject to include one topic on green entrepreneurship.

UMK also operates with an entrepreneurship institute called UMK-EI. Under UMK-EI, numerous events and platforms are held to ensure community and industrial engagement. Among them are:

1. Meet and Greet Program- successful entrepreneurs were invited to share their success and failure with UMK staff and students.
2. Coffee Talk Program- entrepreneur and corporate figures were invited to provide mentoring and advisable session to staff.
3. CEO@Faculty- CEOs were invited as external advisors to enhance entrepreneurship education, speakers as well as becoming one of board members of studies.
4. Entrepreneurship incubator- space developed at the university to support students' innovation and entrepreneurship activities.

### Task 2: Research, Consultancy and Training

The bodies in charge on entrepreneurship research, consultancy and training are Entrepreneurship Institute (UMKEI), Institute for Small Medium Enterprise (ISME), Centre for Entrepreneurship Education and Development (CEED) and Global Entrepreneurship Research and Innovation Centre (GERIC). These entities ensure community and industrial engagement.

UMK committed to realization of The Green Technology Master Plan 2017-2030 outlines the strategic plans for green technology development to create a low-carbon and resource efficient economy. UMK through UMK-EI will deliver a series of infused green innovation and entrepreneurship programs in order to create awareness and educate the community on green entrepreneurship and leadership. Under the wing of UMK-EI, the ISME focuses on community awareness and assistance with regards to entrepreneurship, while CEED focuses on entrepreneurship formal education. With GERIC, UMK is now focusing on doing research and innovation that reflects the SDGs. This is a good sign that UMK is now towards the transition from normal research into sustainable research and innovation. By promoting green entrepreneurship and leadership research grant will create more awareness on the importance of green innovation

### TASK 3: Realization of ideas

Ignite Venture Lab (IVL) is a place where ideas of entrepreneurship are expanded into real entrepreneurship. It supports UMK students and entrepreneurs with impact coaching, capital and community to build innovation-driven enterprises.

## **3.5 ACCOMPANYING OF MEASURES**





The location selected for the Angel Innovate Unit is a room that UMK's students and staff can access with a pass card. Because the room can be accessed by other than Angel staff, there is a risk of theft. To minimize the risk, all equipment and facilities of Angels are placed in Angel Hub, a room inside Angel Innovate Unit. The Angel Hub will be locked and can only be accessed by others when an Angel representative is there.

UMK City Campus is at risk of flooding. The last event of heavy flood happened in 2014. At that time, the majority of Kota Bharu city was affected. UMK City campus has never experienced heavy flooding since then. Nevertheless, UMK now has a flood alert system and in-charge officer during monsoon season to alert all UMK members about the risk of flooding that might occur in UMK City Campus. All UMK Angels are part of the flood alert system.

Frequent changes in top management structure and composition also caused ownership of the Angel Innovate Unit's room to change as well. This may put Angel Innovate Unit at Risk when the new management may ask Angel to remove Angel Innovate Unit to another location. One of the strategies to mitigate the risk is to position the Angel Innovate Unit in the UMK Entrepreneurship Action Plan and blueprint.

### 3.6 INSTITUTIONALIZATION

In the institutionalization journey of green entrepreneurship at UMK, there are five elements that can be referred to. They are structural element, processual element, cultural element, historical element, and operational element. Through all elements, green entrepreneurship will not thrive unless it receives strong support from the organization's management. It appears that the original goal of the establishment of UMK was to make entrepreneurship a culture for Malaysia's pluralistic society, this is parallel to the aims of ANGEL. At UMK, entrepreneurship is not only regarded as a method to provide an alternative way of generating economic resources, but also as a way to make entrepreneurship a culture for society in which it can make society more competitive, innovative, have leadership skills, and have other skills that add value to every individual, organization, and country. In terms of structural elements, UMK has a general structure for cultivating and developing entrepreneurship. There is an entrepreneurship institute at UMK. It is led by a senior director and supported by administrative staff. There are also four other units under it: the ignite venture lab (IVL), the Institute of Small and Medium Enterprise (ISME), the Center for Entrepreneurship Education and Development (CEED), and the Global Entrepreneurship Research and Innovation Center (GERIC), each of which is led by a director with a different entrepreneurship background. At Global Entrepreneurship Research and Innovation Center (GERIC), as a center of excellence, there are a number of research fellows and associate fellows appointed by UMK to strive in research and publication activities. There are also a few centers that contribute to the strong structural establishment at UMK, as depicted in Figure 3.6 below.

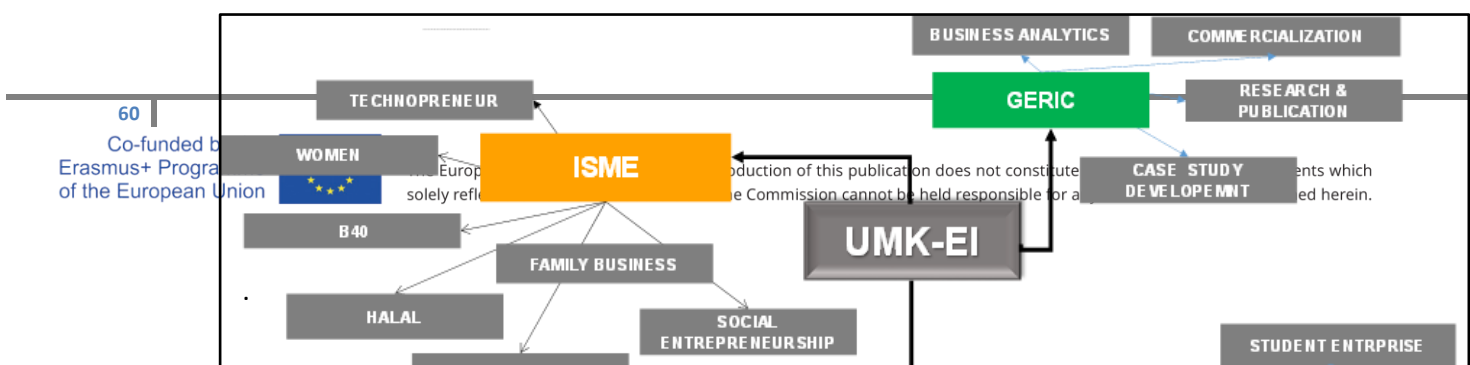




Figure 3.6: Centers Contributing To Entrepreneurial Structure And Establishment At UMK

To sum up, UMK has certainly taken on a leadership role in promoting the neoteric entrepreneurial university concept in Malaysia’s academic atmosphere. UMKEI on the other hand were supported by Faculty of Entrepreneurship and Business that provide academic curriculum for entrepreneurship across other faculties. Figure 3.6 shows the structure of UMKEI as the centre for students, lecturers, community and faculty are connected and entrepreneurship activities are coordinated. In the future, as ANGEL is now operated and established in UMK and positioned in one of UMK’s entrepreneurship unit, it will be developed and grow further to explore more opportunities and strengthened its establishment in UMK.

### 3.7 INFRASTRUCTURE, EQUIPMENT and RESOURCES

To be recognized as an entrepreneurial university, UMK has enhanced the development of infrastructure, facilities, equipment and services within the three UMK campuses (i.e. UMK Bachok Campus, UMK City Campus and UMK Jeli Campus). Among the developments that have been implemented are: (1) provide space for the student to do business (namely, Kiosk) ; (2) Incubators and accelerators (e.g. Ignite Venture Lab and 2u2i Lab) to provide incentive for the student (e.g. 2u2i incubators, innovation incubators, creative studio, business incubators); (3) Seed fund for business start-up, up-skilling and growth (e.g. Uniseed and NadicorpUMK microfinance); and (4) Life lab for students to ‘learn and earn’ (E.g Basil Leave, hipster book café; Book’s Bites, Elysian Spa, Chill’x Mart). Table 3.7 shows the initiatives done to provide sufficient infrastructure, equipment and facilities to support students, lecturers and community in entrepreneurship:

Table 3.7: Initiatives For Entrepreneurship For UMK’s Internal Communities

No.	Project/ Program/ services	Project name
1.	Kiosk	kiosk @UMK Frontier Street City Campus kiosk @Laman Siswa Square City Campus kiosk @hostel Valley in City Campus kiosk @Jeli Entrepreneurship Park kiosk @ Monsoon Square Bachok





No.	Project/ Program/ services	Project name
2	Incubators and Accelerators	T&L 2u2i Incubator Business Incubator in Pengkalan Chepa Campus Creative Studio in Bachok Campus .Innovation Lab in Campus Jeli
3	Life Lab	Basil Leaf Elysian Spa Chill'x Veterinary Clinic Hipster Book cafe
4	Entrepreneurship Online Platform	UniK19.com: e-commerce platform (virtual market place) for UMK products
5	Endowment	UMK-Nadicorp Endowment fund
6	Mentor Mentee	Sustainability business development- Business guidelines in same niche between mentor and mentee
7	Training Programme	Young Preneur Bootcamp Bengkel Pengurusan Kewangan dan akaun syarikat kepada SSU Bengkel Pemantapan Syarikat Siswa Universiti(SSU) Bengkel Young E-Commerce Preneur (YEP)
8	Ministerial level program	Mudapreneur Family Business Progra CDTD Protégé
9	Online business registration	SSU
10	Entrepreneurship Attributes measurement	Student – SEA (Student Entrepreneurship Attribute) Lecturers – ELI (Entrepreneurship Leadership Index) Entrepreneur – SMEII (SME Innovation Index)

### 3.8 Target Marginal Community

UMK is organizing a National Conference from December 3rd to 8th, 2023, at the UMK City Campus in Kota Bharu, Kelantan. The event features various activities, including an Information Day and Training on Green Entrepreneurship and Leadership. The primary objectives of these activities are to announce the launch of the UMK Angel Hub and raise awareness about green entrepreneurship and leadership.

Additionally, there will be a competition aimed at fostering innovation in the green business sector. Participants will present their innovative products, and a panel of two experts will evaluate their





itches. To further promote green entrepreneurship and leadership, UMK will introduce a new app called "Recycle Profit," designed to reduce waste and generate income through recycling and reusing products.

The target audience for the ANGEL project at UMK comprises MSME (Micro, Small, and Medium-sized Enterprises) entrepreneurs in the Kota Bharu District of Kelantan. These entrepreneurs will join UMK students in a Green Entrepreneurship and Leadership Bootcamp from December 5th to 7th, 2023. The goal of this initiative is to foster sustainable innovation, economic empowerment, and environmental responsibility. By bringing together these two diverse groups, the project aims to create a collaborative ecosystem where university students can leverage their fresh perspectives and academic knowledge to develop environmentally friendly business ideas. These ideas, once refined, will be adopted by entrepreneurs MSMEs to improve their product and service. This undertaking not only fosters an entrepreneurial mindset but also emphasizes the significance of sustainability. It equips participants with the necessary tools and skills to tackle environmental challenges and create a positive impact within their communities.

### 3.9 THE ANGEL PROGRAM

At UMK, students, lecturers and community are being connected to support each other in commencing business and other entrepreneurial activities. Generally, UMK will become organizer for many entrepreneurial activities in Kelantan and Malaysia (e.g. women entrepreneurship festival, Student-Preneur and Biz Apprenticeship (SPACE)).

In organizing these events, other support activities (e.g. Seed funding for young entrepreneurs and start-up business) and ANGEL programs, UMK will conduct a few steps as Table 3.9 shows.

Table 3.9: Steps for Institutionalizing Seed Funding for young entrepreneurs and start-up business

STEP 1	Planning for organizing the event and getting approval from related units.
STEP 2	Preparing for documentation, brochure, publicity platform and other publicity materials.
STEP 3	Advertisement to call for trainers (Trainers should have knowledge in entrepreneurship and related discipline).
STEP 4	Filter the applications from potential participants based on profiling and screening of their background.
STEP 5	Select 15 from academicians and 10 administrative staffs.





- STEP 6** Conduct local training based on Work Package 2.
- STEP 7** Monitoring of participants' development on the given tasks through social media platforms and relevant communication channels.
- STEP 8** Follow up from the participants for any comment and recommendations through surveys and questionnaires.
- STEP 9** Based on next ANGEL planning and recommendations from the participants, we plan for the next ANGEL program.

ACTIVITIES	TIMELINE											
	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
Planning for organizing the event and getting approval from related units.												
Preparing for documentation, brochure, publicity platform and other publicity materials.												
Advertisement to call for trainees and trainers												
Filter applications												
Announcement to selected participants												
Training of trainers												
Monitoring of trainees and trainers												
Questionnaires surveys												
Plan and organize next event based on survey and ANGEL planning												

### 3.10 ACTION PLAN

Table 3.10 describes the action plan for the ANGEL project at UMK. The Action Plan is aimed at performing

Activities within 12 months within the year 2022-2023. If there were delays, the UMK's ANGEL team will flexibly adjust accordingly.

Table 3.10: The Action Plan for the ANGEL Project at UMK.

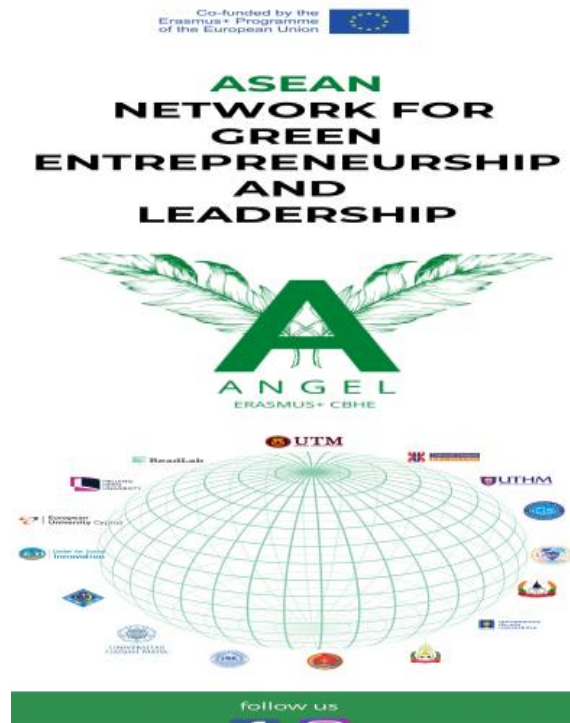








## STRATEGIC PLANNING - UGM



## UNIVERSITAS GADJAHMADA, INDONESIA







## 4.0 CONTEXT

The report of 2019 Global Entrepreneurship Index put Indonesia at number 75 out of 137 surveyed countries. Although the rank improves significantly compared to the one from 2018, the score differs only slightly (from 21 to 26). This signals that in general the entrepreneurial ecosystems should be improved, as it has been believed to be an engine for national development. Nowadays, Indonesia is enjoying a demographic bonus with 69% of its population within the working age of 15-64 years old. A significant working age population has challenged Indonesia to create employment, including encouraging entrepreneurship. When creating enough job opportunities is challenging, stimulating them to create their own business is another path to choose. The latter demands for at least two conditions: a conducive entrepreneurial ecosystem and high entrepreneurial motivation of the population. On the one hand, the Indonesian government has created various entrepreneurship programs to create a supportive entrepreneurial climate. The efforts have been perceived positively. A national-level policy outlining the National Entrepreneurship Plan (Rencana Kewirausahaan Nasional) has been issued which brings together a range of ministries for the achievement of a common goal. On the other hand, other initiatives to encourage entrepreneurial activities should be a massive movement that involve diverse actors, including universities.

Universitas Gadjah Mada (UGM) was established on December 19, 1949 as a state and national university, and considered as one of the oldest universities which serves as a pillar of educational awakening in Indonesia. UGM headquarters is located in the Bulaksumur Campus, Yogyakarta. As of today, UGM has 18 faculties, offering more than 251 courses. UGM's mission is inspired by the spirit of Tri Dharma of Higher Education (Tri Dharma Perguruan Tinggi), comprising Teaching, Research, and Community Services. At the University, students are provided with a vast array of opportunities to develop creativity and innovation in their realms through the support of modern infrastructure and information technology. At the university level, UGM has an industry-relation office center, called Centre for Innovation and Business Development which facilitates bridging the gap between the research of academia and the need of industries/societies. In the last few years, this center is responsible for commercializing the results of the research produced by UGM professors/researchers to the industry as well as to stimulate the entrepreneurial spirit among the students. This center also established the Innovation Academy as a kind of incubator for final year students and recent graduates to do business.

At the Faculty and Department level, our mission is to develop leaders including business leaders, academic leaders, societal, and political leaders. In achieving the mission, the content and pedagogy of the curriculum is mainly designed to promote leadership competence of students. More specifically, the curriculum consists of three: 1) basic and technical knowledge such as the foundation of business, functional management, strategic management, information system, and decision making tools; 2) communication skills include written and communication skills, negotiation





skills, team building, etc.; and 3) leadership and entrepreneurship skills such as business plan, entrepreneurship, business ethics, strategic leadership and design thinking.

In the undergraduate program, the entrepreneurship-related courses have been already introduced in the 1990s till now. Examples of courses are entrepreneurship, business plan, feasibility study and business forecasting. In the master program, in 2011, Master of Management Program (MBA) developed a new course concentration on Entrepreneurship which offers three courses (Entrepreneurship & Innovation, Business Modelling, and Business Plan). Students are allowed to write entrepreneurship related topics such as business plan or business modeling for their bachelor and master theses. Students and staff may apply for a dedicated grant for instance from the National Government under the Ministry of Education, Cultural, Research and Technology (Student Creativity Program) to initiate a business. At the Department level, since 2018, Center for Entrepreneurship and Center for Leadership were established. This center is considered as a research group to do and disseminate research, as well as to provide community services.

#### 4.1 ANALYSIS

The following Box 4.1 describes our SWOT-TOWS matrix on the current scenario of green entrepreneurial leadership at UGM.

Box 4.1: SWOT-TOWS Analysis

	<b>Strengths</b>	<b>Weaknesses</b>
<b>Internal</b>	<ol style="list-style-type: none"> <li>Has strong mission to develop leaders;</li> <li>Excellent pool of experts and students;</li> <li>Already has the initial ecosystem for entrepreneurship (e.g., the unit, the lecturers, the curriculum, and the facilities)</li> <li>Has an MBA Program that is globally recognized in Entrepreneurship</li> </ol>	<ol style="list-style-type: none"> <li>Lack of coordination between/among faculty or between university level and faculty/department level</li> <li>Still lacking of green entrepreneurship and implementation of green leadership</li> <li>Lack of knowledge in the concept of green business</li> </ol>
<b>External</b>		
<b>Opportunities</b>	<b>SO</b>	<b>OW</b>
<ol style="list-style-type: none"> <li>Increased awareness</li> </ol>	<ol style="list-style-type: none"> <li>Embed the concept of green</li> </ol>	<ol style="list-style-type: none"> <li>Conduct a coordination</li> </ol>





<ul style="list-style-type: none"> <li>of green and sustainability issues</li> <li>2. External stakeholders support for green-related activities</li> <li>3. In line with government's strategic planning</li> </ul>	<ul style="list-style-type: none"> <li>business and entrepreneurship in the courses and program.</li> <li>2. Disseminate the concept of green business and entrepreneurship through the ecosystem</li> <li>3. Seeking support from the government to initiate green entrepreneurship activities</li> <li>4. Attract more students to learn about green entrepreneurship in the MBA Program as the program has a well-known global reputation.</li> </ul>	<ul style="list-style-type: none"> <li>meeting with all parties involved in the entrepreneurship domain to set the university's mission and goal in green entrepreneurship and leadership as well as managing the task and resource distribution among units.</li> <li>2. Introduce the concept of green business, entrepreneurship and leadership to the public through workshops and seminars.</li> <li>3. Built upon the awareness of the green concept, increasing entrepreneurs' knowledge about green entrepreneurship and leadership.</li> </ul>
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Threats	TS	TW
<ul style="list-style-type: none"> <li>1. Lack of green technology to support green entrepreneurship</li> <li>2. Expensive cost of green technology</li> <li>3. Green ecosystem that has not been well established across the nation</li> <li>4. Consumers' low preference in green products due to its high price</li> </ul>	<ul style="list-style-type: none"> <li>1. Design a short course of green entrepreneurship and leadership for multi-discipline students.</li> <li>2. Advocate the need for the green ecosystem in the nation and society.</li> <li>3. Research on business models that facilitate cost efficient production.</li> </ul>	<ul style="list-style-type: none"> <li>1. Collaborate with other faculties, such as engineering, science and technology to produce green technologies</li> <li>2. Collaborate with the leaders in technology to conduct research to develop affordable green technologies.</li> <li>3. Creating a green business model to produce more affordable green products and services.</li> </ul>

## 4.2 STRATEGY

Long-term goal for green entrepreneurship and leadership:

To inspire and aspire entrepreneurs and leaders with a strong passion and knowledge needed to establish a sustainable green business.





#### Objectives:

1. Promote research for developing green business and nurturing green entrepreneurs and leaders.
2. Educate students and society as a whole about the concept of green business and how to implement the concept in a real business context.
3. Serve the society and community by assisting them to develop green business

#### Milestones:

##### Year 1

Q1: Introducing ANGEL within the internal stakeholders

Q2: Disseminating the concept of green entrepreneurship and leadership within the internal stakeholders

Q3: Creating infrastructure and ecosystem to support the activities needed to achieve the objectives

Q4: Setting research agenda on green entrepreneurship and leadership.

##### Year 2

Q1: Organizing workshop and seminars to promote and educate internal stakeholders about green entrepreneurship and leadership

Q2: Planning activities to promote green entrepreneurship and leadership by utilizing the supporting infrastructure and ecosystem services.

Q3: Obtained collaboration to develop green entrepreneurship and leadership

Q4: Research on green entrepreneurship and leadership.

##### Year 3

Q1: Facilitating the development of green business (i.e., incubation of green business)

Q2: Evaluating the efficacy of dissemination activities

Q3: Showcasing the green innovation

Q4: Research dissemination (i.e., conference or publication)





### 4.3 STRATEGIC LEVERS

The ANGEL project at UGM strategically focus on three existing programs as a leverage to ensure ANGEL's sustainability:

Master of Sustainability as funded by Erasmus+ to promote multi-disciplined involvement for green entrepreneurship and leadership development.

MBA Program with strong global recognition in entrepreneurship that facilitates broad exposure and positive attitude from the public.

Entrepreneurship units at the university level that partners with the government and private sectors.

### 4.4 THE ANGEL MODEL

The ANGEL Innovate Unit will be established as the center of green entrepreneurship and leadership at UGM. There are existing entrepreneurship centers under the Faculty of Economics and Business (FEB). The ANGEL Innovate Unit will be a part of these centers to complement the current activities. The ANGEL Innovate Unit has the following tasks:

#### TASK 1: Creating ANGEL Innovate Unit's Committee

The first task is to create the ANGEL Innovate Unit's Committee. This committee will perform the managerial functions and oversee the overall journey of this entrepreneurship and leadership center, including making sure of ANGEL Innovate Unit's sustainability. The committee will consist of academic staff, administrative staff, and students as assistants. As ANGEL Innovate Unit will be a part of the existing entrepreneurship and leadership center, the structure will be merged.

#### TASK 2: Identifying ANGEL Innovate Unit's Stakeholders

The next task that needs to be done in developing ANGEL Innovate Unit is identifying its stakeholders, both internal and external. Its internal stakeholders include students, researchers, lecturers, and faculty members of UGM, while its external stakeholders include community (especially aspiring entrepreneurs), other universities, government, and industries.

#### TASK 3: Creating ANGEL Innovate Unit's strategy and principle







ANGEL Innovate Unit's strategy and principle aligns with ANGEL's overall strategy, which aims to address green entrepreneurship and transformational leadership and social innovation challenges. The purpose of ANGEL Innovate Unit at UGM is to be the center for the development of new ventures in green technologies, energy, and sustainable development. Moreover, it also aims to increase the awareness towards green entrepreneurship and leadership in Indonesia, especially in Yogyakarta. The purpose of ANGEL Innovate Unit will complement the purpose of the existing entrepreneurship and leadership center at UGM, which aims to do and disseminate research, as well as to provide community services. Based on these purposes, the target group of ANGEL Innovate Unit will be aspiring green entrepreneurs, whether inside or outside our institution.

#### TASK 4: Developing ANGEL Innovate Unit's Activities

The activities of ANGEL Innovate Unit follows the guideline provided by ANGEL. It will provide green entrepreneurship and leadership education (lectures, competition, MOOC, etc.), provide support and mentor innovative ideas and research results, and develop networks of collaboration.

#### TASK 5: Disseminating, Recruiting, and Conducting Activities

Once the development of ANGEL Innovate Unit is finished, the next task that needs to be done is spreading the news about the presence of the center and the opportunities it provides. It will also include the recruitment and selection process of aspiring entrepreneurs to be mentored through ANGEL training as the 3rd phase training of ANGEL project. The process continues with the execution of planned activities explained in Task 4.

#### TASK 6: Evaluating and Improving

Once all of the activities for the first batch are finished, we will evaluate the process to identify rooms for improvement in the next batch. This is also part of ensuring the continuity of the unit.

### 4.5 ACCOMPANYING MEASURES

ANGEL INNOVATE UNIT is a part of Entrepreneurship and Leadership Center under the Department of Management of FEB UGM. The centers are established under the Department of Management, which is authorized by the Dean of FEB. FEB UGM will provide support (facilities, resources, funds etc) for any activities related to teaching, research, and community services. In addition to that, our Master of Management (MBA Program) already initiated a new stream of master study for Asean Sustainability from 2021 which was initially funded by the Norwegian Government for five years. In 2022, Department of Management and Master of Management FEB UGM also received another grant from the EU, called MASUDEM (Master Studies in Sustainable Development Management for 2022-2025). These two grants -





are at least - can be used as a source of future sustainability of the ANGEL UNIT as the focus of the grant on leveraging and creating green and sustainable business leaders.

#### 4.6 INSTITUTIONALIZATION

As mentioned above, the ANGEL Innovate Unit will be a part of the Entrepreneurship and Leadership Centre under the Department of Management, Faculty of Economics and Business, Universitas Gadjah Mada. At the Department of Management, in addition to these centers, there are other centers established, namely Center for Marketing, Center for Supply Chain and Logistics, and Center for Finance. All the centers are in the organizational and governance structure regulated by the Faculty and the University.

#### 4.7 INFRASTRUCTURE and EQUIPMENT

In order to make sure that the aims of the project succeed, various types of equipment are needed to support all stages of the project starting from the preparation until the implementation of the project.

The equipments include:

- Computers and software.

These components will be utilized by the faculty members (e.g. lecturers, students) to stimulate the learning process effectively and in an efficient manner. Mobile devices such as laptops are essential (for main researchers in this project) to support the sharing and implementation of the project. Computers and software equipment includes laptops, tablets, PC, and Adobe license.

- Books and pedagogic materials and audio-visual equipment.

In addition to that, books and pedagogic material, and audio-visual equipment that provide a creative and innovative sharing environment among stakeholders involved in the project are crucial. For instance, the updated books and pedagogic materials will be useful for the researchers in the faculty and other faculty members to do knowledge sharing and teach about entrepreneurial spirit and leadership. The audio-visual equipment includes cameras, lighting, microphones, etc. It will be utilized for offline and online meetings with various stakeholders, course development, as well as other related events such as seminars, focus group discussion.

- Lab materials





Various lab materials to support the implementation of the project will be crucial to be provided.

The equipment will be located in the ANGEL Hub, which supports various existing learning centers under the Faculty of Economics and Business UGM such as learning centers, meeting rooms, and computers laboratory, also faculty library. The equipment proposed complements existing infrastructure and equipment existing at Faculty of Economics and Business UGM in order to further facilitate students, researchers, and faculty members to develop thorough understanding of green entrepreneurship and leadership. The ANGEL Innovative Unit and ANGEL Hub will be taken care of by the ANGEL enterprise team with the support of all of the stakeholders.

#### 4.8 TARGET MARGINAL COMMUNITY

The target groups of ANGEL project at UGM are disadvantaged groups in society which refer to various populations that face social, economic, or political challenges that limit their access to opportunities and resources. These groups often experience discrimination, marginalization, and systemic barriers. In doing the program in UGM, the Research Group of Entrepreneurship under the Department of Management FEB UGM and ANGEL Innovative Unit at FEB UGM will empower disadvantaged groups, particularly women, individuals with low income, those with low educational backgrounds, and residents from rural areas in the Province of Yogyakarta, Indonesia. The ANGEL project is designed to empower this advantage group by providing dedicated programs such as designing specialized programs that cater to the unique needs and challenges faced by the target groups, providing training sessions on entrepreneurship, business planning, and financial management to enhance their entrepreneurial spirit. We also aim at establishing mentorship programs where experiences entrepreneurs or educators can guide and support participants in their entrepreneurial journey. In addition, this program is intended to create a supportive community by organizing networking events, workshops, and forums where participants can connect with each other and with established entrepreneurs. This initiative outlines a collaborative effort between UGM ANGEL and Bale Kawruh, a community-based organization in Bugisan Village, Kalasan, Sleman, Yogyakarta, dedicated to improving the welfare of the local community through education. The organization, which translates to 'a home for knowledge' in Javanese, conducts various community development programs, including Ngangsu Kawruh Babagan, a school focusing on household-based garbage management. The school targets 30 women with low income, low education backgrounds, residing in the rural areas of Bugisan Village. The curriculum involves perception shifting, reducing, reusing, and recycling household garbage. The success of the program is evident as the knowledge has been perceived and internalized by the participants. The next step involves educating the working groups on starting micro and small size business based on the concept of garbage recycling. UGM ANGEL plans to collaborate with Bale Kawruh to organize networking events, workshops, and forums, involving established sustainability-based entrepreneurs. The aim is to educate disadvantaged groups, particularly women from Bugisan Village, and to develop and train leaders in micro-small green business. This collaboration is designed to create a synergistic harmony between





privileged and disadvantaged groups, emphasizing sustainability values. The initiative reflects a commitment to community development, education, and empowering individuals to initiate environmentally conscious business for economic improvement.

Figure 4.7: The Community in Bale Kawruh



#### 4.9 THE ANGEL PROGRAM

The following describe how ANGEL will be implemented IN UGM:

Selecting participants for ToT, training, incubation, and start-up

Participants for ToT and training program are prospective young lecturers and dedicated staff from our faculty (FEB) and other faculties at Universitas Gadjah Mada. Participants for incubation and start-up programs are research assistants, potential students and staff from FEB and other faculties. The participants will be carefully selected based on their competence, knowledge, and the need for our institution to accelerate and disseminate the ANGEL's mission. In selecting the participants, we also consider a balanced aspect with respect to certain marginalized groups such as gender, races, and disadvantaged people.

Monitoring and sustainability plans

To ensure the plan will run smoothly, the Organizing Committee of ANGEL Innovate Unit appointed by the Dean of the Faculty will monitor the progress periodically. As the ANGEL Innovate Unit established under the Entrepreneurship and Leadership Centre of Department of Management FEB UGM, sustainability of the ANGEL Innovate Unit will not be an issue. The center is mainly funded by the Faculty to conduct supporting activities on how to stimulate entrepreneurial intentions and business start-up. The center has dedicated funds, staff, and resources for a long sustainability program.





#### 4.10 RESOURCES

UGM is equipped with resources needed to manage the action plans proposed above. The resources include:

- Human resources: UGM has an excellent pool of experts and students. This is a good starting point as it shows our human resources' basic and advanced understanding on related fields of business, entrepreneurship, leadership, communication, and technology. Such an existing human resources will be a strong base to embrace ANGEL's capacity building activities.
- Technological resources: UGM is also equipped with sophisticated technological resources required to perform a wide range of activities.
- Financial resources: As ANGEL is a co-funded project involving European Union and the school, there's adequate financial resources to support ANGEL related activities
- Locational resources: UGM headquarters is located in the Bulaksumur Campus, Yogyakarta. Yogyakarta is known for its wide range of creative potential. Therefore, UGM is surrounded by a great number of aspiring entrepreneurs.

#### 4.11 ACTION PLAN

The action plan, as shown Table 4.9 shows UGM's work plan in conducting ANGEL activities. UGM has finished the development of the gap analysis report during the 2nd year of the project. The gap analysis is then used as the basis for further activities development. In the first quarter of the 3rd year (2023), UGM will conduct a training of trainers (ToT) for teaching and administrative staff to build an ANGEL ecosystem in the university and create a shared understanding of green entrepreneurship and leadership. Once the ToT is completed, UGM will also conduct an ANGEL training for the community (internal and external stakeholders who aspire to become green entrepreneurs) during the 3rd year of the project. Lecturing, coaching, mentoring, and also incubation will comprise the ANGEL training. Along with all of the activities mentioned, UGM will also conduct dissemination activities to continuously raise awareness upon ANGEL.

Table 4.10: UGM's Work Plan in Conducting ANGEL Activities



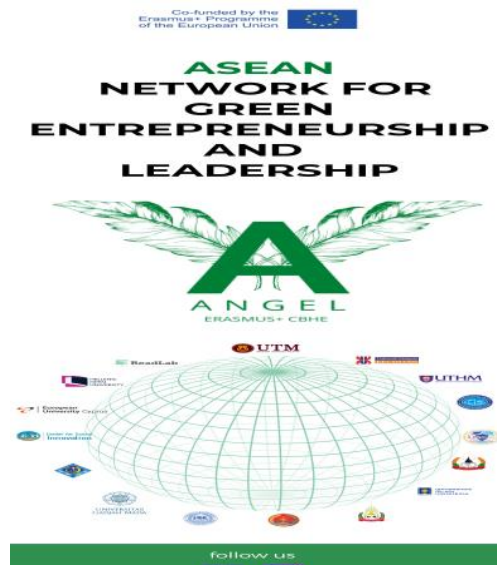


	2nd Year	3rd Year											
		M 25	M 26	M 27	M28	M 29	M 30	M 31	M 32	M 33	M 34	M 35	M3 6
Launch of Gap Analysis													
Establishment of the ANGEL Innovate Unit													
Training of trainers													
Sensitization													
Training													
Accompaniment													
Coaching													
Mentoring													
Incubation													
Dissemination													





## STRATEGIC PLANNING -UII





## 5.0 CONTEXT

For Indonesia, entrepreneurship development is necessary considering that currently, Indonesia's entrepreneurship rate has only reached 3.47%, lower than neighboring countries, such as Singapore with an entrepreneurship rate of 8.5%, Thailand, and Malaysia at 4.5%. In fact, to become a developed country, at least a minimum of 4% of the proportion of the population is needed.

The Islamic University of Indonesia is faced with the challenge of building international academic excellence and creating a real impact on society. Based on international benchmarks, it is known that the 126 best universities in the world record a ratio of alumni who open their own businesses after graduation of 30 – 51%. The result of a tracer study at UII in 2017, revealed that only 4.10% of alumni are entrepreneurs. UII is inspired by Al-Quran verses to increase this ratio to produce the best innovative goods and services. Surah Ibrahim 14: 24-25 reminds the example given by Allah as a good sentence has strong roots stabbing into the ground (rooted in Islamic values), its branches soaring to the sky (high innovation), and bearing fruit throughout the ages by Allah's permission SWT.

To achieve this, a breakthrough effort is made with a curriculum review to comb learning outcomes that are rooted in Islamic values and entrepreneurial competencies required at a global level. To promote innovation, evaluate and change the mindset of higher education management at the Study Program to University levels, this has been followed up with programs to accelerate the process of creating innovations. Efforts to bear fruit throughout the year have been carried out by UII with the establishment of an innovation ecosystem structurally, starting from the University Leadership level (establishment of Deputy Chancellor IV for Partnership and Entrepreneurship), and institutional support systems (establishment of the Directorate of Development and Entrepreneurship). Entrepreneurship Development/Growth Hub) and innovation creation facilities (raising student incubator status to Business Incubation and Joint Innovation/IBISMA) with physical facilities, budgets, and programs. After the implementation process, the ratio of graduates who become entrepreneurs increases to 15% (S1) and 14% (S2) in 2020.

UII has continuously innovate its academic programs. Hence, it has achieved an increase in the ratio of entrepreneurial graduates from 4.74% in 2017 to 14% in 2021. This target has exceeded the Ministry of Education and Culture's target of 10% of university graduates' entrepreneurship. UII can contribute to the Strategic Plan of the Ministry of Cooperatives and SMEs in setting a target ratio of entrepreneurship to the population in Indonesia to be 4% in 2020-2024.







Strengthening values and developing internal capacity benefits the study program and its students. Strengthening values in the entrepreneurial aspect has been carried out by following up on the results of curriculum evaluation and the level of higher education innovation at the study program level. Curriculum evaluation also refers to the achievement of Entrepreneurship Learning Outcome (ELO) from the international EntreComp (Entrepreneurial Competence) standard from the European Union. At the same time, the level of institutional innovation uses the HEInnovate framework ([www.heinnovate.eu](http://www.heinnovate.eu)).

Value strengthening has been carried out with the support of resources from Vice Rector IV in the form of ELO Grants to strengthen HEInnovate at the Study Program level. Based on the evaluation of 15 undergraduate study programs that have actively participated in evaluating their curriculum and institutional capacity, 3 study programs have been selected that are most committed and have systematic programs for transformation in the entrepreneurial aspect, namely: Pharmacy Study Program, Industrial Engineering Study Program, and Management Study Program. The beneficiaries of student groups or joint inventions in 2021 are as many as 42 start-ups that receive assistance and funding. Meanwhile outside the campus, at least 100 MSMEs benefit from mentoring which is carried out simultaneously with the selection process to get the best 25 to receive funding assistance.

One of the innovations of UII Growth Grow which is a breakthrough, is the Business Incubation and Joint Innovation services. This digital portal-based service provides broad opportunities for the two main parties, namely universities, especially students and industry, to meet each other in the same space of interest, namely business development (<https://simpultumbuh.uii.ac.id/ibisma/>). The navigation process can be served in a space designed to grow collaboration (Co-Growing Space). Exploration of Pre-Seed Funding and Seed-Funding, or skill development mixed in the Growth Academy service. Nonetheless, there is no dedicated course for entrepreneurial leadership at the current stage. However, there is a compulsory subject on Syariah Entrepreneurship deliver Islamic Leadership content regarding Prophet Muhammad, based on Al Quran and Al Hadith. Moreover, UII spread the impact of individual motivators and organizational units to actively participate in the transformation towards an Entrepreneurial University by opening innovative ideas, giving recognition, and strengthening potential groups driving transformation in IBISMA Growth Academy (IGA). UII encourages students and staff to have a business or startup by providing a UBIC Grant (UII Business & Innovation Challenge Grant). This incubation grants the UII academic community a total funding of 200 million Rupiah. The UBIC program lasts for eight months from April-December. Annually, there were 150 UBIC applicants, 25 passed the business plan stage, and about ten tenants passed the final funding stage.

## 5.1 ANALYSIS





Strategic planning is required for supporting the UII’s transformation into an Entrepreneurial University. More specifically, the objective is to develop a specific theme on Green and strengthen the capacity to lead the transformation. Hence, UII applies SWOT analysis to where the status and directive plan of the university’s effort is in terms of a) green, b) entrepreneurship, and c) pivotal leadership.

Box 5.1: SWOT-TOWS Analysis

	<b>Internal</b>	<b>Strengths</b>	<b>Weaknesses</b>
<b>External</b>		<b>1. Strong Policy Support</b> <b>2. Hub of Innovation Method</b>	<b>1. Financial Literacy</b> <b>2. Immature IP Policy</b>
<b>Opportunities</b>		SO	OW
<b>1. National Grants available</b> <b>2. ASEAN Level Partners</b> <b>3. Big domestic market</b>		1-1: Angel Hub as University Support System to reach opportunities. 1-2: ASEAN Network to go beyond national boundary 1-3: ANGEL Market Place 2-1: Rapid Innovation Program 2-2: Lead ASEAN Hackathon 2-3: Glocal Innovation Approach	1-1: Innovation Matching (Hacker, Hipster, Hustler) 1-2: Regional Financial Training 1-3: Local Content Workshop 2-1: Univ. IP Policy establishment 2-2: Regional IP Workshop 2-3: TTO & TTC Services
<b>Threats</b>		TS	TW
<b>1. Competition with vast industrial countries</b> <b>2. Valley-of-death for startup</b>		1-2: Backward and Forward cooperative policy 1-2: Capstone for graduate programs 2-1: IP-Background and prediction Training 2-2: Micro-Credential Service	1-1: Long-tail Business Training 1-2: Financial Report Analysis Training 2-1: IP-TESE Evolution Training 2-2: Licensing Scheme Model

## 5.2 STRATEGY

UII’s long-term goal is:

To supporting the UII’s transformation into an Entrepreneurial University through Green and strengthen the capacity to lead the transformation.

Objectives:





To increase the university's entrepreneurial ratio and to lead the transformation of green and impact investment programs.

The milestones:

Before the end of 2026, Ull aims to establish Green-Science Techno Campus (GSTC). Therefore, it requires set of facilities to support (e.g. incubator, Technology Commercialization Office, Technology Transfer Office, Institutional Center of Excellence, Teaching Industry).

Those facilities will enable in-wall industry, research capability, startup, innovation dissemination, IP management, product commercialization, and others. To get there, the Angel Hub will act as:

- Transformation planners towards Entrepreneurial University through cross-Directorate and Agency contributions to structure governance for the innovation ecosystem at Ull.
- Guiding the acceleration of technology readiness through international training and certification for innovation expertise.
- Motivator of individuals and organizational units to actively participate in the transformation towards an Entrepreneurial University by opening up innovative ideas, giving recognition, and strengthening potential groups .
- Enabler individual participation (students, lecturers, students) and organizational units (student programs, faculties, study centers, laboratories) to seize opportunities to acquire resources for science and technology-based entrepreneurial activities.
- Sharing roles with other internal organizational units, cross directorates (DPPM), and PusHAKI for the creation, protection, and utilization of Intellectual Property Rights .
- Partnering with internal units (study programs and cross directorates) and external , on a global , national and local scale.

### 5.3 Strategic Levers





With the progression of entrepreneurship transformation, UII won the trust to carry out the chairmanship of the Association of Indonesian Entrepreneurship Accelerators (Akselwira). This association is a transformation that expands the impact of the entrepreneurial network, which is a member-based institution of higher education, both at the study program level and at other levels that have the mandate to develop and accelerate entrepreneurship in tertiary institutions.

From the Erasmus+ANGEL which strengthen networks between tertiary institutions and develop institutional network focal points under Angel HUB. Erasmus + ANGEL also produced the Center for Ecosystem Innovation and Business Acceleration together with a network of 15 universities in Indonesia and ASEAN. The rich benefits and network expansion can be shown in the recognition and trust of other parties to manage the resources they have to produce a big impact.

The trust from the Ministry of Education, Culture, Research and Technology has increased in UII. The Merdeka Campus Competitive cooperation contract which gives the mandate of the Growing Node as Institutional Support Systems (ISS) has produced schemes and instruments for Entrepreneurial Capstone as a form of implementation of Merdeka Learning Merdeka Campus. Trust at the local and national levels in the Cooperative and MSME sector has increased, from a joint program with the budget of each institution to an institutional contract for the management of DIY Privileges funds, and an incubator and MSME development fund at the national level. Likewise, for the Professional Certification Institute (LSP UII), the recipient of professional development grants extends to various parts of the country.

UII also leverages benefits through collaboration with private partners and turns the UBIC scheme into a new UBSC (University Business Solution Challenges) scheme to capture problems from the industry to be solved by innovators at universities. To increase market penetration Cooperation in the establishment of a campus marketplace with private partners resulted in UIIGerai.bhinneka.com and an e-catalog system (UIIKatalog.bhinneka.com) for procuring goods and services in universities. Trust from other tertiary institutions was also obtained by UII holding the Chair of the Association of Indonesian Entrepreneurship Accelerators (Akselwira).

#### 5.4 MODEL of ANGEL

UII's Model of Angel is derived from QS Surah Ibrahim 14: 24-25 reminds the example given by Allah as a good sentence is one that has strong roots stabbing into the ground (rooted in Islamic values), its branches soaring to the sky (high innovation) and producing fruit (benefits) throughout the ages by Allah's permission SWT.

Therefore the tasks are:

TASK 1: Value strengthening and internal capacity building

TASK 2: Promote continuous innovation to build international recognition





### TASK 3: Diversify benefits through expanding network reach and increasing impact

#### 5.5 ACCOMPANYING MEASURES

The accompanying measures involve three major elements:

- **Reinforcing Values**

The Hub for Transformation planning towards an Entrepreneurial University through cross-Directorate and Agency contributions for the arrangement of governance for the innovation ecosystem at UII, including the transition of educational content to strengthen Entrepreneurial Learning Outcomes (ELO) in the curriculum at UII, as well as institutional strengthening referring to Higher Education Innovation (HEInnovate) Frameworks. On the other hand, the Hub for Guiding the acceleration of technology readiness through international training and certification for innovation expertise (Teoriya Resheniya Izobreta Telskikh Zadact/TRIZ) and Katsinov measurement (Innovation Readiness Level), as well as understanding of industrial systems on Supply Chain Management aspects, as well as sharing ideas in Growth Talks series and Growth Festival.

- **Propose Innovation**

The Hub of Individual motivators and organizational units to actively participate in the transformation towards an Entrepreneurial University by opening innovative ideas, giving recognition, and strengthening potential groups driving transformation in IBISMA Growth Academy (IGA) and Passage to ASEAN (P2A) Hackathon activities. The Hub of Enabler individual participation (students, lecturers, students) and organizational units (students, faculties, study centers, laboratories) to seize opportunities to acquire resources for science and technology-based entrepreneurship activities through the UBIC Grant scheme (UII Business & Innovation Challenges), pre-start up (Prospective Technology-Based Startup Companies/CPPBT) and start-ups (Technology-Based Startup Companies/PPBT) up to business matching with strategic partners.

- **Enlarge Benefits**

The Hub of Role Sharing with internal organizational units, cross directorates (DPPM), and PusHAKI for the creation, protection, and utilization of HKI at UII with reference to policies from Ministries/BRIN and institutions related to resource management and downstream innovation results. The Hub of Partnering with internal units (study programs and cross directorates) and external (Global: Erasmus + and Regional: Passage to ASEAN, international industry in the Netherland Uitzending Managers (PUM) Programme with the Confederation of Netherlands Industry and Employers), national industry, as well government agencies (Ministry of Manpower, National Professional Certification Agency, regional technical offices) to encourage entrepreneurship, as well as skill recognition.





Aside from the above accompanying measures, ANGEL UII also pays attention to mitigating risks. For this, there is a need for a policy umbrella for forming an innovation ecosystem, both the Chancellor's Regulations or University Regulations and their derivative regulations. The draft from the university has been prepared together with other Directorates. Some of the issues that can be managed include:

- Management of spin-offs resulting from mature innovations requires proper management of economic rights and moral rights.
- In order for academics to remain focused and not be distracted by the new bustle of entrepreneurship, it is necessary to have a protection scheme, IPR licenses and proper downstream facilitation for UII.
- Regulating acceptance of innovation downstream results so that the foundation's tax burden and demands for the financial value of the results of the commercialization of inventions at universities as important factors in world rankings can be properly regulated.

In an effort to achieve the objective of Propelling Innovation, the Agency/Directorate identifies obstacles and/or failures and risks as follows (describe):

1. Along with the process of issuing an umbrella regulation, the licensing scheme needs to regulate the proper management of economic rights and moral rights in order to provide incentives that further motivate the issuance of new innovations. The solution to this issue is approached on the basis of QS. al-Mujilah 58: 11:... **يَرْفَعِ** **دَرَجَاتِ الْعِلْمِ** **أَوْتُوا** **وَالَّذِينَ** **مِنْكُمْ** **آمَنُوا** **الَّذِينَ** **اللَّهُ** namely by licensing contracts that place inventors in a high degree, on moral and economic rights for the IPR produced.
2. In order for the Lecturers-Researchers-Inventors to remain focused and not be distracted by entrepreneurial activities but continue to innovate, the four characteristics of the Prophet Muhammad SAW (Siddiq, Fathonah, Amanah, Tabligh) are enforced through protection schemes, IPR licenses and downstream facilitation.

To achieve objectives UII has identified challenges and proposed solutions as follows:

1. Acceptance of downstream innovation results, faced with the risk of the foundation's tax burden vs the demand for the financial value of the results of the commercialization of the invention as an important factor in the world ranking. The resolution of this issue was approached with a warning in QS. al-Mutaffifin (83: 1-36) about people who cheat.





2. Marketplace. The market is important for downstream product innovation but often recognized by the boisterous market by trickery. The four basic characteristics (Siddiq, Fathonah, Amanah, Tabligh) are the basic foundations of Islamic economics and are proposed to be implemented through the establishment of the Center for Ecosystem Innovation and Business Acceleration, which is located at the Faculty of Law as a Technology Transfer Office (TTO) and Technology Commercialization Office (TCO) to oversee transactions and form the 4 important nature of it.
3. Product marketing: market test vs market penetration. It is forbidden to sell goods that are not perfect (in this case it is still in the market validation stage so that unintentional 'defects' are identified) and learning instructions for dealing with innovative products can be completed by holding a campus marketplace microsite (Ullgerai.bhinneka.com). This market place is a closed market for internal circles in various stages of product maturity, before advancing to the national marketplace.

## 5.6 Institutionalization

It is strongly suggested that the operation of the entrepreneurship center be integrated into the organizational structure of the university and recognized as such by the university council. The ANGEL Innovate Unit will become a strategic unit that integrated with the organizational structure of Universitas Islam Indonesia. It will be under Supervision of Vice Rector of Partnership & Entrepreneurship and Directorate of Entrepreneurial Development. The organizational structure plan will be established as Figure 5.6.



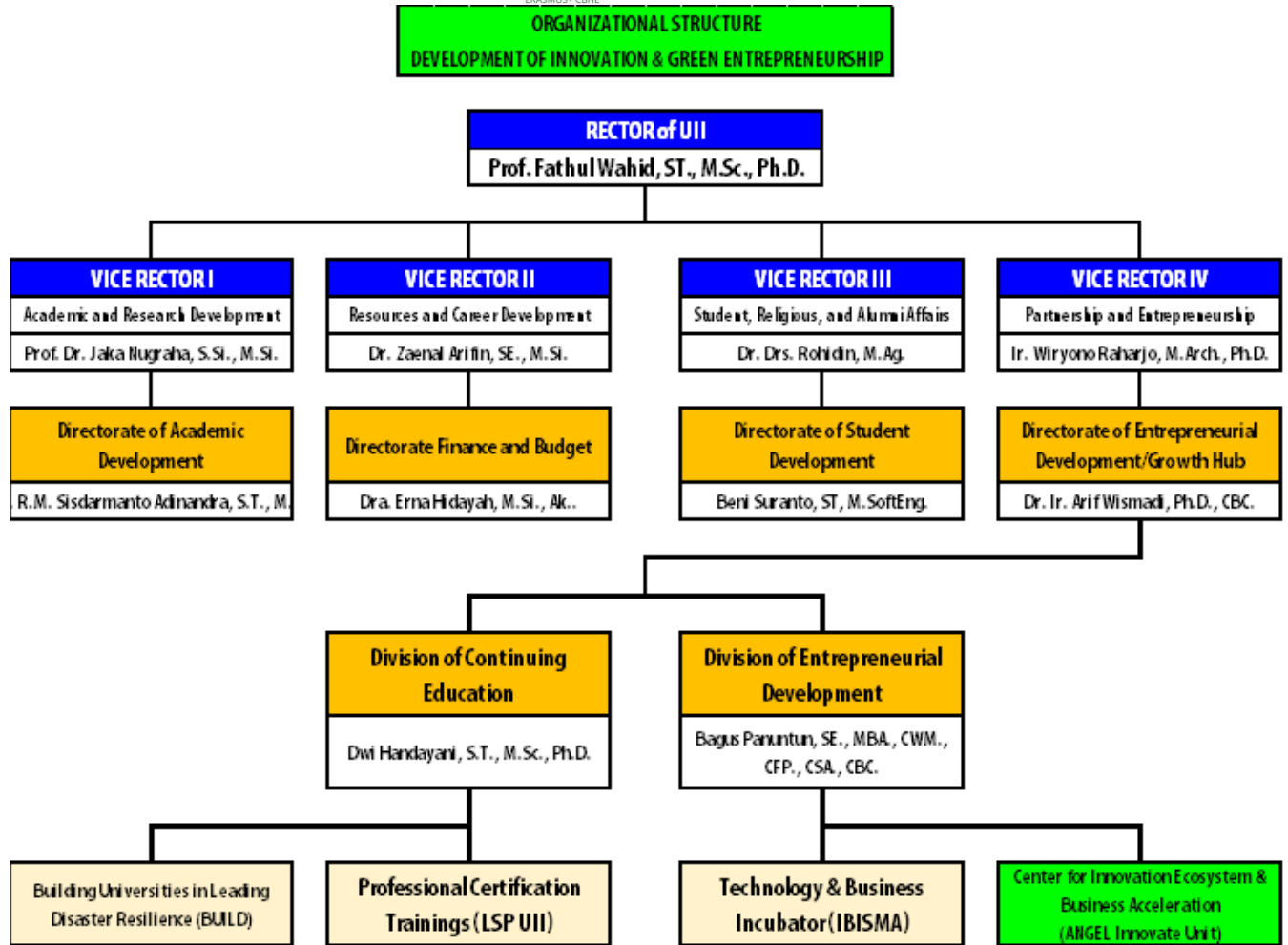


Figure 5.6: Organizational Chart of UII's ANGEL.

## 5.7 INFRASTRUCTURE and EQUIPMENT

Figure 5.7 below depict an overview of the room design for ANGEL Innovate Unit in which all activities and strategic implementation will be done.





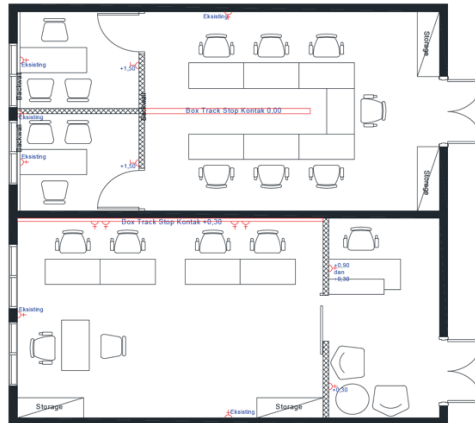


Figure 5.7: Space design for ANGEL Innovate Unit at UII

Table 5.7 below list the equipment for UII's ANGEL Innovate Unit. The equipment will support the process of UII establishing a social science lab to be used for ANGEL's capacity building during the project, and after it ends.

Table 5.7: Equipment List for UII's ANGEL Innovate Unit.

No	Items (as proposed in the grant proposal)	Items (To be purchased by the partner institution)	Quantity
1	5 Workstations (CPU: Intel Core i7-6700   Graphics: Intel HD Graphics 530   RAM: 8GB   :   Communications: Gigabit Ethernet   Dimensions (W x D x H): 34 x 38 x 10cm)	WORKSTATIONS DELL All-in-One Inspiron 5400 Intel Core i7-1165G7 Processor (12M Cache, up to 4.70 GHz, with IPU) RAM: 8GB DDR4 HD: 1 TB HDD + 256 GB SSD NVIDIA GeForce MX330 OS: Windows 10 (licensed) 23.8 Inch Monitor Optical mouse QWERTY Keyboard	2





No	Items (as proposed in the grant proposal)	Items (To be purchased by the partner institution)	Quantity
2	E-LED Screen (Portable)	Huawei IdeaHub S Screen Size: 65-inch/86-inch Screen Model: E-LED (65")/D-LED (86") Resolution: 4K Camera Resolution: 1080p30 Speakers Frequency domain: 40-20kHz Microphone Sound pickup distance: 8 m Sound pickup angle: 180° forward	1
3	5 Laptop (Apple MacBook Pro 15"-Retina Display) x 2 pcs	LAPTOP Apple MacBook Pro M1 CPU: Apple M1 chip with 8-core CPU and 8-core GPU RAM: 16GB unified memory HDD: 1TB SSD storage LCD: 13.3-inch (diagonal) LED-backlit display with IPS technology; 2560-by-1600 native resolution at 227 pixels per inch OS: macOS	2
4	Mini Studio Set	Alite Dry Cabinet GD-40L	1
		Audio Recorder Zoom H6 + Aksesoris	1
		Aximmetry Studio Dual Engine	1
		Battery Charger BC-TRW	1
		ACER Predator Orion PO9-900 (Core i9-9900X) RAM: 32GB (2x 16GB) DDR4 NVIDIA GeForce RTX 2080 with 8 GB DUAL SLI HDD: 2TB SSD: 512GB + Monitor LG 25" Ultra Wide	1
		Focusrite Scarlet 2i2 3rd Gen Studio	1
		Godox LED Video Light 500C	1
		Kamera Sony Alpha A6600 18-135 mm Lens	1
		Mixer Yamaha MG10XU	1
		Saramonic Wireless Mirophone Blink 500 B2	1
		Seinheiser E914	1
		OBO Camera Tripod Combo A250	1
		UPS APC BV1000I-MS	1
vMix 4K	1		
FEIYU Gimbal Stabilizer G6 Max	1		





No	Items (as proposed in the grant proposal)	Items (To be purchased by the partner institution)	Quantity
5	4 Printer: HP Color LaserJet Pro MFP M277dw (3-n-1)	HP Color LaserJet Pro MFP M181fw A4 Color Laser Multifunction Printer Print, Scan, Copy and Fax, ADF Print speed up to 26 ppm (black) and 17 ppm (color) USB, Ethernet, Wi-Fi, Fax port	1

## 5.8 TARGET MARGINAL COMMUNITY

The Directorate of Entrepreneurial Development, UII with its incubator of IBISMA conducts annual training and capacity building for a group of beneficiaries. Among them are rural entrepreneurial communities, Micro, Small and Medium Enterprises (MSMEs). In rural community programs, UII collaborative with BRI (State Owned Enterprise of Banking Industry) with specific objectives to increase their engagement in digital technology and digital financial inclusion in their business process. The program starts with 87 Villages Owned Enterprise and followed by training targeted to more than 300 Local Leaders who selected and appointed to encourage rural people to start their business. The main content delivered is on the Leadership subject consisting of green leadership concept, principles, and strategies.

The programs for MSME (Micro, Small and Medium Enterprises) focus on increasing business scale and efficiency. Therefore, sustainable production and consumption is one of the concepts delivered to the participants. The conflicting objectives among the planet, people and profit are solved with innovation methodology. Furthermore, one of the main concerns of MSME is regarding their financial burden on financial cost due to interest of loan. While the business looks fine, many of them lose their assets or even get divorced due to the burden from the bank interest rate. Very often the owner struggles with loan interest. UII will help them by introducing Islamic sharia principle, and an innovation methodology to push down the COGS (cost of goods sold) and increase the price by revisiting value proposition to enhance the pain reliever and green features in their commodity.

The other groups of ANGEL program beneficiaries are people with diffability (different abilities). The challenge to work with this group is mainly if the focus is on product development. The industry requirement that always set a strict standard for quality and efficiency makes their product difficult to penetrate the market. Under such a situation, our program will start by focusing on their capacity to sale the products. It starts with training to be a drop-shipper of green products. The training includes green product selection criteria, setting up the price, and business process enhancement. At the later stage, their sense of empathy will be sharpening up with ideas and opportunity skills.





With the innovation methodology and expertise, we will assist them to generate new inventions or product innovations. The selected product idea will be protected as an Intellectual Property right and will be licensed to the manufacturing industry. With their specific capability we are in the process of recognizing and categorizing their skills as a 'hacker,' 'hustler' or 'hipster,' and later could be enhanced according to their business objectives.

## 5.9 THE ANGEL PROGRAM

The ANGEL's implementation includes:

### Participants Selection

At this stage, we disseminate the programs using various means of communication such as websites, social media platforms, and offline events. The opportunity is open for the students, academic staff and administrative staff who had intention on doing a green entrepreneurship and building a venture / startup.

### Registration

The registration opens at the early of the year (around December – January). The mechanism of registration is through Tenant Management System (TMS) Platform.

### Awareness program

Various awareness programs start from the registration date until the date of closing such as Webinars, Workshop and Business Plan Proposal Workshop.

### Training

The entrepreneurship capacity building curriculum that is called IBISMA Growth Academy started from a pre-incubation program, especially focusing on business design (Value Proposition Canvas, Lean Canvas and Business Model Canvas) and business modelling. The next stage of training is Incubation Program that focuses on finalizing prototypes, doing a product and market validations and creating a Most Viable Product (MVP) that are ready to launch. After reasonable feedback and product improvement after market penetration stage, the next phase will enter the post-incubation stage. All training materials and program delivered in blended method (asynchronous using video materials and synchronous using live Zoom sessions)





## Incubation

The Incubation process starts with the signing of incubation contract for 2 years on digital startups and 3 years for a technology (non-digital) startup. The various support such as mentoring, and coaching are delivered to assist the product and business development progress.

## Start-up

The important point output of our incubation program is venture creation. These are the situations when the startup up is legally founded and has minimum legal requirement and registration for their product and business. We also support the protection of intellectual property rights (IPR), to ensure the sustainability of the business in the long term.

## Plans for monitoring & Sustainability Measures

During the incubation contract for 2 years on digital startups and 3 years for a technology (non-digital) startup, we conduct several monitoring plans such as 1<sup>st</sup> stage of monitoring is focusing on ensuring the capacity building process successful. The 2<sup>nd</sup> stage monitoring focuses on product development after we provide pre-seed funding for the startups. The 3<sup>rd</sup> monitoring focuses on readiness of the startup to launch and enter the market. And the last monitoring is annual monitoring after their product penetrates the market.

Below is the list of programs for ANGEL Innovate Unit:

- Angel Hub as University Support System to reach opportunities. The program will be in the form of many supporting activities as ecosystem builders among Penta helix stakeholders.
- ASEAN Network to go beyond national boundary. The program will be in the form of collaborative co-incubation program among ASEAN Universities.
- ANGEL Marketplace. The program will be implemented in the form of promoting a marketplace platform as a means for testbed and market validation, and market penetration.
- Rapid Innovation Program. The program will be implemented through research collaboration between university resources and industrial partners resources.
- Lead ASEAN Hackathon. The program will be implemented through conducting ASEAN Entrepreneurship Hackathon and take a lead of the event.
- Global Innovation Approach. The program will be implemented through implementing TRIZ innovation approach for entrepreneurship and venture builder.
- Innovation Matching to link the inventor with financial and business experts
- Regional Financial Training to enhance the sense of regional business





- Local Content Workshop to enhance invention with local content
- Univ. IP Policy establishment as umbrella for innovation ecosystems
- Regional IP Workshop to get knowledge of crossborder IP management
- TTO & TTC Services to protect and utilize the invention
- Backward and Forward cooperative policy to merge the innovation outlook with green manufacturer
- Capstone for graduate programs to mitigate startup trapped under valley of death
- IP-Background and prediction Training to make innovation take a step forward of current innovation
- Micro-Credential Service for certify global standard for innovation skills
- Long-tail Business Training to embrace local capacity in modern business environment
- Financial Report Analysis Training for preparedness of commercialization.
- IP-TESE Evolution Training for patent prediction
- Licensing Scheme Model to monetize invention in non-for-profit organization

### 5.10 ACTION PLAN

Implementation of the ANGEL activities at UII will be done in the second to third year of the project. Table 5.10 shows the stages and time line.

Table 5.10: ANGEL Action Plan for UII

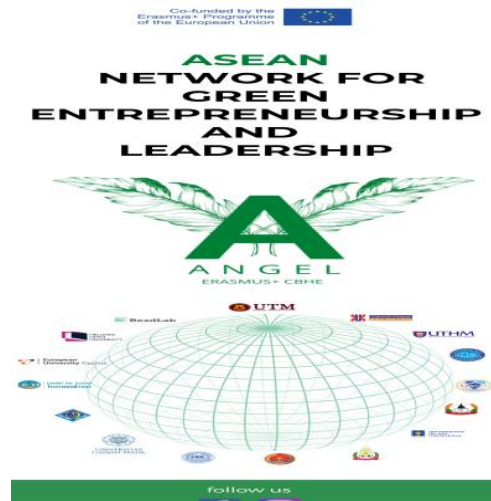
No	Activities	Months												
		1	2	3	4	5	6	7	8	9	10	11	12	
1	Angel Hub as University Support System to reach opportunities.	█												
2	ASEAN Network to go beyond national boundary	█												
3	ANGEL Market Place	█												
4	Rapid Innovation Program		█											
5	Lead ASEAN Hackathon			█										
6	Global Innovation Approach			█										
7	Innovation Matching			█										
8	Regional Financial Training				█	█	█							
9	Local Content Workshop					█								
10	Univ. IP Policy establishment						█	█						
11	Regional IP Workshop								█					
12	TTO & TTC Services									█	█	█	█	█
13	Backward and Forward cooperative policy									█	█			
14	Capstone for graduate programs									█	█	█	█	
15	IP-Background and prediction Training									█	█			
16	Micro-Credential Service										█	█	█	







## STRATEGIC PLANNING - USEA



## UNIVERSITY OF SOUTH EAST ASIA, CAMBODIA







## 6.0 CONTEXT

In Cambodia, the concept of green buildings has been gaining ground as the Cambodian Green Building Council (CamGBC) was set up at the end of 2019. Cambodia has tripled its national budget for climate change mitigation efforts and has set the goal of a 42 per cent reduction of emissions by 2030. Furthermore, Royal Government of Cambodia supported the establishment of the Green Economic or Investment Zone in the ASEAN bloc and Cambodia proposes to host the zone under the framework of the establishment of the ASEAN Green Deal that would allow the region to gradually transit into a community with sustainability, effective use of resources, and resilience.

In the current situation, very few universities in Cambodia, mostly in Phnom Penh, are providing support of entrepreneurship, business incubation and university industry relations. In case of University of South-East Asia (USEA), the vision, mission, and strategic goals are not state clearly mention about green entrepreneurship and leadership. It is mostly focused on building higher education and vocational training education system for all levels in accordance with national and international standards to provide knowledge, technical skills, soft skills and good attitude to learners to meet the needs of national and international labor market. In addition, USEA curricula, International Business and Tourism, are mainly only focus on entrepreneurship and leadership, but not GREEN. Entrepreneurship subject is introduced in year 3 semester 2 and leadership subject is in year 4 semester 1 of the two programs. Green is only a small part of Social Responsibility chapter.

Although, USEA opens doors for students and staff to have business, from the faculty aspects, topic in green seems less interest to the academic staff and students. We are lacking of personal experience, material resource, leadership, cross culture communication, and real practices since USEA has no specific unit responsible for entrepreneurship, business incubation and university industry relations yet.

## 6.1 ANALYSIS

The SWOT-TOWS matrix below shos the current situation of USEA ON green entrepreneurial leadership.

Box 6.1: SWOT-TOWS Analysis

Internal	<b>Strengths</b> 1. USEA commits to promote green entrepreneurship and leadership within and outside the university. 2. USEA-ANGEL project promotes GREEN entrepreneurship and leadership.	<b>Weaknesses</b> 1. USEA has no clear plan in promoting green entrepreneurship and leadership yet. 2. Very small number of USEA faculty members, academic staff, and students have acknowledged GREEN entrepreneurship and leadership.
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<p style="text-align: center;">External</p>	<p>3. USEA has support from the US Embassy Cambodia in establishing American Corner, only 4 corners in Cambodia on green transition.</p> <p>4. USEA Management team and lecturers promote GREEN in the curricula and their instructions.</p> <p>5. USEA partners, especially NGOs, are promoting green activities.</p> <p>6. USEA expanding its campus on a 40- hectare of land in Siem Reap</p>	<p>3. Most of USEA students often busy with their job, which makes seminars, internships or volunteering tricky to implement.</p> <p>4. USEA has no unit that exactly promoting GREEN yet.</p> <p>5. USEA is lacking of personal experience, material resource and budget in promoting green entrepreneurship and leadership.</p>
<p style="text-align: center;"><b>Opportunities</b></p> <p>1. Cambodia has committed its support for a regional initiative to develop a programme that abets home-grown innovative entrepreneurs with climate tech solutions.</p> <p>2. The Japanese International Cooperation Agency (JICA) is drafting a smart city master plan for Siem Reap city in Siem Reap province, home of famed Angkor Wat Temples, to become a model smart city in ASEAN.</p> <p>3. The International Labour Organization (ILO) continues working with Ministry of Education, Youth and Sport, Khmer Enterprise and other social partners to keep promoting entrepreneurship and further develop the business skills of Cambodian youth.</p> <p>4. EU projects prioritized promoting climate change.</p> <p>5. People in Siem Reap are becoming more aware of green in their communities.</p>	<p style="text-align: center;"><b>SO</b></p> <ul style="list-style-type: none"> <li>- An opportunity of USEA to be a major part of Siem Reap smart city project</li> <li>- Opportunities of USEA to receive grants on GREEN or climate change</li> <li>- USEA can Joint research opportunities with local and international partners</li> <li>- More supports from US Embassy and other institutions in terms of GREEN</li> <li>- Build GREEN among students, academic staff, administrative staff, and community</li> <li>- Build GREEN concepts in the new USEA campus</li> </ul>	<p style="text-align: center;"><b>OW</b></p> <ul style="list-style-type: none"> <li>- Opportunity to develop a clear USEA strategic plan in promoting green entrepreneurship and leadership</li> <li>- Opportunity to promote GREEN entrepreneurship and leadership to USEA faculty members, academic staff, and students</li> <li>- Put awareness to USEA students in their job performance or internship</li> <li>- Opportunity to establish ANGEL Innovate Unit at USEA to promote GREEN entrepreneurship and leadership</li> <li>- Opportunity to develop personal experience, material resource and budget in promoting green entrepreneurship and leadership at USEA</li> <li>- Opportunity of USEA to work with local authority and community in promoting GREEN entrepreneurship and leadership</li> </ul>
<p style="text-align: center;"><b>Threats</b></p> <p>1. Green entrepreneurship and leadership is still new in Cambodia.</p> <p>2. Being a low-income country, Cambodia can be challenging to invest funds in GREEN when priorities lie within developing the economy and reducing poverty.</p> <p>3. Rapid population growth has had a negative effect on GREEN economic growth -large</p>	<p style="text-align: center;"><b>TS</b></p> <ul style="list-style-type: none"> <li>- More universities in Cambodia aware of GREEN entrepreneurship and leadership</li> <li>- Enhance local people with the idea of GREEN in their community</li> <li>- Opportunity of community to get more income from the creative idea of GREEN for sustainable development</li> <li>- Opportunity of expand more</li> </ul>	<p style="text-align: center;"><b>TW</b></p> <ul style="list-style-type: none"> <li>- Case studies or best practices from local institutions</li> <li>- Networking with partners in ANGEL to promote GREEN entrepreneurship and leadership</li> <li>- Develop GREEN entrepreneurship and leadership model at USEA</li> </ul>





<p>existing deficiencies in infrastructure, limited productive capacity, un-employment and under-employment, as well as poor provision of health and education services.</p> <p>4. Cambodia has limited regulations and trained personnel to effectively monitor implementation of sustainable development activities.</p> <p>5. Jobs in the garment industry or energy sector were never mentioned GREEN.</p>	<p>on GREEN entrepreneurship and leadership to many people in Cambodia</p> <ul style="list-style-type: none"> <li>- Opportunity to build regulations on GREEN and trained personnel to effectively monitor implementation of sustainable development activities.</li> <li>- Providing a platform to local authority and/or government to aware of GREEN in industries especially garment industry.</li> </ul>	
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## 6.2 STRATEGY

### 1. Long-Term Goal

University of South-East Asia will promote national consciousness, social activities and green entrepreneurship and leadership to administrative staff, academic staff, students, and community where they can live in an era of globalization to contribute to a green society and sustainable development.

### 2. Objectives

The USEA-ANGEL strategic plan aims to:

- Promote management and good governance
- Improve the quality of education
- Promote research and development
- Promote national and international communication and cooperation

### 3. Milestones

Answering to the above objectives and also in accordance with USEA strategic plan, the ANGEL strategic plan of the University of South-East Asia aims to accomplish 4 milestones as follows:

#### 3.1. Management and Good Governance

This milestone focuses on establishing guideline and structure of ANGEL Innovate Unit at USEA together with financial management system supporting the unit.

#### 3.2. Improving the Quality of Education

Improving the quality of education is an important part of USEA strategic plan and wish to incorporate green entrepreneurship and leadership in related curricula in accordance with national and international standards and Cambodia Qualifications Framework. Furthermore, it is not only focus on academic staff capacity building on green entrepreneurship and leadership but also developing materials and study resources as well as promoting green entrepreneurship and leadership among USEA students and local community

#### 3.3. Promoting Research and Development

This milestone aims to revise the existing USEA research policy and planning as well as infrastructure in order to promote GREEN entrepreneurship and leadership. This is also put USEA afford to motivate researchers to conduct research and disseminate the results on green entrepreneurship and leadership to stakeholders.

#### 3.4. National and International Communication and Cooperation

Communication and cooperation are considered to be key success of the project implementation. This will highlight strengthening and expanding cooperation with partners related to green entrepreneurship and leadership, study tours of USEA administrative staff, academic staff and students as well as seek for internship/scholarship opportunities to promote green entrepreneurship and leadership.





### 6.3 STRATEGIC LEVERS

Since 2017, University of South-East Asia (USEA), has got strong supports to establish American Corner at University. Some of the notable achievement regarding entrepreneurship and leadership are as follows:

- Strengthening university student's leadership, organizations, and built networks to improve university and high school student's engagement within grassroots levels including youth leading small project implementation.
- Establishing Wildlife Club and cooperated with Fauna and Focus with the aims to support in environment management techniques and policies, improved wildlife preservation, plus fought climate change and environmental monitoring.
- Building network among US educational institutions through EducationUSA Fair.
- Promoting business environment initiatives and financing opportunities championed by build partnership with other NGOs in Siem Reap province which is currently underfunded from USAID.
- Encouraging a diverse set of relationships between firms, and the effects of strengthening coalitions to advocate upward to the government as a solidified constituency.
- Improving Tech-Innovation to promote the protection of COVID-19.

Nevertheless, most of the projects that have been implemented by USEA are not focus of GREEN entrepreneurship and leadership. Mostly, the previous projects focused on curriculum development. ANGEL is the USEA first project related to GREEN entrepreneurship and leadership. It is a good start of USEA to put ANGEL as the first branding in Siem Reap in terms of GREEN entrepreneurship and leadership.

### 6.4 MODEL of ANGEL

In line with USEA strategic plan 2019-2024, USEA-Model of ANGEL will focus on 4 main aspects namely management and good governance, improving the quality of education, promoting research and development, and national and international communication and cooperation. Main activities in each task are as follows:

Task 1: Management and Good Governance

- Preparing organizational structure for green entrepreneurship and leadership at USEA
- Establishing ANGEL Innovate Unit at USEA
- Developing capacity of administrative staff in the ANGEL Innovate Unit for effective operations
- Preparing financial management system supporting green entrepreneurship and leadership

Task 2: Improving the Quality of Education

- Incorporating green entrepreneurship and leadership in related curricula at USEA in accordance with national and international standards and Cambodia Qualifications Framework.
- Improving academic staff capacity on green entrepreneurship and leadership
- Developing materials and study resources related to green entrepreneurship and leadership
- Promoting green entrepreneurship and leadership among USEA students and local community

Task 3: Promoting Research and Development





- Revising USEA research policy and planning in order to promote GREEN
- Developing research infrastructure for green entrepreneurship and leadership
- Developing and motivating researchers to conduct research on green entrepreneurship and leadership for sustainable development
- Disseminating the revised research policy and planning to stakeholders

#### Task 4: National and International Communication and Cooperation

- Strengthening and expanding cooperation with partners related to green entrepreneurship and leadership
- Organizing study tours of USEA administrative staff, academic staff and students to GREEN-based communities or institutions inside or outside the country
- Seeking for internship/scholarship opportunities to promote green entrepreneurship and leadership
- Promoting green entrepreneurship and leadership in both national and international platform

## 6.5 ACCOMPANYING MEASURES

USEA commits to promote green entrepreneurship and leadership within and outside the university especially USEA is one of the members of Young Entrepreneurs Association of Cambodia (YEAC) which envision a key driver of the economic engine that create job and wealth and also build a sustainable and well-functioning association. USEA-ANGEL HUB will be part of the success of USEA in promoting Green entrepreneurship and leadership with the community. Series of activities on green entrepreneurship and leadership will be organized or co-organized in other to disseminate to students, academic staff, and community.

## 6.6 INSTITUTIONALIZATION

USEA will review the organizational structure by functioning ANGEL Innovate Unit in the USEA structure and clearly functioning a USEA-ANGEL team to promote green entrepreneurship and leadership. Furthermore, faculty members have a high commitment to integrate green entrepreneurship and leadership in their curriculum. In addition, USEA academic staff commit to promote green entrepreneurship and leadership in their classes.

## 6.7 INFRASTRUCTURE AND EQUIPMENT

USEA will allocate a 5-working space to establish ANGEL Innovate Unit equips with the purchased equipment together with preparing ANGEL guide specifications and delivery, reviewing ANGEL training tools and materials as well as preparing ANGEL training program. The infrastructure and equipment will be developed or renovated according to the needs of students, academic staff and community.

## 6.8 The ANGEL PROGRAM

To ensure the effective operational management in the ANGEL Innovate Unit, the proposed ANGEL programs are as follows:

1. Developing capacity of administrative staff in the ANGEL Innovate Unit for effective operations
  - Study the existing ANGEL materials and follow up the updating information about ANGEL activities via ANGEL website or social media
  - Conduct study visits to institutions providing support entrepreneurship, business incubation and university industry relations
2. Incorporating green entrepreneurship and leadership in related curricula at USEA





- Conduct meetings with related management team and academic staff to revise the existing curricula by incorporating green entrepreneurship and leadership in the target programs or subjects
  - Develop or revised course syllabi, textbooks, reference books, and other related study and teaching materials
  - Disseminate the new revised programs/course syllabi to stakeholders
3. Improving academic staff capacity on green entrepreneurship and leadership
    - Organize 2-day trainings on green entrepreneurship and leadership to USEA academic staff by the trained staff at UTM, Malaysia
    - Provide opportunities to USEA academic staff to join conferences or workshop related to green entrepreneurship and leadership
    - Encourage USEA academic staff to promote green entrepreneurship and leadership in their classes
  4. Developing materials and study resources related to green entrepreneurship and leadership
    - Conduct a meeting among TOT trainees at UTM to review training materials (ANGEL toolbox)
    - Conduct a meeting with USEA management team (dean and vice dean) of related faculties to provide more input on the training materials
    - Purchase/develop textbooks or reference books supporting green entrepreneurship and leadership
    - Prepare e-library related to green entrepreneurship and leadership
  5. Promoting green entrepreneurship and leadership among USEA students and local community
    - Promote green entrepreneurship and leadership among USEA students
    - Promote ANGEL-Community building
    - Develop USEA-ANGEL Community Facebook
  6. Developing research infrastructure for green entrepreneurship and leadership
    - Improve the ANGEL Innovate unit to have a good environment with enough physical and research materials in accordance with national and international standards
    - Upgrade research structure in accordance with mission, goals and research policy of the university
    - Upgrade research infrastructure and network building
  7. Developing and motivating researchers to conduct research on green entrepreneurship and leadership for sustainable development
    - Promote research topics on green entrepreneurship and leadership with USEA students, academic staff and administrative staff
    - Develop proposals for research grants to support GREEN activities
    - Promote ANGEL entrepreneurship prize
  8. Disseminating the revised research policy and planning to stakeholders
    - Organize a meeting with USEA students to promote research on green entrepreneurship and leadership
    - Organize a meeting with USEA administrative staff and academic staff, especially thesis advisors, to promote research on green entrepreneurship and leadership
    - Post in the Facebook page and USEA website
  9. Promoting green entrepreneurship and leadership in both national and international platform
    - Collaborate with higher education partners for joint research projects focus on GREEN
    - Publish research reports or newsletters with partners in accordance with national and international standards
    - Disseminate reports to stakeholders widely and effectively.
  10. Preparing financial management system supporting green entrepreneurship and leadership
    - Revise USEA financial management policy and procedure in supporting GREEN activities
    - Enhance financial management supporting green entrepreneurship and leadership during and beyond project implementation
    - Conduct internal audit in accordance with the guidelines of the project and the Royal Government of Cambodia





- Effectively manage both soft and hard copies of the financial data during and beyond the project implementation

Furthermore, USEA will allocate fund and in-kind resources in order to regularly develop the exiting ANGEL Innovate Unit. Along with this, USEA will seek research grant opportunities to support similar ANGEL project during and beyond the implementation. In addition, USEA will call on implementers to invest in such project to improve the quality of implementation today and sustained impact in the years to come.

## 6.9 TARGET MARGINAL COMMUNITY

USEA envisions develop human resources with high competency, virtue, and professional attitude in response to national and international labor market, where they can find employment and live in the era of globalization to contribute to the building of society. Furthermore, one of the USEA core values is “maintain and protect the environment”. Therefore, to promote green entrepreneurship and leadership, USEA targeted Teuk Chob Khnar Po Community located in Khnar Po commune, Sot Nikum District, Siem Reap Province, Cambodia.

USEA will work with Siem Reap provincial and local authorities to go deeper with the people in the community to introduce green idea and closely work with the head and committee members of the community in order to promote green entrepreneurship and leadership.

At the faculty level, USEA will promote technology in green business among the students and faculty members by forming group competition- one mentor (faculty member) and 3-4 students.

As the member of Young Entrepreneurs Association of Cambodia (YEAC), USEA will seek for collaboration with YEAC to promote not only entrepreneurship and leadership but also green entrepreneurship and leadership.





### 6.10 ACTION PLAN

No.	Activity	2023				2024				2025				2026				2027			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>I</b>	<b>Management and Good Governance</b>																				
<b>1</b>	<b>Preparing organizational structure for green entrepreneurship and leadership at USEA</b>																				
	1.1. Establish an organizational structure of USEA-ANGEL team	√																			
	1.2. Functioning USEA-ANGEL team	√																			
	1.3. Develop USEA-ANGEL team regulations in accordance with USEA policy	√								√									√		
<b>2</b>	<b>Establishing ANGEL Innovate Unit at USEA</b>																				
	2.1. Allocate a 5-working space for ANGEL Innovate Unit equip with the purchased equipment	√																			
	2.2. Prepare ANGEL guide specifications and delivery	√	√																		







	2.3. Review ANGEL training tools and materials	√	√																			
	2.4. Prepare ANGEL training program		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	2.5. Prepare monthly action plan for the unit	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
<b>3</b>	<b>Developing capacity of administrative staff in the ANGEL Innovate Unit for effective operations</b>																					
	3.1. Study the existing ANGEL materials and follow up the updating information about ANGEL activities via ANGEL website or social media	√																				
	3.2. Conduct study visits to institutions providing support entrepreneurship, business incubation and university industry relations		√		√		√		√		√		√		√		√		√		√	





No.	Activity	Year 1				Year 2				Year 3				Year 4				Year 5			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
4	Preparing financial management system supporting green entrepreneurship and leadership																				
	4.1. Revise USEA financial management policy and procedure in supporting GREEN activities	√																			
	4.2. Enhance financial management supporting green entrepreneurship and leadership during and beyond project implementation	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	4.3. Conduct internal audit in accordance with the guidelines of the project and the Royal Government of Cambodia				√				√				√				√				√
	4.4. Effectively manage both soft and hard copies of the financial data during	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√



	and beyond the project implementation																				
II	Improving the Quality of Education																				
5	Incorporating green entrepreneurship and leadership in related curricula at USEA in accordance with national and international standards and Cambodia Qualifications Framework.																				
	5.1. Conduct meetings with related management team and academic staff to revise the existing curricula by incorporating green entrepreneurship and leadership in the target programs or subjects	√																			
	Develop or revised course syllabi, textbooks, reference books, and other related study and teaching materials	√				√				√				√					√		
	5.3. Disseminate the new revised programs/course	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√



	syllabi to stakeholders																				
6	Improving academic staff capacity on green entrepreneurship and leadership																				
	6.1. Organize 2-day trainings on green entrepreneurship and leadership to USEA academic staff by the trained staff at UTM, Malaysia								√			√				√				√	
	6.2. Provide opportunities to USEA academic staff to join conferences or workshop related to green entrepreneurship and leadership	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	6.3. Encourage USEA academic staff to promote green entrepreneurship and leadership in their classes	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
7	Developing materials and study resources related to green entrepreneurship and leadership																				
	7.1. Conduct a meeting among TOT trainees at UTM to	√				√				√				√				√			



	review training materials (ANGEL toolbox)																				
	7.2. Conduct a meeting with USEA management team (dean and vice dean) of related faculties to provide more input on the training materials	√				√				√					√				√		
	7.3. Purchase/develop textbooks or reference books supporting green entrepreneurship and leadership	√				√				√					√				√		
	7.4. Prepare e-library related to green entrepreneurship and leadership	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
<b>8</b>	<b>Promoting green entrepreneurship and leadership among USEA students and local community</b>																				
	8.1. Promote green entrepreneurship and leadership among USEA students	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√





	8.2. Promote ANGEL-Community building	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	8.3. Develop USEA-ANGEL Community Facebook	√																			
III	Promoting Research and Development																				
9	Revising USEA research policy and planning in order to promote GREEN																				
	9.1. Conduct a research committee meeting to review USEA GREEN research policy	√								√									√		
	9.2. Get the approval of the reviewed research policy from the board of trustees	√								√									√		
10	Developing research infrastructure for green entrepreneurship and leadership																				
	Improve the ANGEL Innovate unit to have a good environment with enough physical and research materials in accordance with national and international standards	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√



	Upgrade research structure in accordance with mission, goals and research policy of the university	√				√				√				√				√			
	Upgrade research infrastructure and network building	√				√				√				√				√			
11	Developing and motivating researchers to conduct research on green entrepreneurship and leadership for sustainable development																				
	Promote research topics on green entrepreneurship and leadership with USEA students, academic staff and administrative staff	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Develop proposals for research grants to support GREEN activities		√		√		√		√		√		√		√		√		√		√
	Promote ANGEL entrepreneurship prize	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
12	Disseminating the revised research policy and planning to stakeholders																				
	Organize a meeting with USEA students to promote research			√				√				√				√				√	





	on green entrepreneurship and leadership																				
	Organize a meeting with USEA administrative staff and academic staff, especially thesis advisors, to promote research on green entrepreneurship and leadership			√				√				√				√				√	
	Post in the Facebook page and USEA website	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
IV	National and International Communication and Cooperation																				
13	Strengthening and expanding cooperation with partners related to green entrepreneurship and leadership																				
	Prepare annual & monthly action plans to strengthen and expand cooperation with partner institutions	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Search for GREEN-focused institutions for further collaboration		√		√		√		√		√		√		√		√		√		√





	Strengthen cooperation with partners of ANGEL	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
14	Organizing study tours of USEA administrative staff, academic staff and students to GREEN-based communities or institutions inside or outside the country																				
	Prepare annual study tours to GREEN-based communities or institutions	√				√				√					√				√		
	Organize study tours to GREEN-based communities or institutions			√				√				√				√				√	
	Conduct satisfaction survey of the study tour for further improvement			√				√				√				√				√	
15	Seeking for internship/scholarship opportunities to promote green entrepreneurship and leadership																				
	Prepare annual plan for internship/scholarship opportunities on green entrepreneurship and leadership both	√				√				√					√				√		



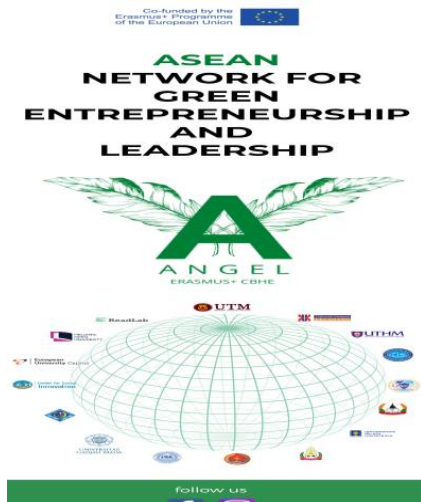


	national and international platform																				
	Liaise with oversea partner higher education institutions to apply for internship/scholarship at all levels on green entrepreneurship and leadership	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Develop a mechanism to monitor and evaluate the internship/scholarship	√				√				√				√				√			
	Conduct surveys on the behavior and satisfaction the intern or scholarship	√				√				√				√				√			
16	Promoting green entrepreneurship and leadership in both national and international platform																				
	Collaborate with higher education partners for joint research projects focus on GREEN	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Publish research reports or newsletters with partners in	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√



	accordance with national and international standards																				
	Disseminate reports to stakeholders widely and effectively.	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√







## INSTITUTE TECHNOLOGY OF CAMBODIA

### 7.0 CONTEXT

The Royal Government of Cambodia (RGC) introduced Rectangular Strategy – Phase 4 to respond to two historic missions of the nation, firstly, striving forward with firm belief to fully achieve sustainable development goals; and secondly, creating necessary pre-conditions and environment conducive for laying the strong foundation to become an upper middle-income country by 2030 and for in-depth transformation of Cambodia into a high-income country by 2050. There are 4 Rectangles for this strategy include (1) Human resource development, (2) Economic diversifications, (3) Promotion of private sector development and employment, and (4) Inclusive and sustainable development. The strategic goal on entrepreneurship was also mentioned in the Side 2 of Rectangular 3 of the Strategy which is Promoting small and medium enterprises (SMEs) and entrepreneurship because the SMEs play an important role in enhancing economic growth, job creation, reduction of poverty and migration. Along with the promotion of high economic growth, the RGC also focuses the attention on inclusive and sustainable development (Rectangle 4), particularly with regard to “Cambodia Sustainable Development Goals”. The RGC has developed several policies guide for promoting the sustainable development goals such as “National Policy on Mineral Resources 2018-2028”, National Strategic Plan on Green Growth 2013-2030”, “Cambodia Climate Change Strategic Plan 2014-2023”, “National Environment Strategy and Action Plan 2016-2023”, “National REDD+ Strategy”; and use social and environmental fund effectively to ensure economic development with low-carbon emission and resilience to climate change.

Institute of Technology of Cambodia (ITC) was established since 1964 and has received greater recognition for its successes and achievements in serving the country through human resources development, institutional capacity building and working intensely on the economic and infrastructure development of Cambodia. ITC has adopted the new Strategic Plan (2021-2030) based on the Rectangular Strategy (Phase IV) of the government together with the National Strategic Development Plan (2019-2023). ITC has the perspectives to become a leading institution with efficiency and excellence offering the academic, research, science, technology, innovation and engineering in technology transfer to the community. Two main objectives of ITC Strategic Plan (2021-2030) to be reached by 2030 are as follows: (1) To train 17200 students with high qualification towards the Cambodia Vision 2030 and (2) To implement 175 applied projects with technology transfer and start-up for harmonization and development towards the Cambodia Vision 2030.

In the organizational structure of ITC, beside the academic support with five main faculties, it also includes Research and Innovation Center (RIC) which has a mission to advance applied research and commercialize research outputs through technology transfer for serving national socio-economic growth. Even though some units or offices such as University-Industry Linkage (UIL), Techno Incubation Center (TIC) and Techno Innovation Challenge Cambodia (TICC) do not clear structure in the organizational structure but some activities





have been conducting to promote the entrepreneurship. Only some faculties include entrepreneurship into their curriculum, especially Faculty of Chemical and Food Engineering, however, there is no Entrepreneurship Lab yet. By project base funding, TICC launched the first incubation program (once a year) in 2017 and TIC was formally approved and established by ITC in 2018.





## 7.1 ANALYSIS

The following box is an assessment of ITC's effort is in terms of green entrepreneurship and pivotal leadership.

Box 7.1: SWOT-TOWS Analysis

<p><b>Internal</b> <b>External</b></p>	<p><b>Strengths</b></p> <ol style="list-style-type: none"> <li>1. Existence of appropriate natural resources and conditions</li> <li>2. Qualified students are selected through entrance exam</li> <li>3. Highly-skilled staff in field of engineering</li> <li>4. Already consist of Techno Innovation Challenge Cambodia (TICC)</li> </ol>	<p><b>Weaknesses</b></p> <ol style="list-style-type: none"> <li>1. Limited know-how of staffs and students on green entrepreneurship</li> <li>2. Limited knowledge of green technologies</li> </ol>
<p><b>Opportunities</b></p> <ol style="list-style-type: none"> <li>1. Increase in local income</li> <li>2. Increasing the inputs of national and international funds</li> <li>3. Raising awareness of food and environmental safety</li> </ol>	<p>SO</p> <ul style="list-style-type: none"> <li>• Innovate new product(s) with safer to consumer and environment</li> <li>• Initiate the broad skills of scholar staffs to develop the Green concept with their research field</li> <li>• Get fund for preparing Green Innovation Challenge</li> </ul>	<p>OW</p> <ul style="list-style-type: none"> <li>• Allocate resource and fund for capacity building on entrepreneurship and green entrepreneurship concept for staffs and lecturers</li> <li>• Motivate staff for green technology training</li> </ul>
<p><b>Threats</b></p> <ol style="list-style-type: none"> <li>1. Highly competition with imported products</li> <li>2. Activities could be finished when Project or fund end</li> </ol>	<p>TS</p> <ul style="list-style-type: none"> <li>• Educate and disseminate to community to differentiate the Green and conventional products</li> <li>• Promote and motivate staffs for proposal writing, especially for Green Innovation project.</li> </ul>	<p>TW</p> <ul style="list-style-type: none"> <li>• Try to adapt the green entrepreneurship concept into existing course in curriculum</li> </ul>

## 7.2 STRATEGY

The ITC-ANGEL Innovation Unit strategic plan are aligned with the long-term goals of ITC and national





strategies which set for 2030.

- Contribute to the green development of a national innovation ecosystem;
- Promote and encourage technology transfer in the green industries identified in the Cambodian government's Industrial Development Policy;
- Continue to develop ITC's capacities in green scientific research and innovation as one of the best universities in Southeast Asia.

In order to meet the long-term goals which are aligned with ITC and national strategies, there are some specific objectives of ITC-ANGLE Innovation Unit as following:

- Provide green entrepreneurship and leadership concept to ITC community
- Provide capacity building and accessing to material to the community
- Prepare innovation challenge for green entrepreneurship

### 7.3 Strategic Levers

So far, ITC has worked closely with industry through the office of University-Industry Linkage (UIL). Every year, UIL office prepare a meeting with related industries to define the skill gap and get feedback from industries as well as for research collaboration. All students graduated from ITC have at least two times internship in industry. Moreover, to motivate the entrepreneurship concept to the students, ITC has organized Techno Innovation Challenge Cambodia (TICC) which initiated by project-based program in 2016. The TICC was organized once a year from 2017, except 2020 due to Covid-19 pandemic. There are several funder and co-fund include AUF (Francophonie University Agency), FoodSTEM project (Erasmus+), Khmer enterprise, SMART, and other. The program has spent about 10 weeks after registration, with assist from coaching and starting the experiment design in week1. Each group of students need to prepare prototype and present their business model the judge committee. Beside the innovation challenge, Research and Innovation Center (RIC) of ITC has five research units include Energy Technology and Management (ETM), Food Technology and Nutrition (FTN), Materials Science and Structure (MSS), Mechantronics and Information Technology (MIT), and Water and Environment (WAE) which are rich of human capital for research and innovation.

### 7.4 MODEL of ANGEL

To ensure our objective will be accomplished, several tasks should be conducted as following:

#### **TASK 1: Conduct Training of Trainer**

As follow the guideline of ANGEL, the admin and academic staffs will be trained as the training of trainer (TOT) about the concept of green entrepreneurship and leadership. The training will be conducted within January or February, 2023.







### **TASK 2: Community Training**

Conduct training to community about green entrepreneurship and leadership using materials (5 modules) which prepared by EU partners. Students and community outside the institute will be invited for this training.

### **TASK 3: National Conference**

National conference will be organized to disseminate the concept of green entrepreneurship and leadership. The conference could be conducted individually or joined with other event in the campus.

### **TASK 4: Pitching**

Once a year, TICC organizes the innovation challenge focus only on entrepreneurship. Therefore, it is possible that ANGLE could be the co-funder and add the concept of green to the challenge.

## **7.5 ACCOMPANYING MEASURES**

For sustainability, the ANGEL Innovation Unit will be established inside the Techno Incubation Center (TIC). In case that ANGLE project is terminated, all facilities and materials will be continued using by TIC to expand the concept of green.

## **7.6 INSTITUTIONALIZATION**

After ANGEL Innovate Hub fully established, we can submit some documents to ITC management for approval of ANGLE Innovation Unit to be a part of organizational structure.

## **7.7 INFRASTRUCTURE AND EQUIPMENT**

The ANGEL Innovation Unit will be located in the Building I at ground floor (107-I). As follow the guideline of ANGLE, at least five work stations will be installed. The room was also partitioned into small room inside for student group discussion.





## 7.8 TARGET MARGINAL COMMUNITY

The intended audiences of the ANGEL project at ITC are the disadvantaged groups in society. These populations encounter various social, economic, or political barriers that hinder their ability to access opportunities and resources. Under the ANGEL project, the ITC research group will collaborate with the Cambodia Honey Association (CHA) to empower disadvantaged groups. This will particularly focus on women, individuals with low income, those with limited educational backgrounds, and residents from rural areas in the Sameakki Mean Chey District, Kampong Chhnang Province, Cambodia. The aim is to engage them in the honey bee and by-product business. ITC students will collaborate with community members to develop product interest from bees, following their training in Green Entrepreneurship and Leadership from ANGEL. They will be under the supervision of well-trained coaches and mentors. The ideas from each group will be evaluated under the innovation challenge, which includes not only the development of new products or businesses but also the improvement of existing product or business quality. This is under the evaluation guide from ANGEL.

## 7.9 THE ANGEL PROGRAM

The program will be conducted base on schedule align with action plan of ANGEL as following:

### I.1 Participants for Training of Trainers:

- Academic and admin staffs will be selected through internal dissemination (Telegram)
- The dissemination will be conducted through head of department or faculty and research and innovation center.

### I.2 Community training

- Select the faculty member(s) who has background in entrepreneurship to delivery the course of green entrepreneurship to students and community.
- If applicable, invite resources from outside to provide the entrepreneurship mindset and experience sharing.

### I.3 Incubation and start-up

- Call for participant for ANGEL innovation challenge
- Organize ANGEL innovation challenge
- Invite key person with rich of experiences from industrial partner for coaching and judgement

## 7.10 ACTION PLAN

	2023				2024			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4





Establishment of the ANGLE innovation unit								
Training of trainers								
Sensitization								
Community Training								
Accompaniment								
Coaching								
Mentoring								
Incubation								

### STRATEGIC PLANNING - RUPP

Co-funded by the Erasmus+ Programme of the European Union

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## Royal University of Phnom Penh, Cambodia





## 8.0 CONTEXT

Contributing to the National Policy and the Royal Government of Cambodia's (RGC) Visions 2030 and 2050, the Royal University of Phnom Penh (RUPP) has complied with the Policy related to Higher Education 2030 and the Educational Roadmap 2030, which aim to develop a good governance system and higher education mechanism to ensuring that graduated students are capable and have the opportunity to enroll in higher education programs with quality that meet the needs of socio-economic development and the labor market needs which aim to develop a comprehensive and equitable enrollment programs and ensure that capable students have the opportunity to pursue high quality education and graduate with high quality competence from a responsive curriculum. Students are required knowledge and skills to help fully contribute to the needs of national development and the needs of the social labor market. To fulfill the medium and long-term goals, RUPP has established the National Incubation Center of Cambodia (NICC) and University-Industry Cooperation Center (UICC) where the students can start up their business. The RUPP ANGEL HUB is an extraordinary hub where the undergraduates are encouraged and trained to be the focal trainers on Green Entrepreneurship in terms of Ecotourism which is related to conserving and preserving nature and the environment regarding 3Rs of sustainability. This center is managed by two staff and supported by four people who are involved in this project. and it functions collaboratively with certain departments of RUPP.

Based on the Cambodia Industrial Development Policy 2015-2025, which is a country's guide for helping maintain sustainable and inclusive high economic growth through economic diversification, strengthening competitiveness and promoting productivity. In this regard, the RGC's vision is to transform and modernize Cambodia's industrial structure from a labor intensive industry to a skill-driven industry by 2025, through connecting to regional and global value chain; integrating into regional production networks and developing interconnected production clusters along with efforts to strengthen competitiveness and enhance productivity of domestic industries; and moving toward developing a technology-driven and knowledge-based modern industry, and the potentials of the digital transformation, the "Cambodia Digital Economy and Society Policy Framework 2021-2035" which sets out a clear vision: "building a vibrant digital economy and society by laying the foundations for promoting digital adoption and transformation in all sectors of society – the state, citizens, and businesses – to promote new economic growth and improve social welfare based on the new normal". These policies are guides and new opportunities for leading the RUPP to focus on enabling infrastructures for digital transformation, which provides digital connectivity in the fields of digital and green business in the context of Industrial Revolution 4.0.

## 8.1 ANALYSIS

The following SWOT-TOWS indicates the current context of RUPP.





### Box 8.1: SWOT-TOWS Analysis

<p><b>Internal</b></p> <ul style="list-style-type: none"> <li>RUPP ANGEL HUB is a hub to produce the master trainers of Green Entrepreneurial leaders for the Cambodia Rural and Remote Community.</li> </ul> <p><b>External</b></p> <ul style="list-style-type: none"> <li>The RGC's vision and policies are the drivers to introduce Green Entrepreneurial Leaders to the Cambodian context.</li> <li>The abundant Natural Resources and environment in Cambodia give the community more benefits from the project activities.</li> </ul>	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li><b>about 30,000 youth population</b></li> <li><b>well-equipped science and engineering Laboratory</b></li> <li><b>rich of human capital</b></li> <li><b>strong institutional policy</b></li> <li><b>advanced technology</b></li> <li><b>event friendly campus</b></li> <li><b>multi-disciplinary subjects</b></li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li><b>low financial situation of students</b></li> <li><b>low technological creativity and innovation of students</b></li> <li><b>limited entrepreneurship mindset and motivation</b></li> <li><b>limited knowledge of Green Entrepreneurship to the rural and remote communities</b></li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>good branding to industry</li> <li>limited local products</li> <li>stable political situation</li> <li>favorable post-covid situation</li> <li>high level internet reach for youth</li> </ul>	<p><b>SO</b></p> <ul style="list-style-type: none"> <li>become a focal center to coordinate ecotourism of Rural and remote areas</li> <li>receive grants on GREEN or climate changes</li> <li>conduct research with local and international partners</li> <li>more supports from RGC and other institutions in terms of GREEN</li> <li>build GREEN among students, academic staff, administrative staff, and community</li> <li>build GREEN concepts in the new RUPP campus</li> </ul>	<p><b>OW</b></p> <ul style="list-style-type: none"> <li>establish RUPP ANGEL HUB at RUPP to promote GREEN entrepreneurship and leadership</li> <li>develop personal experience, material resource and budget in promoting green entrepreneurship and leadership at RUPP</li> <li>collaborate work with local authority and community in promoting GREEN entrepreneurship and leadership activities</li> </ul>
<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>high competition with imported products</li> <li>low trust on start-up business</li> <li>limited investment on start-up business</li> <li>lacking support on local start-up from government</li> </ul>	<p><b>TS</b></p> <ul style="list-style-type: none"> <li>more community and public in Cambodia aware of GREEN entrepreneurship and leadership</li> <li>community get more income from the creative ideas of GREEN for sustainable development</li> <li>expand more on GREEN</li> </ul>	<p><b>TW</b></p> <ul style="list-style-type: none"> <li>Case studies or best practices from local institutions</li> <li>Networking with partners in ANGEL</li> <li>to promote GREEN entrepreneurship and leadership</li> <li>Develop GREEN</li> </ul>





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entrepreneurship and leadership to many people in rural and remote areas

- provide a platform to local authority and/or government with awareness of GREEN in industries especially in ecotourism

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entrepreneurship and leadership model at RUPP

## 8.2 STRATEGY

The RUPP ANGEL HUB is to connect the university to industry and the community in the involvement of Ecotourism through internship, incubation, entrepreneurship, industry branding, research, and investment activities. To further sustain and strengthen the Ecotourism to support the green business, there are needs to (a) strengthen university-industry linkage to address practical demands of the workforces and research and development on environment, (b) develop and harmonize regulatory and policy frameworks to strengthen digital curricular, and (c) promote inclusive awareness of literacy and universal education on STEM, enhancing digital capacity for SMEs, and special support to women and girls living in rural areas.

### Long-Term Goals for ANGEL-RUPP:

RUPP-ANGEL is committed to:

- Conserving and preserving natural environment
- Enriching the forests and ecosystems of Cambodia
- Helping the communities keep their environment clean and green
- Generating more benefits for the communities.

### Objectives:

RUPP-ANGEL Center aims to

- Introduce a Green Entrepreneur competition to the students and public
- Build the network between university and communities through the university alumni
- Provide capacity building to the young entrepreneur





- Organize start-up forum any initiative and innovative projects

#### **Milestones:**

To align with the Royal Government of Cambodia's Digital Economy and Industrial Development Policy, RUPP ANGEL HUB will promote the 3 Rs of sustainability which include (1) Reduce the number of resources and harmful materials used in the production and main activity (2) Reuse all materials such as household wastes (3) Recycle the materials that can't be reused or reduced.

### **8.3 STRATEGIC LEVELS**

The RUPP provides degrees in both undergraduates and postgraduates in many areas ranging from science, social sciences and humanities, development studies, education, engineering, international studies and public policy, and foreign languages under five faculties, and two institutes. Regarding Green Entrepreneurship, the university has the departments of Tourism, Environment, Natural Resources Management and Development, Biodiversity Conservation which are the main and concrete foundations for promoting Green Entrepreneurial leaders; especially, in the thematic of Ecotourism.

RUPP ANGEL HUB will play the key role in branding awareness, training, seminar and workshop in order to disseminate the newly invented products with technology mainstreaming including e-commerce, e-business with green entrepreneurship application which benefits students and RUPP community as a whole.

### **8.4 MODEL of ANGEL**

To implement the ANGEL Project smoothly, we have to establish the ANGEL Hub Organization Structure and build the capacity of human resources to support the system. Then, we will introduce the concepts of green business to the communities in rural and remote areas of Cambodia about how to generate innovative ideas that are economically viable, environmentally supportive and socially inclusive. We will also learn how to design a green business curriculum and proposal that would incentivize investors and create sustainable impacts before the ANGEL Project is terminated. Furthermore, in the green space, we will learn to spot viable opportunities in renewable energy, household waste management, smart agriculture, and other ventures that engender sustainable development through the application of the reduce, reuse and recycle mechanism.







To make the ecotourism mindset in real, we will fulfill the following tasks:

### **TASK 1: Sustainability and Green Governance**

- Organizing the RUPP ANGEL structure with the supervising and recognizing from the university top committee.
- Providing Capacity building (train the trainers workshops) to create and train the core teams for ANGEL implementation with the RUPP internal stakeholders.
- Creating a digital communication platform to link the university with industry and communities
- Conducting needs analysis with the communities living rural and remote areas of Cambodia
- Developing the course contents related to digital business in collaboration with certain departments and faculties of RUPP.
- 

### **TASK 2: Innovation and Green Entrepreneurship**

- Introducing the Green Entrepreneurship courses to the target groups both undergraduates and communities
- Sending the trainers to the field work to cooperate with the communities
- Organizing competitive events and awards related to green business
- Developing a green business plan to achieve the long-term goals.
- Develop Monitoring and Evaluation tool to measure the outcomes and impacts of the Ecotourism and Green Entrepreneurship

### **TASK 3: Green Research and Business Development**

- Increasing key branding of RUPP green products and services through events and functions by utilizing youth in organizing, leading and monitoring the programme
- Building Human Resources of Green Entrepreneurial leaders who will train and spread the concepts of green business to the communities.
- Monitor and evaluate the progress of green business among the community
- Seeking more fund to enlarge the Ecotourism landscape.
- Conducting research on household waste management in the communities.
- Promoting Green Research and Development: This milestone aims to revise the existing research policy and planning as well as infrastructure in order to promote GREEN entrepreneurship and leadership. This is also put RUPP-ANGEL more efforts to motivate researchers to conduct research and disseminate the results on green entrepreneurship and leadership to stakeholders.

## **8.5 ACCOMPANYING MEASURES**

The establishment of RUPP ANGEL structure in place will ensure the flawless and sustainability of the Green Entrepreneurship and Leadership activities. The certain courses of green business shall be included in the university curriculum and the studying credits would be counted. In addition, before building trust amongst the





communities, RUPP-ANGEL HUB has to train the people in charge with the entrepreneurial mindset and demonstrate the green business within the campus in order to convenience the communities and to explore the possibility of the green products which the contribute to the preservation and conservation of the nature and environment.

## **8.6 INSTITUTIONALIZATION**

The RUPP ANGEL HUB will work collaboratively with National Incubation Center of Cambodia, University-Industry Cooperation Center and certain departments that involve in ecosystem and environmental management. The venue, persons in charge, and organizational structure shall be established and recognized by the certain levels of the university regulations.

## **8.7 INFRASTRUCTURE and EQUIPMENT**

RUPP provides a working space for RUPP ANGEL HUB on the 6<sup>th</sup> of STEM Building and the equipment are available to be used with preparing ANGEL guide specifications and delivery, reviewing ANGEL training tools and materials as well as preparing ANGEL training program. The infrastructure and equipment will be developed or renovated according to the needs of students, academic staff and community.

## **8.8 TARGET MARGINAL COMMUNITY**

Phnom Penh, which is the bustling capital city, is where the Royal University of Phnom Penh (RUPP) that has acted as a notable focal point of education graces the landscape. The student body cover a wide variety of religious, social class and provincial background levels. Among these ones, RUPP has their target group specially for the non-urban students. These are the students who come from the far-off towns and provinces mostly to seek education in this capital with the hope for a better life and better future.

The decision to concentrate on non-urban student is strategic and impactful. These students bring with them unique perspectives and challenges, often facing a stark contrast between their rural upbringing and the urban academic environment. By targeting this group, RUPP aims to equip them with green entrepreneurship and transformational leadership and social innovation challenges and foster a culture of green entrepreneurship and leadership that transcends geographical boundaries.

RUPP will engage non-urban students in programs that promote green concepts and practices. The program aims to provide students with the necessary knowledge and abilities to tackle environmental issues via innovative green business idea. Through group competitions with one mentor (a faculty member) and three to





four students, RUPP hopes to develop a network of future green leaders who will uphold moral principles and employ efficient management techniques to advance sustainability within the university and beyond.

## **8.9 THE ANGEL PROGRAM**

The RUPP ANGEL Management Team will develop a set of tasks according the importance of activities and target participants will be invited base on the schedules. Thus, the tentative action plan beneath will direct what should be done in order to achieve the viable results.

### **Developing capacity of administrative staff in the RUPP ANGEL Hub for effective operations**

- Study the existing ANGEL materials and follow up the updating information about ANGEL activities via ANGEL website or social media
- Conduct study visits to institutions providing support entrepreneurship, business incubation and university industry relations

### **Incorporating green entrepreneurship and leadership in related curricula at RUPP**

- Conduct meetings with related management team and academic staff to revise the existing curricula by incorporating green entrepreneurship and leadership in the target programs or subjects
- Develop or revised course syllabi, textbooks, reference books, and other related study and teaching materials
- Disseminate the new revised programs/course syllabi to stakeholders

### **Promoting green entrepreneurship and leadership among RUPP undergraduates and stakeholders**

- Promote green entrepreneurship and leadership among RUPP undergraduates
- Promote RUPP ANGEL Community through Capacity Building
- Develop RUPP ANGEL Community Facebook

### **Developing research infrastructure for green entrepreneurship and leadership**

- Improve the RUPP ANGEL HUB to have a good environment with enough physical and research materials in accordance with national and international standards
- Upgrade research publication in accordance with mission, goals and research policy of the university





### 8.10 ACTION PLAN

No.	Activity	2023				2024				2025				2026				2027			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
T1 Sustainability and Good Governance																					
1	Establish an organizational structure of RUPP ANGEL Core team																				
2	Nominate the Persons in charge																				
3	Develop ToR for RUPP ANGEL Core Team																				
4	Train the Core Team																				
5	Organize the three times of 2-day workshops to train the trainers (Academic and Admin)																				
6	Create Digit Platform Communication and Dissemination																				
7	Conduction Needs analysis on Ecotourism																				
8	Consultation workshops on green business courses																				





No.	Activity	2023				2024				2025				2026				2027			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
9	Develop the course contents related to Ecotourism and digital business.																				
T2	Innovation and Green Entrepreneurship																				
10	Introducing the Green Entrepreneurship courses to the internal stakeholders																				
11	Outreach the stakeholders																				
12	Green Business Competition and Awards																				
13	Develop Green Entrepreneurship plan																				
14	Develop measurement tools																				
T3	Green Research and Business Development																				
15	Encourage RUPP academic staff to integrate green entrepreneurship and leadership courses into their classes																				
16	Conduct research on household waste management in the communities																				





No.	Activity	2023				2024				2025				2026				2027			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
17	Seek more fund to enlarge the Ecotourism																				
18	Monitor and Evaluate the Green management progress																				
19	Promote and upgrade Green Entrepreneurship research publications																				





## STRATEGIC PLANNING -SKU



## Savannakhet University, Republic of Lao





## 9.0 CONTEXT

In 1990, Lao PDR transitioned from a controlled economy to a market economy with the introduction of the New Economic Mechanism (NEM). Since then, the economy has operated on market principles, resulting in an average annual growth rate of 7%, making it one of the fastest-growing economies.

By 2021, Lao PDR's GDP reached 18.83 billion USD, ranking 9th in ASEAN. The GDP was contributed by the primary sector (16%), industry (45%), and services (39%). Despite this, 70% of the population relies on agriculture, primarily household production, with rice cultivation, poultry, and cattle farming. Over 60% of Lao people live in rural areas, with 80% being subsistence farmers. Since the NEM's introduction, the five-year socio-economic development plans have consistently focused on enhancing agricultural production.

A decade ago, Savannakhet University (SKU) introduced entrepreneurship development. This course has been integrated into the study programs of all five universities in the Republic of Lao, with SKU embracing entrepreneurship in its academic offerings. While agricultural production remains a priority in every five-year plan, Savannakhet province has recently aimed to become the "Green Capital City" of its province. Despite a favourable environment, achieving "Green Entrepreneurship" remains a long-term goal. According to SKU's study on program revision and improvement, the entrepreneurship development course has significant room for enhancement, requiring more practical, skill-oriented content relevant to farmers' actual needs.

## 9.1 ANALYSIS

The following Box 9.1 describes SWOT-TOWS of SKU's current context.

Box 9.1: SWOT-TOWS Analysis

	Internal	Strengths	Weaknesses
External		1. Staff and faculties are young and energetic in teaching and research. 2. There are facilities for developing ANGEL	1. Teaching staff and academic administrators are still of limited experience in entrepreneurship. 2. Curriculum of







	<p>INNOVATE CENTER.</p> <p>3. There are existing course of entrepreneurship in many of undergraduate program being offer in SKU.</p>	<p>entrepreneurship is not yet elaborated, especially on green entrepreneurship.</p> <p>3. Teaching is still theoretical, less real practice</p> <p>4. University and industry partnership almost inexistent.</p>
<p>Opportunities</p> <p>1. The national policy is actually emphasized on developing the capacity of producers in agriculture sector.</p> <p>2. Organizations at regional and global level are very supportive for the development of capacity of entrepreneurship</p> <p>3. Ministry of education and sport is very supportive for introducing entrepreneurship programs in higher education.</p>	<p>SO</p> <p>Given favorable context (level and policy) and internal factors for creating development centers, SKU is ready to establish ANGEL INNOVATE CENTER.</p>	<p>OW</p> <p>Under ERASMUS+ support and funding organizations, SKU has planed as the university to improve the weakness.</p>
<p>Threats</p> <p>1. The majority of producers' mindset in agriculture sector is still envisaged as live on subsistent basis more preferable alternative.</p> <p>2. The procedure for establishing a business are still complicate for rural and disadvantageous farmers.</p> <p>3. Procedure of access to financial sources still bureaucratic for farmers.</p> <p>4. In the society, the concept of entrepreneurship is still new, especially for farmers from rural areas.</p>	<p>TS</p> <p>The government of Lao has a campaign called "Decentralization" aiming at strengthening people of grass tool level to be implementation unit but in practice, people from rural and remote area lack terribly qualified human resource. The local government decided to got SKU to participate causing SKU's strength to overcome the drawback.</p>	<p>TW</p> <ul style="list-style-type: none"> <li>• People at grass root level's mindset of stay subsistent, which is needed to be more oriented to innovation and income generation.</li> <li>• SKU's personal is mainly young generation with limited technical experience as well as background of working with farmers from rural area.</li> </ul>

## 9.2 STRATEGY

SKU has a strategic plan for its ANGEL INNOVATE CENTER with the following vision, mission, value, goals, objectives and milestones.

### Vision

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To be an innovative leader in green entrepreneurship and to create a new generation of green entrepreneurs who care about the environment and create added value in agriculture's production of farmers who live in rural and remote area for making income.

## Mission

Create human resources to become green entrepreneurships and create added value in agriculture's products of farmers in rural and remote area.

## Value

The staff in SKU is ambitious, determined to fulfill its responsibilities with a focus on success and excellence, to maintain the balance of the interests of all stakeholders, to work together with honesty, integrity and transparency, to promote the exchange of knowledge, experience, sharing and continuous development in new innovations with better differences, including caring for society, the community and the environment in order to create sustainability values.

## Long-term Goal

To develop subsistent farmers from rural and remote area to become green and sustainable entrepreneur.

## Objective

To strengthen to introduce and then strengthen green entrepreneurship's capacity at SKU.

## Milestones

Phase I (2020): preparation

- Project preparation and got funding
- Seek for co-funding from lao government

Phase II (2021-2023): Implementation

- GAP analysis
- Construct building for center and install facilities
- Develop green entrepreneurship training modules in Lao context
- Hold training for target group

Phase III (2024): Evaluation

- Survey interview stakeholders and beneficiates
- Draw lessons and plan for scale – up

In the context of subsistence agriculture, the local firm “THAMMAXAD WAY” exemplifies a nature-conscious approach to production, embodying the principles of Green Agriculture as defined by





ANGEL. This practice eschews chemical products entirely, relying instead on seeds selected and produced by the farmers themselves. The primary challenge lies in adding value to THAMMAXAD's products. Addressing this challenge requires innovative ideas and entrepreneurial spirit.

The SKU's ANGEL Innovate Center, based within the Faculty of Food Science, comprises four departments: (1) Food Processing, (2) Post-Harvest Technology, (3) Agribusiness and Marketing, and (4) Rural Development. The first two departments focus on training target groups to enhance the value of agricultural products. The third department equips students with innovative ideas for food product development, while the fourth promotes dissemination to farmers and rural areas. SKU is striving to develop itself into a "Modern and Model" university in the central region of the country.

### 9.3 Strategic Levers

SKU's education system is supported by several key factors: (1) 340 faculty and administrative personnel, (2) facilities, including buildings co-funded by the Lao Government and equipment provided by ERASMUS+ (ANGEL), (3) a curriculum focused on entrepreneurship development, and (4) a network with institutions and economic sectors both domestically and internationally.

The current personnel are predominantly young and relatively inexperienced, with most holding master's and bachelor's degrees (13 PhDs, 200 MScs, 127 BS). These young staff members are eager to learn and gain more experience. They possess a basic understanding of green and entrepreneurial concepts. With assistance from networks, particularly ANGEL, their knowledge and skills in green entrepreneurship can be further enhanced.

The building for the ANGEL INNOVATE CENTER is nearing completion, and soon, equipment for food processing and post-harvesting will be installed. These facilities will ensure the technical functionality

needed to help farmers add higher value to their products, such as rice, cash crops, small animals, cattle, and aquatic products.

The existing entrepreneurship curriculum is already integrated into the study programs offered by all faculties of applied sciences. However, it needs further development to better align with green principles. With the expertise from ANGEL's experience (gained from ASEAN partners and European program countries), specialized and customized training programs are being developed to be more practical and to enhance green and entrepreneurial characteristics.

Located in the country's central region, SKU boasts a large faculty of agriculture and environment, a faculty of business administration, and a faculty of food science. The diversity of geographic settings and rich cultural heritage positions SKU as a modern and model university in the central part of the country.

### 9.4 MODEL of ANGEL

SKU ANGEL Innovate Center Model:

Structure

- Institute





#### Focus

- Education – mentoring
- Synergies

#### Pedagogical approach

- T-type
- $\pi$ -type

#### Support Structure

- Coordinate + Education
- Spin-offs
- Start-ups
- Incubators

The ANGEL model at SKU will go through the following tasks:

#### TASK 1: Establishment of the ANGEL Innovate Unit

An ANGEL SKU's team has been created to put in the organization of the center, and SKU has prepared the building for install the equipment from Erasmus + ANGEL.

#### TASK 2: Training

It is a place for training to academic staff and students in innovation of green entrepreneurship.

#### TASK 4: Provide Services

Provide services in innovative idea of green entrepreneurship and technologies until create cooperation with other organizations inside and outside the university, both in public and private sector.

#### TASK 5: Coaching

Transfer technological knowledge and experience to students in Savannakhet University and farmers in rural and remote areas to develop agriculture's products for added value.

#### TASK6: Mentoring

Support teaching - learning, practicing and doing research for students and teachers in Savannakhet University.

#### TASK7: Research

Carry out research on various issues of being a green entrepreneurships and development of farmer's agriculture products.

#### TASK8: Find Funding

Find sources of funding to support various activities in the SKU'S ANGEL INNOVATE CENTER.

#### TASK9: Support Purpose of University

## 9.5 ACCOMPANYING MEASURES

- Develop studying programs better responds to the needs of the society.





- In cooperate entrepreneurship development as a course or minor courses in the existing programs being offered.
- Create undergraduate study program in entrepreneurship.
- Strengthen skill capacity to implement more practical skills-oriented programs.
- Help strengthen rural people capacity to produce more marketable products.
- Improve more accessible study programs (by the way of recruitment, scholarship offered, facilities)

## 9.6 INSTITUTIONALIZATION

SKU'S ANGEL INNOVATE CENTER is located in Savannakhet University, Nong Phue Campus which is responsible by the Faculty of Food Science which consists of four departments: (1) Food Processing, (2) Post Harvest Technology, (3) Agribusiness and Marketing and (4) Rural Development. SKU is in the process on selecting the administrative and academic staff to input in organization chart of the center.

## 9.7 INFRASTRUCTURE and EQUIPMENT

SKU has one building with 4 rooms with its equipment including 6 PCs, 5 laptops, 1 projector and 1 printer (the equipment is supported by Erasmus+ ANGEL Project).

## 9.8 TARGET MARGINAL COMMUNITY

*The target group community of SKU-ANGEL project will include both marginalized students and young women from one of the civil society organizations. SENGSAVANG is one of Lao civil society organization in Laos based in Savannakhet province. It is a non-partisan and non-religious organisation providing protection and assistance to victims and girls at risk of human trafficking and sexual exploitation in Laos. In addition to providing holistic care and recovery for those rescued, it offers education, job skills development and micro-business starter kits to support a sustainable community reintegration as an active family support. It has a project called, 'Social Enterprise Run by Vulnerable Young Women' in which include Sewing Cooperative, Farm and Technical Training Facility (for sewing, weaving, restaurant and beauty salon). These groups of people are struggle with how to seek financial resources for running green business and marketing their products.*

The group will be invited to participate the training together with the students in which SKU-ANGEL team plan to organize by during 21-22 December 2023. It is hopefully that the training will give some insight and concrete holistic concepts for running green business and leadership in their own community. Through mentorship, resources, and shared experiences, this initiative seeks to establish a





mutual winner, where students and young women can prosper financially while contributing to a greener, more eco-friendly future.

## 9.9 THE ANGEL PROGRAM

SKU ANGEL INNOVATE CENTER will select at least 25 administrative and 10 Academic staff from three faculties: Food Science, Business Administration and Agriculture and Environment to participate the ANGEL workshop. Regarding on incubation and start-up, SKU ANGEL INNOVATE CENTER will focus on students in the final year (year 4 students), farmers and all of those who are interested in and to become green entrepreneurs. Then, the center will support them the teaching, practicing, transferring them technological knowledge and experience as well as monitoring them to evaluate as 3-month, 6 month and yearly report.

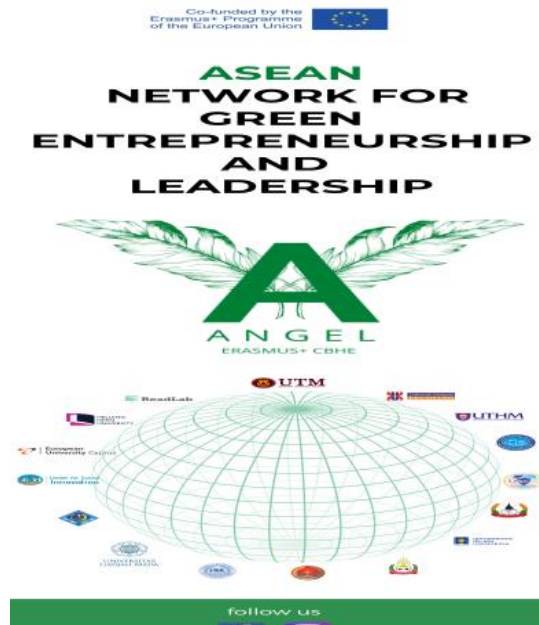
## 9.10 ACTION PLAN

Activities	2021		2022		2023			2023-2024			
	Jun	Jul	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Dec
Launch of Gap Analysis	■	■									
Establishment of the ANGEL Innovate Unit			■	■	■						
Training of trainers			■								
Training						■	■				
Accompaniment								■	■	■	■
Coaching								■	■	■	■
Mentoring								■	■	■	■
Incubation								■	■	■	■





## STRATEGIC PLANNING - CU



CHAMPASAK UNIVERSITY, REPUBLIC OF LAO





## 10.0 CONTEXT

Lao PDR has had a gross domestic product (GDP) growth rate between 4% and 14% since 1989. Currently, this economic growth is also driving development throughout the country. In order to achieve the country's development goals, the 9th National Socio-Economic Development Plan has clearly stated that Lao PDR will try to escape from the status of an underdeveloped country to become a middle-income country and achieve the goal of sustainable development in 2030. The plan also promotes employment, improves living conditions, and makes Lao citizens live well. In order to implement the 9th Socio-Economic Development Plan to achieve its goals, the government has identified 3 factors: 1) the Development of the young population (Human Capital), 2) Abundant natural resources, and 3) Setting the country's strategy as an important factor in the development of the country.

To make the goals of the 9th National Socio-Economic Development Plan (increasing employment and capital in human resources) and efforts to escape from the status of an underdeveloped country (Human Asset Index - Human Asset Index) appear to be a reality, the goals of the 9th Education and Sports Sector Development Plan (ESSDP) also stated that: Education and Sports Sector will create opportunities for all Lao citizens to have equal access to quality education so that they can contribute and benefit from economic and social development. In addition, the goal of the 9th development plan of the sub-sector of higher education is also to test the financial autonomy of higher education institutions by initiating in various universities of the state. However, the Lao PDR is in the middle of a difficult situation and there are many challenges such as economic and political instability in many countries, oil and food prices unstable, trade interests between major powers, an increasing number of natural disasters, and the spread of various diseases. As for the situation within Champasak province, it is still considered difficult and challenging in the midst of rapid changes, even though Champasak province is a province with economic-social progress and is the center of the socio-economics of the four southern provinces and the Lao PDR, due to the changing global economic situation, it is creating a huge impact on the socio-economic development of the province, specifically, the outbreak of the COVID-19 disease and the economic-political conflicts between the major powers which affect the economy of the Lao PDR.

Some examples of the obvious effects of the rapidly changing sector are the effects on the tourism sector, which began to appear from January - February 2020 when the number of tourists decreased, especially from China, which decreased by 16%, as the Chinese authorities began to restrict travel to control the outbreak of the disease. The effect continues to be widespread until now that many countries including the Lao PDR are still in a state of closure (Lockdown) causing the number of foreign tourists and exports to decrease. It also has an impact on the inflation rate of the Kip which increases causing the fluctuation of the price of consumer goods and consumption to increase rapidly. Therefore, in response to this situation, the government of Lao PDR has defined the "National 5-year socio-economic development plan IX (2021-2025)" as a strategic plan for the socio-economic development of the country. In addition, according to the socio-economic development plan of Champasak Province, it is known that the focus of the strategic plan is to strengthen the existing potentials and solve the problems that are the priority of the province, specifically the construction and improvement of various basic frameworks within the province to continuously improve, as well as to develop the capacity of human resources within the province to have the skills, abilities, and readiness to contribute to the socio-economic development of Champasak Province to grow and make the economy of the province grow more often in difficult and complicated situations.

The Faculty of Economics and Management was established together with Champasak University in the academic year 2002-2003 with the abbreviation "FEM" which is a faculty with the task of







creating academics in economics, business management, hospitality, and tourism for society. Initially, teaching-learning was opened in 2 departments of economics and management in the academic year 2004-2005 in order to meet the academics for hotel and tourism services. In addition, in the academic year 2012-2013, the field of tourism and hospitality management at the undergraduate level expanded to one more field. For responding to personnel for the tourism work that is continuously growing in the 4 southern provinces of Lao PDR.

So far, the Faculty of Economics and Management (FEM) has 3 departments, namely: Department of Economics, Department of Management, Tourism, and Services, and 4 departments: Academic Department, Administration-General Department, Academic Activities-Management Department, and Scientific Research and Technical Services Department. There are 3 mass organizations: youth Union, women Union, and Trade Union, various units that depend on the department, which opened teaching-learning in 7 fields, in which teaching-learning was organized in 1 master's course, namely: sustainable community development, and 6 bachelor's fields, namely: economics, administrative management, marketing, community development, tourism administration, and hotel administration. But there is no field of green entrepreneurship and leadership. In terms of academic and administrative work, it is based on the overall direction of the board of directors from Champasak University. For the personnel of the FEM, there are a total of 61 staff, 18 women, in which education level: 1 doctor, 1 woman, 25 masters, 5 women, and 26 bachelors, 12 women.

According to teaching, the FEM also plays an important role in providing administrative/management knowledge transfer services to various organizations within Champasak Province and neighboring provinces in the south of Lao PDR. FEM is determined to expand knowledge transfer services, increase skills and create administrative/management systems through training, leading the way in administrative/management work for various departments of the university and various organizations within the province and neighboring provinces (groups of students, academic institutions, provincial chambers of commerce and industry, business associations, business units, etc.) by using modern training courses and in accordance with the conditions (context) of the Lao PDR and Champasak Province, and neighboring provinces. Although the potential of the FEM is that there is enough personnel to carry out the work, it cannot avoid various difficulties, such as it lacks specialized staff in the fields of green entrepreneurship and leadership. Hence, it is not possible to create courses or training plans in various subjects to serve outside, in terms of location, tools, equipment, and software to serve online teaching-learning work is still limited and sometimes lacking.

Based on the direction of the education and sports sector development plan (the 9th education sector development plan, especially the plan of the sub-sector regarding higher education), FEM has the commitment and determination to move towards financial self-sufficiency and expand the transfer of knowledge, increase skills and create an administrative/management system through community-learning services - by providing training services, leadership, and exchange of experience (Knowledge Learning and Exchange). Therefore, FEM aims to strengthen the implementation of its own duties and roles as well as the creation of an ANGEL INNOVATE UNIT, creating standards of technical services for academics and various organizations within Champasak province and neighboring provinces in the southern.

## 10.1 ANALYSIS

The following box describes current stages of Champasak University (CU) in initiatives regarding green entrepreneurship and leadership.





<p>Internal</p> <p>External</p>	<p><b>Strengths</b></p> <p>S1. a wide network with both public and private sector organizations for technical exchange</p> <p>S2. aims to become a green university, especially in green agriculture</p> <p>S3. There is personnel who have graduated in business administration and economics. In addition, they have also gone through entrepreneurship training.</p> <p>S4. Staff received training in leadership, self-leadership, and organizational leadership from the SMCS program.</p>	<p><b>Weaknesses</b></p> <p>W1. The staff lack specific skills in the field of green entrepreneurship</p> <p>W2. The staff lacks operational tools and equipment, such as a green entrepreneurship laboratory</p> <p>W3. Most staff do not have a green entrepreneurship and leadership training course.</p>
<p><b>Opportunities</b></p> <p>O1. The government supports green businesses to protect the environment and society</p> <p>O2. CU has cooperation and technical exchange with ANGEL, OXFARM, EPPSEA, UNDP projects</p> <p>O3. The surrounding external business needs to train green entrepreneurs</p>	<p><b>SO</b></p> <p>- S1,O2</p> <p>- S2,O3</p> <p>- S3,O3</p> <p>- S4,O3</p>	<p><b>OW</b></p> <p>- O1,W3</p> <p>- O2,W2</p> <p>- O3, W3</p> <p>-O2,W1</p>
<p><b>Threats</b></p> <p>T1. Lack of budgetary support</p> <p>T2. External universities have high technical competition</p> <p>T3. Most entrepreneurs lack technical cooperation with CU</p>	<p><b>TS</b></p> <p>- T1,S1</p> <p>- T2, S3</p> <p>- T3, S1</p>	<p><b>TW</b></p> <p>- T1,W2</p> <p>- T2,W1</p> <p>- T3,W3</p>

## 10.2 STRATEGY

### Long-term goal





To develop a system of providing technical services in terms of green entrepreneurship and leadership to entrepreneurs within the four southern provinces and also to be able to upgrade the knowledge skills in providing technical services to teachers and students in CU, in order to contribute to the national economic-social development.

## Objectives

1. Strengthen green business entrepreneurship and leadership for entrepreneurs in the four southern provinces.
2. Training on green business and leadership for teachers and students within Champasak University and Savannakhet University.
3. Develop and introduce green entrepreneurship and leadership courses to various departments within the university or other organizations, and also surrounding colleges.
4. Organize a platform for pitching green business ideas within the university so that teacher groups, student groups, business groups, and other organizations outside the university can pitch good ideas for the development of their own communities.

## Milestones

Timeline	Milestone (Corresponding Activities)
Yr I	Component I: Strengthening green business entrepreneurship and leadership for entrepreneurs in the four southern provinces.
Q1	To build a green business curriculum and leadership together with entrepreneurs within 4 provinces southern.
Q2	Help other ANGEL partners to develop ANGEL Modules for Training (workshops, organizing workshops) on green business and leadership.
Q2	Identifying CU's students, staff and local businesses units within 4 Southern Provinces.
Yr II	Component II: Training on green business and leadership for academic staff, administrative staff, and students within Champasak University and Savannakhet University.
Q1, 2	Training on green business and leadership for 15 academic staff, 20 administrative staff at Champasak University.
Q 3	Training on green business and leadership for 40 students
Yr.III	Component III: To Develop and introduce green entrepreneurship and leadership curriculum to various departments within the university or other organizations, and also surrounding colleges.
Q1	Setting workshop and Seminar conference within title: green entrepreneurship and leadership for academic staff in 6 Faculties within Champasak University.
Q2	Setting workshop and Seminar conference within title: green entrepreneurship and leadership for academic staff in surrounding colleges (The Southern Technical College and The Southern Financial College)
	Component IV: Organize a platform for pitching green business ideas within the university so that teacher groups, student groups, business groups, and other organizations outside the university can pitch good ideas for the development of their own communities.
	Contestants write a green business idea proposal/Green Business Plan





Q3	Select the topic that passed the 1st round criteria
	Training on how to write Business canvas and Business plan for those selected in the 1st round criteria
Q4	The students going to pitch a green business plan for the final selection
	Let the students who enter the final round implement a green business plan.
	Monitor and evaluate the implementation of the green business plan of students who received funding

### 10.3 STRATEGIC LEVERS

CU promotes entrepreneurs to become green entrepreneurs with tools and technical knowledge such as personnel, culture, process and governance, and new innovations. The creation of green business courses and sustainability leadership, with experience in cooperation with projects that focus on the environment, so that the CU can raise the standards of university institutions and have a high chance to participate in a variety of other projects. In addition, our team can also create for businessmen, entrepreneurs, institutions, and students to be able to create businesses along the green path.

### 10.4 MODEL of ANGEL

#### TASK 1: Training of Trainer

- Training on green business and leadership for 10 academic staff, 25 administrative staff at Savannakhet University. (21-22/02/2023)
- Training on green business and leadership for 10 academic staff, 25 administrative staff at Champasak University. (14-15/03/2023)
- Training on green business and leadership for 10 academic staff, 25 administrative staff at Champasak University. (14-15/03/2023)

#### TASK 2: To Develop and introduce green entrepreneurship and leadership curriculum

- Setting workshop and Seminar conference within title: green entrepreneurship and leadership for academic staff in 6 Faculties within Champasak University.
- Setting workshop and Seminar conference within title: green entrepreneurship and leadership for academic staff in surrounding colleges (The Southern Technical College and The Southern Financial College)

#### TASK 3: Pitching Business Ideas

- Contestants write a green business idea proposal/Green Business Plan.
- Select the topic that passed the 1st round criteria.





- Training on how to write Business canvas and Business plan for those selected in the 1st round criteria.
- The students going to pitch a green business plan for the final selection.
- Let the students who enter the final round implement a green business plan.
- Monitor and evaluate the implementation of the green business plan of students who received funding.

#### TASK 4: Strengthening green business entrepreneurship and leadership for entrepreneurs in the four southern provinces.

- To build a green business curriculum and leadership together with entrepreneurs within 4 provinces in the southern.
- Training (workshops, organizing workshops) on green business and leadership with local businessmen within 4 Southern Provinces.
- Monitoring, evaluation, and advising business units within 4 Southern Provinces.

### 10.5 ACCOMPANYING MEASURES

Risk reduction measures of the ANGEL Innovate Unit include:

1. Create a green entrepreneurship and leadership course for short-term training for entrepreneurs in 4 Southern provinces.
2. Provide advice on doing green business to entrepreneurs.
3. Create a network with business unit issues to be strong.
4. There is an arrangement of seminars on economic topics that are outstanding in every year of the academic year.
5. A labor fair is held every year so that entrepreneurs can meet new graduates

### 10.6 INSTITUTIONALIZATION

For establishing an ANGEL INNOVATE UNIT, we have an Agreement on the approval by the President of Chamapasack University for the establishment and appointment the committees to work for ANGEL Innovation Unit at the Faculty of Economics and Management, Reference No: 1146/CU, dated on the 3rd November 2022. There are 11 persons working for this ANGEL Innovation Unit, namely:

1. Dr. Bounthom SISOU MANG, Acting Dean, Faculty of Economic and Management, Director
2. Mr. Oudtakone SINGTHONG, Deputy Head of Management Department, Deputy Director
3. Mr. Vannasinh SOUVANNASOUK, Lecturer, Faculty of Economic and Management, Committee
4. Mr. Thanousinh PHAXAISITHIDET, Lecturer, Faculty of Economics and Management, Committee
5. Mr. Mixay THONKHAM, Lecturer, Faculty of Economics and Management, Committee
6. 6 Students at the Faculty of Economics and Management, Assistants





### **10.7 INFRASTRUCTURE and EQUIPMENT**

1. Infrastructure: ANGEL Innovation Unit is installed at the Room No.201 at the Faculty of Economics and Management Building
2. Equipment: The equipment will be installed at the ANGEL Innovation Unit, Room No.201 at the Faculty of Economics and Management Building as on the list below.





Table 10.8: Equipment List

No.	Items	Brand	Quantity
1	Desktop (CPU)	DELL	5
2	Desktop Monitor	Monitor 23.8" DELL	5
3	Desktop Computer	ACCER	3
4	Laptop Computer	DELL	1
5	Laptop Computer	MacBook Pro-13"	4
6	Projector (LCD)	ACER	1
7	Wall Screen (LCD)	ACER	1
8	Printer	EPSON	1
9	Printer	BROTHER	1
10	Camera	Panasonic LUMIX	1
11	Video CAPTURE	ELGATO CAMLINK 4k	1

#### 10.8 TARGET MARGINAL COMMUNITY

The target community of CU-ANGEL project will provide opportunity to students, disadvantages, and young women entrepreneurs in the local community. Etu Green Garden is one of Green Entrepreneurs in the local community. Etu Green Garden is located in Paksong district, Champasak province and it was established in November 2017. The founder & ECO of Etu Green Garden Sole Ltd is a women who has good experiences in business on green filed. The objectives of ETU Green Garden are to produce and promote the farmers with their own green products to generate in local community. The main activities of Etu Green Garden are: 1) Promote farmers to grow pepper and vegetables, grading and packing fresh vegetable delivery to super markets and mini Marts in Pakse district Champasak province and some delivery to Vientiane Capital, 2) Promote agricultural products by buying from farmers at the community such as dried chili, ginger, galangal, *pandan* leaf powder, lemon grass and *pandan* leaf tea, black and white pepper corn. The products are already displayed at supermarkets and mini markets in Pakse district Champasak province and Vientiane Capital of Lao PDR.

ETU Green Garden is also 3) Provide service with a small café & restaurant, homestay, and meeting room. 4) Provide knowledge, skills and exchange experience with INGOs and Educational Institute for study visit learning and practicing vegetable grading, packaging and processing. ETU Green Garden also plan to grow winter vegetable targeting aims to export to Thai boarder provinces markets.





## 10.9 THE ANGEL PROGRAM

### The ANGEL Program



## 10.10 ACTION PLANS

The ANGEL Innovate Unit (CU)	2022	2023												2024
	12	1	2	3	4	5	6	7	8	9	10	11	12	1
<b>TASK 1: Training of Trainer</b>														
- Training on green business and leadership for 10 academic staff, 25 administrative staff at Savannakhet University														
- Training on green business and leadership for 10 academic staff, 25 administrative staff at Champasak University														
- Training on green business and leadership for 10 academic staff, and 25 administrative staff at Champasak University														
<b>TASK 2: To Develop and introduce green entrepreneurship and leadership curriculum</b>														
- Setting workshop and Seminar conference within title: green entrepreneurship and leadership for academic staff in 6 Faculties within Champasak University														
- Setting workshop and Seminar conference within title: green entrepreneurship and leadership for academic staff in surrounding colleges (The Southern Technical College and The Southern Financial College)														
<b>TASK 3: Pitching Business Ideas</b>														
- Contestants write a green business idea proposal/Green Business Plan.														
- Select the topic that passed the 1st round criteria.														
- Training on how to write Business canvas and Business plan for those selected in the 1st round criteria.														





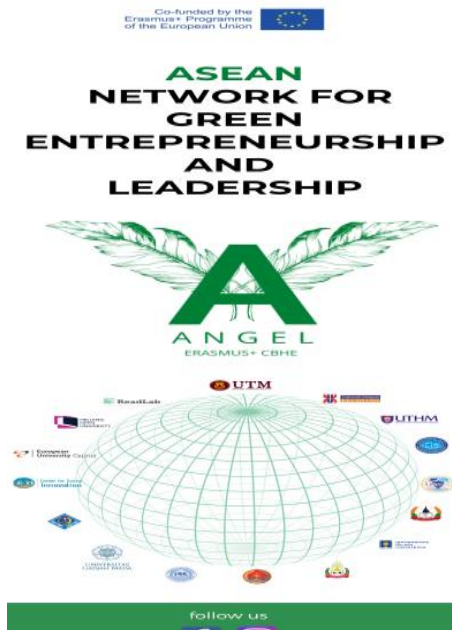


The ANGEL Innovate Unit (CU)	2022	2023												2024	
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	
- The students going to pitch a green business plan for the final selection.															
- Let the students who enter the final round implement a green business plan.															
- Monitor and evaluate the implementation of the green business plan of students who received funding.															
TASK 4: Strengthening green business entrepreneurship and leadership for entrepreneurs in the four southern provinces.															
- To build a green business curriculum and leadership together with entrepreneurs within 4 provinces in the southern.															
- Training (workshops, organizing workshops) on green business and leadership with local businessmen within 4 Southern Provinces.															
- Monitoring, evaluation, and advising business units within 4 Southern Provinces.															





## STRATEGIC PLANNING – CTU



## CAN THO UNIVERSITY, VIETNAM





## 11.0 CONTEXT

Since 2016, Vietnam's prime minister has issued the Decision No. 844/QĐ-TTg dated 18<sup>th</sup> May 2016 on approving a national project of "Supporting the national innovation startup ecosystem until 2025". A national portal<sup>1</sup> to support the national innovation startup ecosystem has been established to follow that strategy. Whereby, most of higher education institutions in Vietnam has changed their strategy for the development of innovation and entrepreneurship training. Can Tho University (CTU) has been also shifting according to those policies.

For a long time, CTU has been trying to improve students' skills on entrepreneurship. CTU has developed and integrated a 2-credit course named Innovation and Entrepreneurship (course code: KN002) into 109 undergraduate programs. Beside that CTU has established the "Center for Students Consultancy, Assistance and Start-up of Can Tho University"<sup>2</sup> for supporting hold students in the institution. Since 2019, CTU has also established the "Maker Innovation Space of Can Tho University" - so called MIS-CTU<sup>3</sup>. Four faculty members are appointed as part-timers to manage the MIS-CTU. It is an autonomous department under the supervision of the university. To operate effectively, the Management Board has decentralized maximum for students to operate. With this operating model, lecturers only play the role of supervision and direction, while students are the active people in all activities. This has maximized students' creative thinking: planning, implementing plans, evaluating results, drawing experiences and developing orientations. Some outstanding activities of MIS-CTU have been carried out such as training several modules in the curriculum such as EPICS, project-based learning, graduation project; implementing scientific research programs such as URI; start-up training for students in the MEP; STEM/STEAM training for both high school teachers and students. MIS is the place to receive many foreign delegations to visit. This is an opportunity for students to develop their English communication skills. Through these activities, students' skills have been further enhanced.

## 11.1 ANALYSIS

The following SWOT depicts the current context of CTU on its strengths, limitation and challenges regarding green entrepreneurship and leadership.

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<sup>1</sup> <https://khoinghiepuocgia.vn/>

<sup>2</sup> <https://scs.ctu.edu.vn/>

<sup>3</sup> <https://mis.ctu.edu.vn/>





Box 11.1: SWOT-TOWS Analysis

<p><b>Internal</b> CTU ANGEL HUB is a hub to produce the master trainers of Green Entrepreneurial leaders for the students both city and countryside.</p> <p><b>External</b> 1. Vietnam Government has priority policies for entrepreneurship 2. The abundant Natural Resources and environment in Vietnamese Mekong Delta give the community more benefits from the project activities.</p>	<p><b>Strengths</b> 1. Staffs with enthusiasm 2. Well-equipped laboratories 3. Strong institutional policy 4. Advanced technology 5. Multi-disciplinary subjects 6. Included entrepreneurship and creativity subject into all undergraduate courses 7. Integrated EPICS course into technology courses 8. Well-equipped and operated Maker Innovation Space</p>	<p><b>Weaknesses</b> 1. Lackage of the initial budget for entrepreneurship 2. Limited entrepreneurship mindset and motivation 3. Limited knowledge of Green Entrepreneurship for the students both city and countryside 4. Lack of startup ecosystem</p>
<p><b>Opportunities</b> 1. Connect and collaborate internal and international innovation centers 2. Rich of local raw materials 3. Lack of local products 4. Stable political situation 5. Good connection with local industries</p>	<p><b>SO</b> 1. Sharing and collaborate with local industries 2. conduct research with local and international partners 3. build GREEN among students, academic staff, administrative staff, and community 4. Coupling GREEN entrepreneurship and leadership into undergraduate or technology courses</p>	<p><b>OW</b> 1. Establish CTU ANGEL HUB at CTU to promote GREEN entrepreneurship and leadership 2. Develop personal experience, material resource and budget in promoting green entrepreneurship and leadership at CTU 3. Collaborate work with local authority and community in promoting GREEN entrepreneurship and leadership activities</p>
<p><b>Threats</b> 1. High competition with imported products 2. Low trust on start-up business</p>	<p><b>TS</b> 1. More community and public in the Vietnamese Mekong Delta aware of</p>	<p><b>TW</b> 1. Case studies or best practices from local institutions</p>





<p>3. Limited investment on start-up business 4. Lacking support on local start-up from government</p>	<p>GREEN entrepreneurship and leadership 2. Community get more income from the creative ideas of GREEN for sustainable development 3. Expand more on GREEN entrepreneurship and leadership to many people in rural and remote areas 4. Provide a platform to local authority and/or government with awareness of GREEN in industries especially in ecotourism</p>	<p>2. Networking with partners in ANGEL 3. Promote GREEN entrepreneurship and leadership 4. Develop GREEN entrepreneurship and leadership model at CTU</p>
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## 11.2 STRATEGY

### Goals:

Being recognized as a largest national innovation and entrepreneurship center in Mekong Delta, Vietnam by 2030.

### Objectives:

1: Develop a strong entrepreneurship network based on entrepreneur alumni and the Korea - Vietnam Incubator Park (KVIP)<sup>4</sup> by 2025.

2: Develop and offer bachelor program in innovation and entrepreneurship by 2026 with adequate resources (ie. Faculties, facilities, Labs).

3: Develop and offer PhD program in innovation and entrepreneurship by 2030.

### Activities:

- Human resources development: strengthening the human resources of CTU in innovation and entrepreneurship teaching and research skills based on young lecturers at the Faculty of Economics and other related faculties.
- Curriculum development: developing undergraduate and post-graduate programs in innovation and entrepreneurship.
- Facility development: improving the MIS-CTU by integrating the Angel Innovation Unit and equipping more modern facilities.
- Entrepreneurship community development: collaborating with entrepreneur alumni and KVIP to develop an CTU Angel community that entrepreneur can be easily to take part in research and training activities in the institution.
- Credit acceptance: students from all programs who study and work in the Angel Innovation Unit can be accepted credits for their equivalent time.

<sup>4</sup> <http://kvip.com.vn/>





### 11.3 STRATEGIC LEVERS

Maker Innovation Space is an innovation center established from 2019. Its operation is really effective for both undergraduate students, high school students, and lecturers. It serves the students and faculty of Can Tho University for activities related to creativity and innovation, scientific research, training, project based-learning courses, and industry connection. Training activities with STEM (Science Technology Engineering Mathematic) model for both elementary and high school students in Mekong Delta are implemented. Advising and implementing creativity & innovation activities in relevant engineering fields with industry partners are integrated. All activities continue to develop and improve it become CTU Angel Hub.

From 2020, EPICS (Engineering Project for Community Service) course was integrated into many Engineering programs. In this course, students must interview community organizations to find needs and then apply innovative methods to design products or solutions to solve community problems. After that, students can take an MEP (from Maker to Entrepreneur) course to develop a fundraising presentation from the ideas made in the EPICS course. Students taking these two courses will use the CTU Angel Hub to grow their startups.

### 11.4 MODEL of ANGEL

#### TASK 1: Building a strong CTU ANGEL community by 2025

The CTU Angel Community can be the institution on research and training in innovation and entrepreneurship. Entrepreneurs can share experience and support students from their ideas to final products for starting up.

#### TASK 2: Innovation and entrepreneurship curriculum development

Developing and offering training programs can be considered as an Angel project sustainability. Hi-tech resources in innovation and entrepreneurship always need to develop the region and to meet the national strategy.

#### TASK 3: Short training on innovation and entrepreneurship for the region

Based on the background of CTU-MIS where CTU has offered several courses in STEM and STEAM for Mekong Delta, CTU will offer more short training courses on innovation and green entrepreneurship. That is a best way to push-pull the society.

### 11.5 ACCOMPANYING MEASURES





CTU ANGEL Hub is a great incubation place for whoever to start-up. It has good and appropriate facilities for start-up activities. In addition, many specialists are invited to become mentors for successful start-up. Peculiar policies could be established to help CTU Angel Hub to sustainably develop.

## **11.6 INSTITUTIONALIZATION**

So far, the manager of CTU Angel partner is vice chairman of Can Tho University. Therefore, it is a great opportunity to help further effective operation of this unit. In addition, CTU Angel Hub will be utilized for whoever would like to start-up.

## **11.7 INFRASTRUCTURE and EQUIPMENT**

CTU plans to invest to improve the infrastructure and equipment of the MIS-CTU becoming a CTU Angel Hub with integrated an Angel Innovation Unit that can be useful not only for CTU students but also helpful for the region. The facilities must meet the requirement for research and training activities in innovation and entrepreneurship.

## **11.8 RESOURCES AVAILABLE**

CTU Angel Hub inherits the space and basic facilities of Maker Innovation Space of Can Tho University (MIS-CTU). Additionally, human resources of young lecturers of the economic school and related departments will be invited to participate training activities at CTU Angel Hub. For industry, MIS-CTU has a good connection with KVIP. Therefore, it helps to develop an CTU Angel community that entrepreneur to easily take part in research and training activities in the institution.

## **11.9 TARGET MARGINAL COMMUNITY**

CTU would like to introduce the Angel project and CTU Angel Innovate Hub to selected groups of students and local industries as well. The key objective is to let them know about the CTU Angel Innovate Hub established through the ANGEL project and with the funding support from the EU. The project undoubtedly help Can Tho University and its neighboring local industries to increase awareness about green entrepreneurship and leadership. Several activities with both groups will be organized for 200 selected students and three enterprises.

Additionally, the groups will be invited to join the ANGEL competition in which the focus will be on innovation and digitalized solutions to boost the green production sector. Participants will present their





innovative solutions with their certain products in front of a committee of five experts. This committee will evaluate their innovative solutions and green products as well.

To develop a national multiplier-effect, CTU ANGEL will also collaborate with local government agencies in Hau Giang province, Vietnam. In spreading messages of green and sustainable entrepreneurship to a larger audience, the CTU Angel Innovate Hub will be used to provide training to communities with the support of local governments. CTU will also leverage on various platforms such as national conferences and industry workshops organized by local government of Can Tho City, Vietnam. This conference is organized by the Department of Industry and Trade of Can Tho City. At this conference, CTU team will integrate and introduce CTU Angel Innovate Hub advertise the Angel project and give a message about green and sustainable products interesting in the present and future as well. These activities not only foster a green entrepreneurial mindset but also share sustainable production concepts. Participants will be equipped with useful tools, actual experiences, and necessary skills to solve reality problems related to green and sustainable productions. These help to bring positive signals and large impacts to the community.

#### **11.10 THE ANGEL PROGRAM**

Step 1: Finalizing the training program

Step 2: Getting approval of the College's Academic Committees

Step 3: Announcing via email, social networks and website to all students and faculties on the Angel program with detailed agenda, minimum selection criteria and a link for registration.

Step 4: Participants selection by a team

Step 5: Finalizing the training schedule with detailed information on time, venue, materials

Step 6: Training

Step 7: Evaluating

Step 8: Credit acceptance (if any)





## 11.11 ACTION PLAN

No.	Activity	2023				2024				2025				2026				2027			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>T1</b>																					
1	Establish CTU Angel Hub																				
2	Nominate the Person in charge																				
3	Train the core team for CTU Angel Hub																				
4	Train the staffs and administrative (three times of workshops to train the trainers)																				
5	Human resources development – strengthening the human resources of CTU																				
6	Curriculum development – developing undergraduate and post-graduate programs in innovation and entrepreneurship																				
7	Facility development – improving the MIS-CTU by integrating the Angel Innovation Unit																				
8	Entrepreneurship community development – collaborating with entrepreneur alumni and KVIP to develop an CTU Angel community																				
<b>T2</b>																					
9	Introducing the Green Entrepreneurship course to the internal stakeholders																				
10	Outreach the stakeholders																				
11	Develop Green Entrepreneurship plan																				

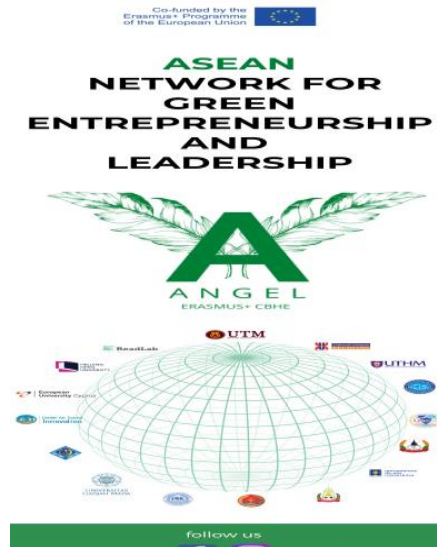




No.	Activity	2023				2024				2025				2026				2027			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
12	Develop measure tools																				
T3																					
13	Encourage CTU academic staff to integrate green entrepreneurship and leadership course in their classes																				
14	Monitor and evaluate the green management progress																				
15	Promote and upgrade Green Entrepreneurship research publication																				



## STRATEGIC PLANNING HUMG



## HANOI UNIVERSITY OF MINING AND GEOLOGY





## 12.0 CONTEXT

In Vietnam, the start-ups based on innovation for college students are new to most of the higher educational institutions. Although promoted by the Vietnamese Government, the supporting for start-ups is still limited by the commitment by the government to create a favorable condition for innovative business developments and a scheme of a “National Program to support innovative start-up ecosystem in Vietnam by the year 2025” which is visibly presented by several innovation contests organized by Vietnam Youth Union and Vietnam Student Association, some foreign franchised TV shows to promote the start-up businesses. The aims and objectives of these scheme and campaigns are apparently more on public awareness raising on entrepreneurships, creativeness and innovation for young regeneration rather than the essential support for young people with the innovative ideas to start their own businesses.

At the institutional level, there are only a few Vietnamese higher education in Hanoi and Hochiminh City that have their own specific activities on promoting and developing the entrepreneurships for students and youths such as establishing the Start-Up spaces, organising start-up contests, delivering training courses for entrepreneurship skills, etc. and Hanoi University of Mining and Geology (HUMG) is not in this very short list.

Although the development of entrepreneurships for HUMG’s is mentioned and brought to debate among faculty members and leader boards, the entrepreneurship development and promotion of start-up within the university’s students are limited in the participation for the “start-up idea” contest organised by above mentioned associations, deployment of some courses for entrepreneurship skills developed by British Council and inviting of some small business entrepreneurs to have talks with the students. The start-up training courses are also integrated into training programs and Entrepreneurship start-up is a demanding course for the students of the Faculty of Economics and Business Administration in Industrial Management and E-Commerce training programs. Start-up contests are organized annually, providing opportunities for students in engineering programs to develop their mindset and competence of developing the business ideas and start their entrepreneurship up. However, the green factor is not emphasized in the abovementioned programs and contests. HUMG does NOT have such specific and urgently needed things like start-up incubation centers, innovation space, wide range specific courses for entrepreneurial leadership. That’s why the implementation of ANGEL project to generate an ANGEL innovative unit is essential to our institution.

## 12.1 ANALYSIS





The following Box 12.1 describes HUMG's strengths and weaknesses and effort in terms of green, entrepreneurship and pivotal leadership toward green. Based on the SWOT matrix, we proceed further in identifying strategies in the form of the TOWS matrix.

Box 12.1: SWOT-TOWs Matrix on Green, Entrepreneurship and Leadership

Internal External	Strengths	Weaknesses
	<ol style="list-style-type: none"> <li>1. Awareness among university's faculty members for entrepreneurship leadership</li> <li>2. HUMG's is Engineering university with wide range of academic program</li> <li>3. University leadership supports for entrepreneurship and leadership development</li> <li>4. Strong links between university and industrial partners through alumni network</li> </ol>	<ol style="list-style-type: none"> <li>1. Little experience on start-up, incubation, entrepreneurship training</li> <li>2. Limited funds from the university for innovation promotion activities</li> <li>3. Quality of students and disadvantages for students from rural and mountainous area</li> <li>4. Shortage of space for innovation</li> <li>5. There is little/no possibility to incorporate entrepreneurship activities in regular curricular activities</li> <li>6. Little multidisciplinary project between students in different department and faculty within the university</li> <li>7. Foreign language is a barrier</li> </ol>



Opportunities	SO	OW
<ol style="list-style-type: none"> <li>1. National program to promote start-up and entrepreneurship</li> <li>2. International cooperation is promoted by Vietnamese government</li> <li>3. "Green" and sustainable development is a priority of the country</li> </ol>	<ol style="list-style-type: none"> <li>1. Favorable conditions for HUMG to set up an innovation unit</li> <li>2. International experience is used for establishment of HUMG's innovative unit</li> <li>3. Participation of industry improvement of university the development</li> </ol>	<ol style="list-style-type: none"> <li>1. Development of entrepreneurship and leadership knowledge for the university's faculty members</li> <li>2. To establish a fund/funding mechanism for university start-up based on innovation</li> <li>3. To incorporate the some of entrepreneurship training into regular program</li> <li>4. To bring the green concepts and ethnic to the faculty members and students</li> <li>5. To promote the interdisciplinary projects for students</li> </ol>
Threats	TS	TW
<ol style="list-style-type: none"> <li>1. Investment on start-up is still unpopular in Vietnam</li> <li>2. Copyright and intellectual properties protection issues to hinder the start-up and innovation</li> <li>3. Low rate of success in start-up due to the lack of creativeness and innovation</li> <li>4. Green mindset is not popular in the business communities</li> </ol>	<ol style="list-style-type: none"> <li>1. Raising funds from industrial partners for start-up in business</li> <li>2. Develop a scheme for promoting green mindset and green ethnic in doing business for students</li> <li>3. To establish a regulation within the university and faculty member an students on copyright and intellectual property sharing</li> </ol>	<ol style="list-style-type: none"> <li>1. Selection and investment for very highly innovative start-up projects</li> <li>2. Focusing on the innovation, entrepreneurship and leadership for disadvantaged community</li> </ol>



## 12.2 STRATEGY

Long term and general objective of HUMG is to change the university to a higher education institution of innovation, entrepreneurship and leadership development with a green mindset of Vietnam.

The specific objectives of HUMG are:

- To establish an innovation unit within the university as a center for innovative incubation, entrepreneurship and leadership skill training management.
- To incorporate the education of entrepreneurship and leadership development into regular programs.
- To develop the green mindset and ethic for students through regular education and off class activities.
- To target the entrepreneurship and leadership development for disadvantaged students and communities.

Milestone:

Milestone 1: Establishment of HUMG's innovation unit

Milestone 2: Development of university strategy for innovation, leadership and entrepreneurship

Milestone 3: Establishment of organisational structure for management and coordination of the innovation, leadership and entrepreneurship development activities within the university

Milestone 4: Implementation of coordinated activities to incubate start-up and to promote the innovation, entrepreneurship and leadership.

## 12.3 STRATEGIC LEVER

The strategic goal of HUMG is becoming a research-oriented comprehensive technological university. Green entrepreneurship concept and mindset can be integrated into many courses and training programs of HUMG such as mining, geo-sciences, geotourism, environmental engineering, civil engineering, chemical engineering, electronical engineering, business administration and e-commerce.





The ANGEL Innovative Center will be an essential component of the university, providing infrastructure and working spaces, supporting the community (students, lecturers, entrepreneurs, etc.) to form the awareness and mindset of green leadership and entrepreneurship, exchange the experiences and knowledge, disseminate projects of green products or service and e-business.

As a technical university, HUMG has good opportunities to implement the innovation and green technology for green growth, circular economy and adaptation with extreme climate conditions, which are very supportive for HUMG to complete its social responsibilities.

## 12.4 MODEL of ANGEL

Figure 12.4 depicts how ANGEL will be managed and led at HUMG.

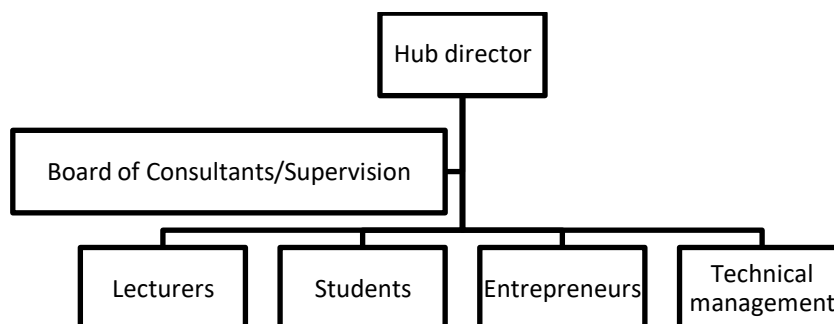


Figure 12.4: ANGEL Hub Structure

To manage the hub's operation, ANGEL Hub can be structured as above. ANGEL will be assigned with the following tasks:

### TASK 1: Understanding the structure and working procedure







- Organizing ANGEL structure with the supervising and recognizing from Board of Presidency.
- Organizing oriental activities and training courses to ANGEL community to implement the ANGEL project.
- Creating a digital communication platform to link the university with industry and communities
- Conducting needs analysis in the context of HUMG's stakeholders
- Developing courses based on the needs analysis and context of Vietnam for target groups.

### TASK 2: Developing Green projects

- Integrating theoretical and practical activities of trainers and the community
- Promoting events and green projects – supporting the new ANGELS
- Consulting green business plans matching with the longterm goals
- Monitoring projects with green criteria
  - Evaluating and following-up

### TASK 3: Sustainable development of green projects

- Maintaining the operation of the HUB with infrastructure, funding and training for the young generation
- Monitoring and evaluating the progress of green business among the community
- Motivating stakeholders to support and disseminate green entrepreneurship and leadership.

## **12.5 ACCOMPANYING MEASURES**

We develop the some risk identification and solutions as a measure to prepare for some expected challenges as depicted in Table 12.5



Table 12.5: Risk Identification And Solutions

No	Risk	Findings	Solutions
1	No integration into the university strategic activities	Threats to the sustainable development of the Hub	Recognized as part of the university's structure
2	Misunderstanding/ miscommunication	Lack of information exchange for the smooth operation	Manage the information flow
3	Human resources	Shortages of lecturers and students with interests in green entrepreneurship and leadership	Information promotion
4	Fundings	Shortages of financial support from the university for the maintenance of the HUB	Finding sponsors Set up other green projects

## 12.6 INSTITUTIONALIZATION

The operation of the entrepreneurship center be integrated into the organizational structure of the university and recognized of venue, staff and organizational structure. The HUMG Angel Hub will be lead with a director who is a (senior) lecturer of the Faculty of Business Administration, supported by other Faculties of the university and other Offices, such as International Office, Student Affairs Office, and Public Relations Department. The Hub is also under the leadership of one Vice – Rector, who is now in charge of Entrepreneurship and Partnership Relations.

## 12.7 INFRASTRUCTURE and EQUIPMENT

HUMG ANGEL HUB is intended to be a shared space for individuals and teams of students, academics, administration, industry, public services to access the equipment within the HUB and develop green entrepreneurship and leadership.

Infrastructure of HUMG ANGEL HUB is made up of core facilities, equipment that are used by relevant communities to support training, meetings, entrepreneurship development and promotion of start-up. All



the facilities and equipment are managed centrally through the HUMG ANGEL Innovation Unit. The equipment is managed independently of entrepreneurship projects and is supported by a technical team who strive to maintain these resources to the highest standards.

The equipment that makes up infrastructure of HUMG ANGEL HUB can be categorised into 2 main core facilities: facilities provided by HUMG and equipment provided by ANGEL project. Details are as listed in Table 12.6.

Table 12.6: Infrastructure and Equipment

No.	Items	Quantity	Resource	Estimated price
1	Room of 100m <sup>2</sup> , convenient location at C building, in the heart of HUMG's main campus in Hanoi.	1	HUMG	
2	Air conditioner 80,000 – 100,000 BTU	1	HUMG	EUR 3,200
3	Lighting equipment system	1	HUMG	EUR 1,800
4	Ventilation and cooling system	1	HUMG	EUR 500
5	Clusters of 6 people working desks and chairs	2	HUMG	EUR 380
6	File cabinets and bookshelves	8	HUMG	EUR 950
7	Water heaters	2	HUMG	EUR 195
8	Wall mounted projector screen 150"	1	HUMG	EUR 630
9	Workstations (CPU: Intel Core i7-6700)	6	ANGEL	EUR 9,900
10	LCD Projector (Portable)	2	ANGEL	EUR 760
11	Laptop (Apple MacBook Pro)	5	ANGEL	EUR 11,170
12	Printer: HP Color LaserJet	2	ANGEL	EUR 1,670

## 12.8 TARGET MARGINAL COMMUNITY

The ANGEL project's target groups at HUMG are university students especially those who come from low-income families. We aim to provide this group of students who use technical backgrounds to offer innovative ideas to change behaviors and contribute to green development. Training in the ANGEL project's activities helps to foster sustainable innovation, economic empowerment, and environmental responsibility. Annually, students from different faculties participate in start-up initiative contests at the





university level, and the best ones will be submitted to national competitions. As a result, the initiatives can be promoted into entrepreneur projects with the support of investors or authorities.

The Hanoi University of Mining and Geology takes many advantages from its education programs and research projects for a greener, more eco-friendly future. Students from all disciplines of mining, geosciences, electronics, IT, business administration, civil engineering, chemical engineering, environment engineering, etc., under the supervision of their professors, can do research about relevant topics to deal with challenges and demands from the community.

Besides serving the students of HUMG, ANGEL HUMG also aims to equip knowledge and skills to other students at nearby universities, such as Finance Academy, Kinh Bac University, etc. The virtual community, as well as courses online, on-site, and hybrid, provide entrepreneurship management knowledge and offer students opportunities to generate their knowledge on developing business ideas, running a business, managing the cash flow, etc., profitably, increasing their independence and contribution to society.

## **12.9 THE ANGEL PROGRAM**

- The selection of participants:

Participants are appointed with leaders of university and faculties for a training session in February 2023. Other ones will be selected from different faculties of the universities in the beginning of 2023, and later on, beginning of each year to prepare for the university Start-up contests, as they can bring the ideas of ANGEL and green entrepreneurship to their students.

- Registration

A link for registration will be send to all staff of HUMG. Attendees of the training are “first comes first serves”.

- Awareness program

News and information of the program are published in website, Facebook HUMG ANGEL Community.





- Training program

The first training program is scheduled in the middle to the end of February 2023, provide an overview of ANGEL project's objectives to leaders of the university and other staff. Training documents will be uploaded for the ANGEL community as ready-to-use materials. Feedback, comments, recommendation can be shared online for better understanding and improvement of the training materials and further training programs.

- Incubation and Start-up

Green ideas are incubated and consulted with coaches and mentors. The HUMG ANGEL Center is also can be a place for training and practicing of coaches and mentors.

- Monitoring

The director and Board of Consultants monitor the project and green business ideas' development following different stages depending to the financial term and regulations of the university.

**12.10 ACTION PLAN**

Activities	Months											
	1	2	3	4	5	6	7	8	9	10	11	12
Launch of Gap Analysis												
Establishment of the HUMG - ANGEL Center												
Training of trainers												
Registration of trainees												
Selection												
Training												





Developing coach and mentor program												
Incubation and Start-up												
Workshop and seminar												
Developing projects												
Monitoring												





## Conclusion

In principle, the ANGEL project aims to achieve the common objectives of addressing issues of green entrepreneurship and leadership and later develops entrepreneurial leaders who understand and champion green transition in ASEAN. In specific, the common objectives allows individual partner institutions to contextualize the action plans particularly because ASEAN nations constitute granular societies that differ across member-countries. This is especially relevant with regards to identifying critical marginal communities that deserves attention for this green transition effort. Hence, this Strategic Planning document adopts an agile approach in materializing the common objectives while achieving the milestones. Each institution of ASEAN within the ANGEL consortium can tweak their individual action plans in synchronization with the timeline and activities of the project. This proactive approach enabled the project to design curricula and training programs that equipped students, staff and specific marginal communities within the world of each ASEAN ANGEL's institutions with the skills, drive and knowledge needed to lead in a green economy. By anticipating shifts in the global and regional landscape, ANGEL and its network of stakeholders will work to ensure its project's initiatives remained relevant and impactful.

One of the key elements of the project was the establishment of partnerships with entrepreneurs, marginal communities, government agencies, and other academic institutions. These collaborations is guided by a foresight that focus on sustainable future needs and opportunities. Once the project concludes in 2024, it is hoped that ANGEL would sustain based on a legacy of championing continuous effort toward green transition across ASEAN. The insights gained during the project have laid a strong foundation for ongoing innovation and adaptation for a green economy that benefit the region with a better equipped position to respond to future challenges, such as climate change, resource scarcity, and evolving market dynamics. Looking ahead, the ANGEL project plans to expand beyond the project lifetime by incorporating more advanced methodologies and broader stakeholder engagement. This will involve continuous monitoring during the project duration. In conclusion, this document outlines a clear and actionable strategic plan for achieving our organizational goals. By leveraging our strengths, addressing key challenges, and capitalizing on emerging opportunities, we are well-positioned to nurture entrepreneurial leaders who could help to foster green growth and innovation.

