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ANGEL
ERASMUS+ CBHE

R1.4 Gap Analysis Report on Green Entrepreneurship and Leadership in ASEAN Higher Education

WP1 Customization and training

Project Information

Project Acronym:	ANGEL
Project full title:	ASEAN Network for Green Entrepreneurship and Leadership
Project No:	619421-EPP-1-2020-1-MY-EPPKA2-CBHE-JP
Funding Scheme:	Erasmus+ KA2 Cooperation for Innovation and the exchange of good practices – Capacity Building in the field of Higher Education
Coordinator:	UTM
Project website	www.angel-project.eu

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Position	Administrator
Date	December 2022
Status:	Completed
Dissemination Level:	Public

Reviewed by CSI and EUC

Contents

1. Introduction

Southeast Asia is one of the key regions which contributes to—and is impacted by—the heightened business, social, and environmental challenges. From human rights violation to deforestation, ASEAN countries are facing increasing pressures for businesses to comply with new regulatory standards as well as changes in consumer behaviour that demand conscious practices towards the environment, social activities and governance (ESG). Against this backdrop, the ASEAN Network for Green Entrepreneurship and Leadership (ANGEL) seeks to boost the region's adoption of the Agenda 2030 with a focus on Sustainable Development Goals (SDGs). ANGEL also strives to build capacity for a strong community that disseminates knowledge of environmental norms, social values based on inclusiveness, and rules of conduct based on good governance. 12 partner institutions from five ASEAN countries participated as ANGEL's consortium. Figure 1 presents the geographical location of each partner institution and its country of origin.
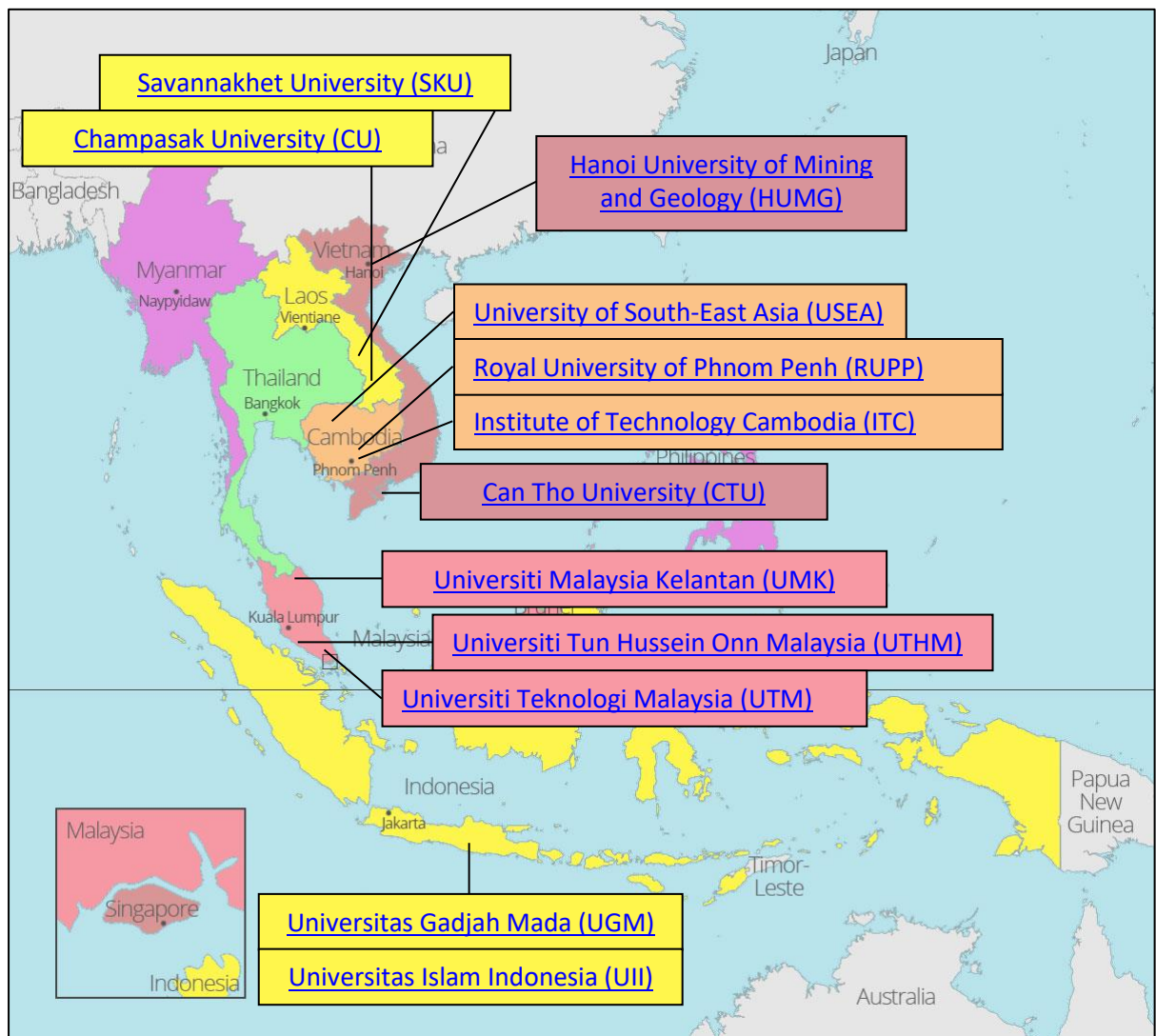

Figure 1. ASEAN partner countries and universities.

2. Methodology

The data collection methods for the gap analysis is based on two tools: survey and focus group discussion. The survey method measures the aggregate tendencies of partner institutions concerning a set of themes and criteria for green entrepreneurship and leadership. The score of each dimension was obtained by calculating the means of the items. Given the survey's aim to compare the variety of response patterns among different groups, box plots were deemed appropriate to visualize the findings (Benjamini, 1988). The focus group discussion, on the other hand, seeks to delve deeper into the challenges and complexity of each partner institution. Each of these methods are discussed below.

2.1. Survey

Three sets of survey are prepared for the three stakeholders: one for university and faculty members, one for students, and one for community.

The first stakeholder to be assessed is "University and Faculty" as the capacity builder in the ecosystem. In this survey, they are represented by the management at the university level, the faculty level, and faculty members involved at the study program level. With the objective to measure partner institutions' perceived level of engagement in green entrepreneurship and leadership, we devise three dimensions of assessment: (1) university-level support structure, (2) faculty-level focus, and (3) pedagogy. Each dimension is assessed based on a 7 Likert-like scale (1 = none, 7 = extremely intensive). The items for each dimension are outlined in Table 1 as follows.

Table 1. Dimensions and items for University and Faculty

Dimension	Item
Support structure	Presence of a dedicated centre/unit on green entrepreneurship and leadership *at the university level*
	Presence of a collaborative scheme with the government and public institutions *at the university level*
	Presence of a collaborative scheme with the industry *at the university level*
	Presence of exemplary initiatives on green entrepreneurship and leadership *at the university level*
	Efforts to measure the societal and environmental impacts
Focus	Presence of a dedicated centre/unit on green entrepreneurship and leadership *at the faculty level*
	Presence of a collaborative scheme that connects the government and public environment *at the faculty level*
	Presence of a collaborative scheme with the industry *at the faculty level*
	Presence of exemplary initiatives on green entrepreneurship and leadership *at the faculty level*
	Presence of a study programme on green entrepreneurship and leadership *at the faculty level*
Pedagogy	Presence of courses that utilize an inter- or multi-disciplinary approach
	Presence of case method as a teaching method
	Presence of problem-based learning as a teaching method

The second stakeholder to be assessed is "Students" as the direct beneficiary of the capacity-building ecosystem. We divide this part into three dimensions which are (1) Exposure, (2) Intention and Action, and (3) Obstacles, Support, and Challenges. These dimensions are chosen to identify the extent to which the students have been exposed, intended, and acted toward green entrepreneurship and leadership, along with the challenges they face. Each of these dimensions is specified further into several items as outlined in Table 2. Unless specified otherwise, most of the items are measured as categorical variables.

Table 2. Dimensions and items for Students

Dimension	Item
Exposure	Have you taken a course on green entrepreneurship and leadership from your university?
	Have you taken a course on green entrepreneurship and leadership outside your university?
	What part/topic about green entrepreneurship and leadership did you find the most useful?
Intention and Action	To what extent do you intend to start a venture that addresses societal and environmental issues in the future?
	To what extent do you intend to participate in a program which develops your capabilities in green entrepreneurship and leadership?
	If you have the opportunity to start a green business, would you consider cooperating with a university?
	What form of university support do you think will facilitate your efforts the most?
	To what extent do the following factors make (or have made) you start a venture/project that addresses societal and environmental issues? (Likert scale; 1 = Not at all, 7 = Extremely likely) • Financial return • Gaining network • Gaining power and influence • Acquisition of tangible asset • Compliance with a third-party expectation (e.g., friends, society) • Learning and mastery • Love and meaningfulness • Avoiding guilt • Sense of freedom
Obstacles, Support, and Challenges	What do you think is the biggest obstacle to your decision to start your own green business?
	If you decide to start your own green business, what kind of support would you need the most?
	If you decide to start your own green business, where would you look for support the most?

As a student, what specific challenges did you experience in relation to green entrepreneurship and leadership?

The third stakeholder in our gap analysis is the "Community" as a representation of an external beneficiary of the university. For this part, we identify two dimensions: (1) Engagement and Needs and (2) Expectation and Challenges. The questionnaire and items are presented in Table 3.

Table 3. Dimensions and question items for community

Dimension	Question item
Engagement and Needs	Based on your experience interacting with the university, to what extent is their level of communication to your community? (1 = no communication at all; 7 = extremely intensive)
	Based on your experience interacting with the university, to what extent is their level of support regarding green entrepreneurship and leadership (e.g., advisory, consultation, mentoring) to your community? (1 = nothing at all; 7 = extremely strong)
	Based on your interaction with the university, to what extent do you experience the benefits of their presence regarding green entrepreneurship and leadership? (1 = nothing at all; 7 = extremely strong)
	If you decide to develop your community towards green entrepreneurship and leadership, what kind of support would you need the most?
	If you decide to develop your community towards green entrepreneurship and leadership, where would you look for support?
Expectation and Challenges	To what extent are you satisfied with the role of the university to your community regarding green entrepreneurship and leadership? (1 = extremely unsatisfied; 7 = extremely satisfied)
	Compared to the present, to what degree do you think the university should engage with your community regarding green entrepreneurship and leadership? (1 = about the same as the present; 7 = a lot more than the present)

2.2. Focus Group Discussions (FGDs)

In conjunction with the distribution of the questionnaire, partner universities arranged FGD meetings with the three stakeholders: university lecturers and professors, students (undergraduate and post-graduate), and community (business practitioners, NGO leaders, etc.). Building on the questionnaire, the FGDs aim to explore the nuances and add more depth by exploring the 'what' and 'how' of a set of themes. Questions guide for University and Faculty Members, Students, and Community are provided respectively in Table 4, Table 5, and Table 6. Given the open-ended nature of qualitative research, and to incorporate the contextual differences among partners, these questions were indicative and partner universities were invited to adjust the questions to suit the dynamics of the FGDs.

Table 4. FGD questions guide for University and Faculty Members.

Theme	Question
Current state of support toward green entrepreneurship and leadership	How far has the university/faculty supported green entrepreneurship and leadership?
	How central is the notion of 'green' being part of the university's/faculty's mission?
	What current projects/programs (if any) have the university/faculty been engaged in concerning green entrepreneurship and leadership?
Curriculum and teaching staff	How strongly is the notion of 'green' being part of the curriculum? In what course(s) does it appear?
	How far has the university developed the teaching staff regarding green entrepreneurship and leadership?
	What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, etc.)
Challenges and opportunities	What challenges do the university/faculty face in strengthening the commitment to sustainability?
	What opportunities can the university/faculty seize to strengthen its commitment to sustainability?

Table 5. FGD questions guide for Students.

Theme	Question
Current state of support toward green entrepreneurship and leadership	How familiar are the students with the concept?
	How did the students know about the concept? What sources did they refer to?
	How far have the students received course materials related to green entrepreneurship and leadership?
Intention and action	How strongly did the students commit to green entrepreneurship and leadership?
	What actions have the students taken in the area of green entrepreneurship and leadership?
	What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, etc.)
Challenges and expectations	What challenges do the students face when they commit to sustainability?
	How do the students expect the university to support their commitment to sustainability?

Table 6. FGD questions guide for Community.

Theme	Question
Current state of support toward green entrepreneurship and leadership	How far has the community been in touch with the university regarding green entrepreneurship and leadership? In what forms (if any)?

Challenges and expectations	How central is the notion of 'green' being part of the community's mission and strategy?
	What barriers does the community face in strengthening its commitment to sustainability?
	What form of support do the communities expect from the university regarding sustainability?

3. Survey Results

3.1. University and Faculty

In summary, the total respondents from 12 ASEAN universities were 140 faculty members/lecturers, with an average age of 42 and an average tenure of 15.1 years. Gender-wise, the respondents comprised of 93 males, 46 females, and one preferred not to disclose their gender. The graphical presentation of respondents' age, tenure, and gender are shown respectively in Figure 2, Figure 3, and Figure 4 below.
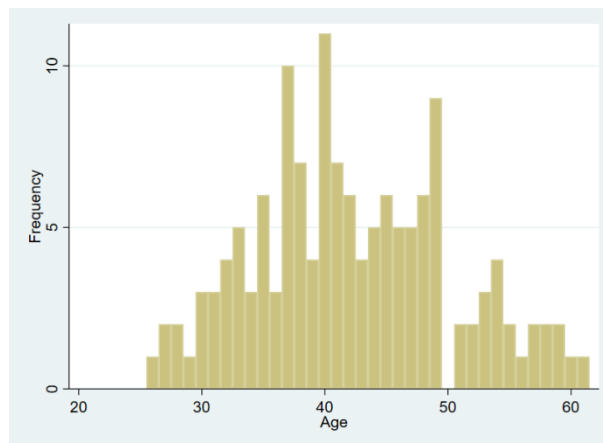
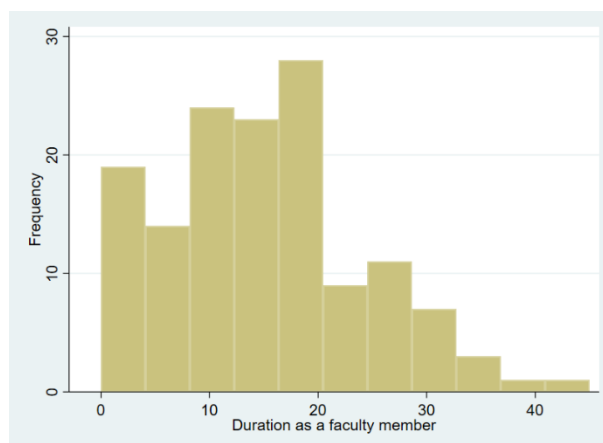

Figure 2. Distribution of respondents' age

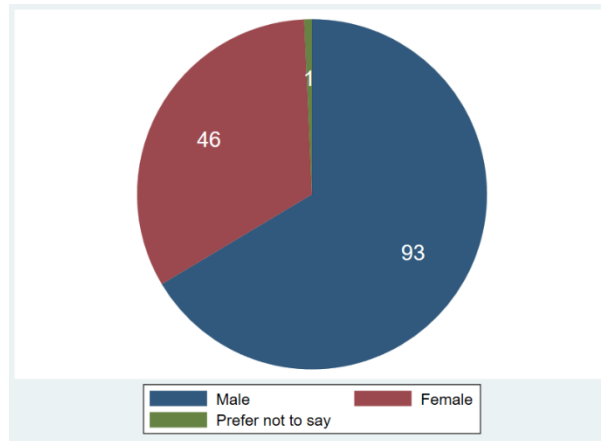*Figure 3. Distribution of respondents' tenure*

Figure 4. Distribution of respondents' gender

As an overview, Figure 5 depicts the box plot of the three dimensions. The result shows that there is a variety among partner institutions' level of engagement by each university and faculty. While a consistent pattern across all dimensions is not readily apparent, there is a general tendency that the Focus dimension scores lower than the Support Structure. The Pedagogy dimension, however, seems to score at a higher level than the other dimensions although, for some universities, the Pedagogy level is at an equal level with the other dimensions. Based on the result, we derive the following inferences:

- Partner institutions perceive that there exists a Support Structure towards green entrepreneurship and leadership at the university and faculty level.
- Most partner institutions perceive that the focus on green entrepreneurship and leadership is relatively lower than the Support Structure.
- Partner institutions have adopted a variety of pedagogical approaches which include case-based learning, problem-based learning, and project-based learning.
- There is ample room to enhance the intensity of focus towards green entrepreneurship and leadership across all institutions.
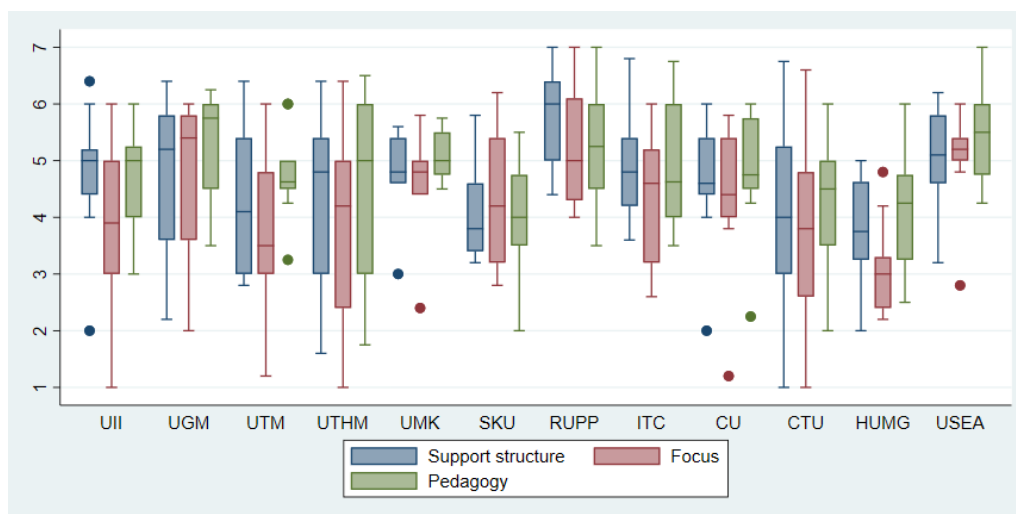

Figure 5. Perceived level of the support structure, focus, and pedagogy.

3.1.1. Support structure

The first dimension of the university/faculty is the support structure. In this dimension, we seek to resolve whether there is established support and structure which facilitates the institution's orientation towards green entrepreneurship and leadership. We construct the support structure dimension as a composite of the following question items:

1. To what extent is there a presence of a centre/unit that is dedicated to green entrepreneurship and leadership?
2. To what extent is there a presence of a collaborative scheme that connects the government and public environment on green entrepreneurship and leadership?
3. To what extent is there a presence of a collaborative scheme with the industry on green entrepreneurship and leadership?
4. To what extent is there a presence of exemplary initiatives (programs, projects, activities) that endorse green entrepreneurship and leadership?
5. To what extent have there been efforts to measure the societal and environmental impacts of your institution's activities?
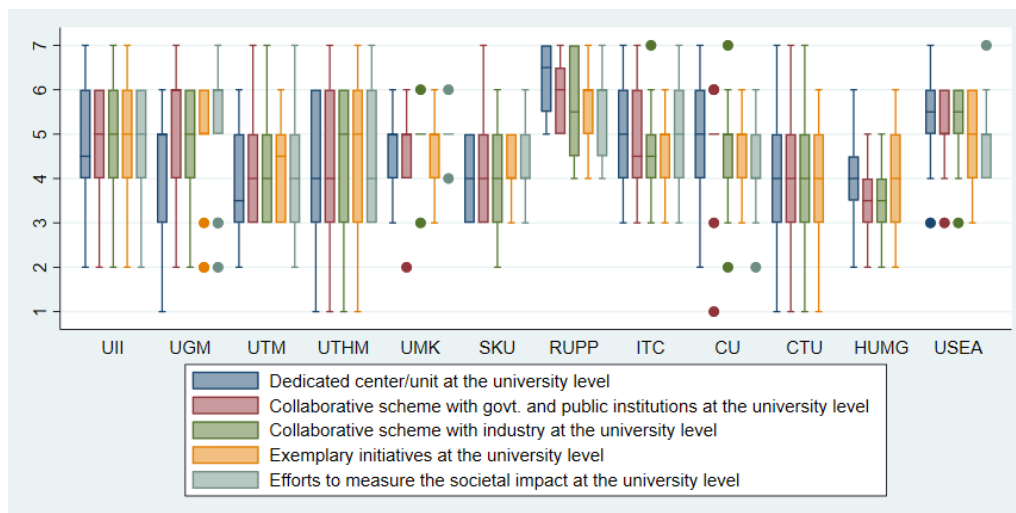
Figure 6. University-level support structure on green entrepreneurship and leadership.

From Figure 6, we found that most of the partner institutions have some extent of a pre-existing support structure for green entrepreneurship and leadership. Institutions with a high level of support (range 4 to 6) are UII, UGM, ITC, and USEA. Institutions with a medium level of support (range 3 to 5) are UTM, UTHM, UMK, SKU, CU, CTU, and HUMG. RUPP stands out from the rest by showing a stronger agreement among the respondents as having a very high level of support (range 5 to 7).

3.1.2. Focus

The second dimension is 'Focus' as a measure of the extent to which the faculty (i.e., the Faculty of Economics and Business or other related faculties) has established a concentration on green entrepreneurship and leadership. Most item questions in this dimension remain

similar to the university level but emphasize the faculty level instead of the university level. For this dimension, we added one additional item: the presence of a *study program* on green entrepreneurship and leadership in place for the university-level measurement of impact. As depicted in Figure 7, we found that the range of responses mainly converges on the low (range 2 to 4) to medium (range 3 to 5) level of engagement. Among all partner institutions, only UGM, RUPP, USEA have a predominantly high level of Focus (range 4 to 6).
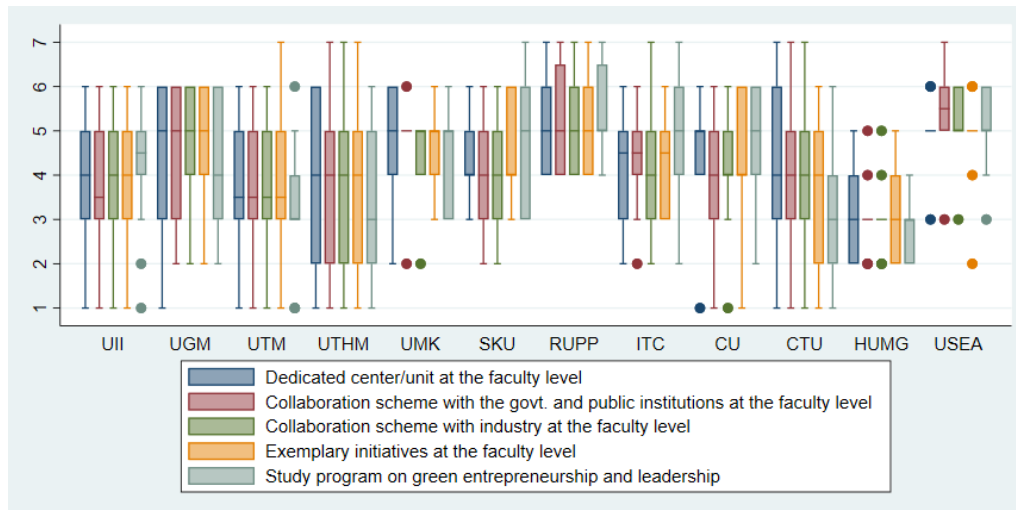
Figure 7. Faculty-level focus on green entrepreneurship and leadership.

3.1.3. Teaching and pedagogy

The third dimension is Teaching and Pedagogy, which identifies the extent to which partner institutions have adopted various teaching methods. In contrast to the previous dimensions, Teaching and Pedagogy are not exclusively related to green entrepreneurship and leadership. Institutions with a high level of Teaching and Pedagogy will be more likely to enthuse green entrepreneurship and leadership orientation towards the students. This dimension is comprised of the following question items:

- To what extent is there a presence of courses that utilize an inter- or multi-disciplinary approach?
- To what extent is the use of the case method as a teaching method?
- To what extent is the use of problem-based learning as a teaching method?
- To what extent is the use of project-based learning as a teaching method?

Figure 8. Faculty-level teaching and pedagogy.

The box plot in Figure 8 indicates that most partner institutions have a highly intensive (range 4 to 6) use of various teaching methods. We also found that some institutions have highly used the inter- and multi-disciplinary approach (range 4 to 6) while others, such as UII, UTM, UMK, CTU, and HUMG, are on a moderate level of intensity (range 3 to 5). This implies that all partner institutions have experience conducting a course in an inter- and multi-disciplinary environment and some familiarity with different tea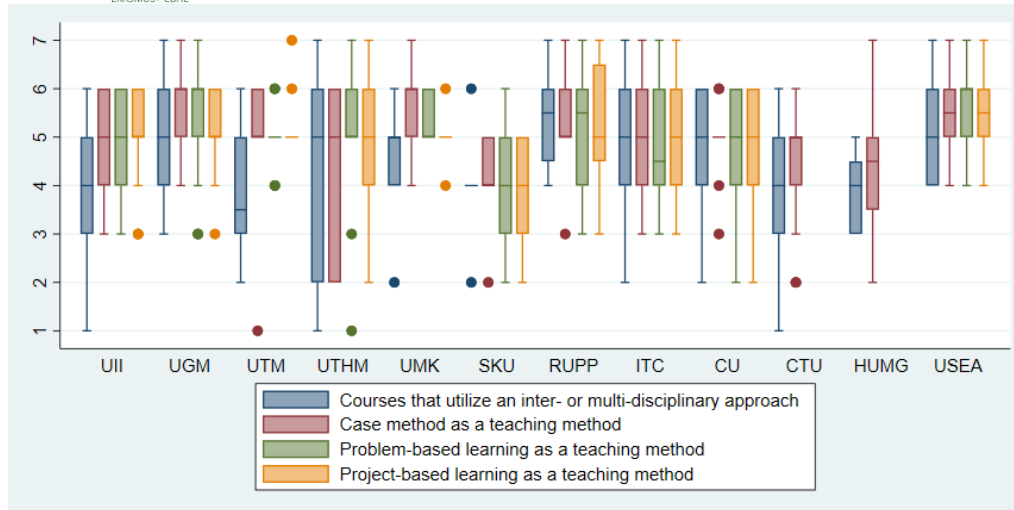ching methods. We see that these characteristics set a good foundation for enhancing the curriculum focus on green entrepreneurship and leadership.

3.1.4. Challenges

In addition to the Likert-scale survey, we also asked the respondents an open-ended question regarding the challenges faced at the university and faculty level regarding the development and capacity building on green entrepreneurship and leadership. A word cloud visualization for both levels is presented below. Note that we disregard the occurrences of the words "green entrepreneurship" and "leadership" to focus only on the content of the challenges.

Figure 9 shows the word cloud for the challenges at the university level. Among the most relevant challenges are (1) lack of awareness, (2) funding, (3) government policy, and (4) human resources. Correspondingly, Figure 10 presents the word cloud for the challenges at the faculty level. Among the most relevant challenges are (1) funding, (2) human resources, (3) lack of commitment, (4) (lack of) specific programs, (5) lack of expertise, and (6) (lack of) specific policy.

Figure 9. Challenges at the university level.

Figure 10. Challenges at the faculty level.

3.2. Students

In summary, we obtained a total number of 510 students as respondents to the survey, with an average age of 22 and an average length of study of 3 years. Of all respondents, 413 were enrolled in the bachelor's degree, 87 were enrolled in the master's degree, and the remaining ten were enrolled in the doctoral degree. Gender-wise, our respondents are 293 females, 216 males, and one who prefers not to disclose their gender. Some of the descriptive statistics are illustrated in Figure 11, Figure 12, and Figure 13. A detailed description of each dimension is provided in the following sections.
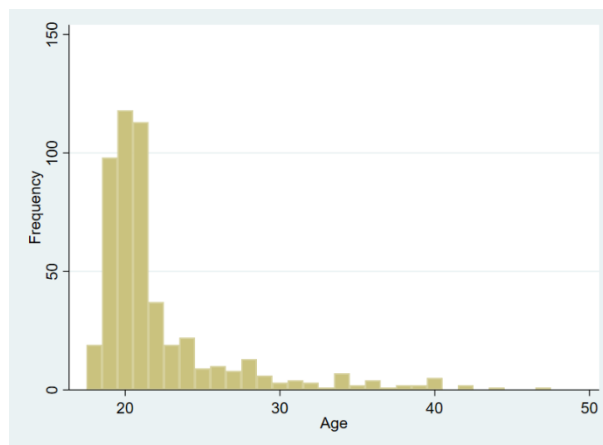

Figure 11. Distribution of students' age
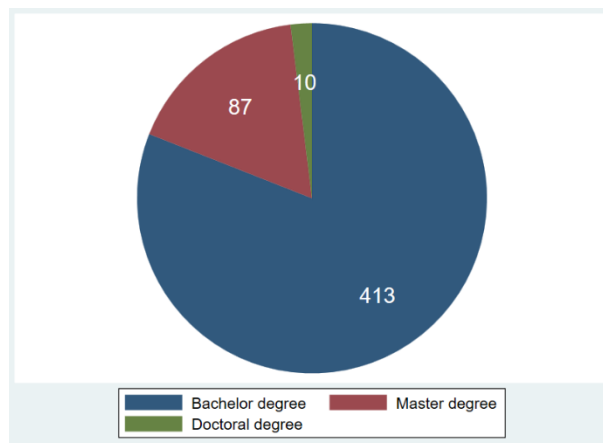
Figure 12. Distribution of students' program enrolment
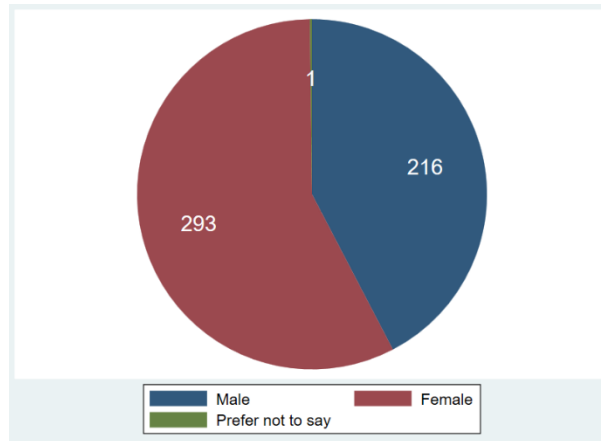
Figure 13. Distribution of students' gender

Our findings reveal the following inferences:

- A large majority of students from partner institutions have not been adequately exposed to the notion of green entrepreneurship and leadership. At this stage, there is an opportunity for the program to build awareness.
- Most students have a high level of intention to start a new venture that addresses societal and environmental issues, and they are also willing to participate in a program to develop capabilities in this area.
- Despite the high intention level, students face a barrier to entering the green ecosystem primarily due to the lack of knowledge.

3.2.1. Exposure

The Exposure dimension captures the extent to which the students have been exposed to the topic or content of green entrepreneurship and leadership. From the aggregate level, our data suggest that most students still have limited exposure to green entrepreneurship and leadership. This is shown in Table 7 with 343 students not having an experience in taking a course on entrepreneurship and 101 students have taken an entrepreneurship course but without content on green entrepreneurship.

Table 7. Taking a course on green entrepreneurship and leadership by the focal university: Aggregate

Taking a course on green entrepreneurship and leadership provided by your univ.	Freq.	Percent	Cum.
No	343	67.25	67.25
Have taken but no emphasis on green	101	19.80	87.06
Have taken where green is a part	35	6.86	93.92
Have taken specifically on green	31	6.08	100.00
Total	510	100.00	

Table 8 presents a detailed distribution of responses based on university. The table shows that HUMG has the highest proportion of students who have not taken an entrepreneurship

course. In comparison, UII, UGM, UTM, UTHM, UMK, and ITC show a higher proportion of students who have taken an entrepreneurship course than those who did not. In Table 9, there is a similar pattern that the majority of students have not taken the green entrepreneurship course conducted by another university. The remaining 8.8% stated they had taken an entrepreneurship course on green business and sustainability.

Table 8. Taking a course by the focal university: By university

University	Taking a course on green entrepreneurship and leadership provided by your univ.				Total
	No	Have take	Have take	Have take	
UII	29	29	4	8	70
UGM	19	20	10	1	50
UTM	5	5	1	0	11
UTHM	14	9	2	2	27
UMK	2	4	3	0	9
SKU	8	2	1	2	13
RUPP	31	6	1	1	39
ITC	7	11	2	0	20
USEA	10	4	3	7	24
CU	18	0	0	0	18
CTU	25	2	2	0	29
HUMG	175	9	6	10	200
Total	343	101	35	31	510

Table 9. Taking a course on green entrepreneurship and leadership provided by another university

Taking a course on green entrepreneurship and leadership provided by other univ.	Freq.	Percent	Cum.
No, I haven't	465	91.18	91.18
Yes, I have taken	45	8.82	100.00
Total	510	100.00	

3.2.2. Intention and Action

In the second dimension, we assess the Intention and Action of our respondents. Intention includes the intrinsic and extrinsic motivation, whereas Action refers to the students' propensity for action. Figure 14 illustrates the distribution of responses alongside two sub-items: intention to start a venture and intention to participate in a green program. From the data, we see that the majority of partner institutions have a very high level of Intention (range 5 to 7).
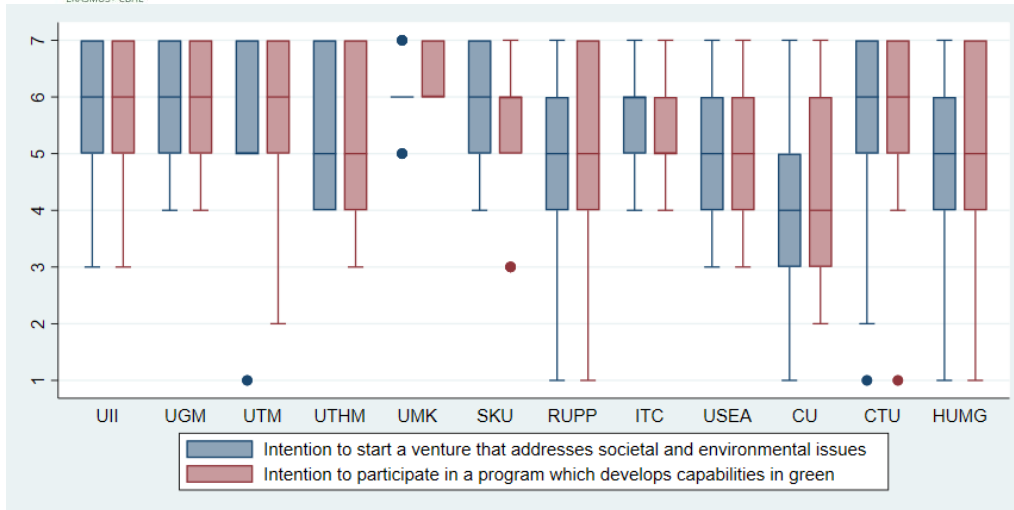
Figure 14. Intention towards green entrepreneurship and leadership

To move to the measure of Motivation, Figure 15 shows that students have a very high level of motivation (range 5 to 7) towards green entrepreneurship and leadership. Some components such as "the acquisition of tangible assets", "compliance to a third-party expectation", and "avoiding guilt" appear to score slightly lower than the rest but remain on a high level. This implies that an engagement in green entrepreneurship and leadership is driven by both intrinsic and extrinsic motivation.
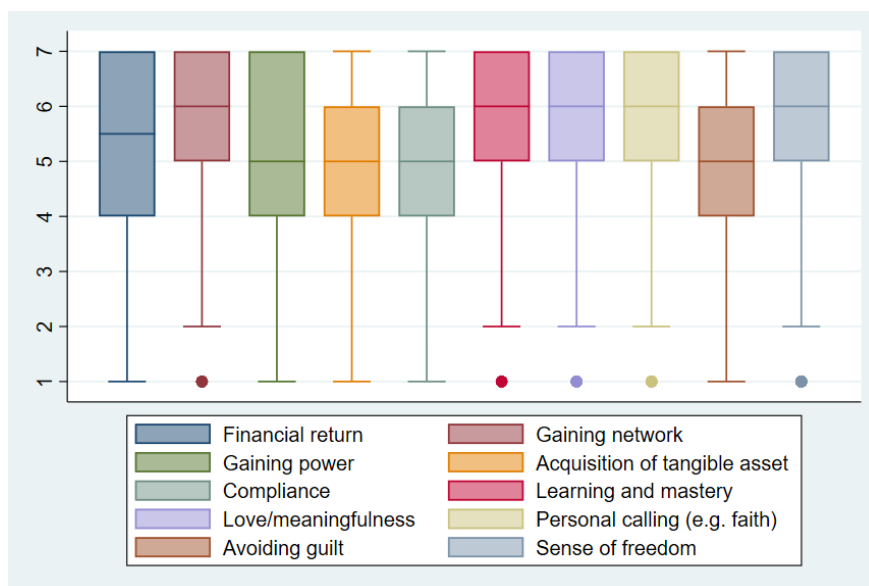
Figure 15. Extrinsic and intrinsic motivation towards green entrepreneurship and leadership

3.2.3. Obstacles, Support, and Challenges

The third dimension is Obstacles, Support, and Challenges which aims to identify the barriers for students to engage with green entrepreneurship and leadership. For this dimension, we further distinguish it into three main items: (1) main obstacle/challenge, (2) kind of support

required, and (3) source of support required. As depicted in Table 10, we found that 34.31% of students raise the challenge of having insufficient knowledge. This is followed by a lack of skills (27.06%) and financial reasons (26.47%). These numbers correspond with the earlier dimension of Exposure, where most students are not well exposed and are unfamiliar with the notion of green entrepreneurship and leadership.

Table 10. The biggest obstacle to starting your own green venture

Biggest obstacle to your decision to start your own green venture	Freq.	Percent	Cum.
Lack of knowledge	175	34.31	34.31
Lack of skills	138	27.06	61.37
Financial reasons	135	26.47	87.84
Social reasons	47	9.22	97.06
Other	15	2.94	100.00
Total	510	100.00	

Table 11 presents the tabulation of the required support needed by the students and from which institution/sources students would seek such support. As can be seen from the table, most responses converge on training (205) and mentoring/coaching (196), with university support structure as the most sought-after source of support (258). These indicate that students highly rely on the university to provide the necessary knowledge and skills to embark on their green ventures.

Table 11. Kind and source of support needed by students

What kind of support would you need?	Where would you look for support?						Total
	Universit	National/	Chamber o	External	Family/fr	Other	
Training	102	36	11	19	36	1	205
Mentoring/coaching	105	39	6	16	29	1	196
Funding	46	16	12	12	14	1	101
Other	5	0	0	0	1	1	7
Total	258	91	29	47	80	4	509

The word cloud in Figure 16 illustrates the summary of specific challenges faced by the students in their efforts to engage in green entrepreneurship and leadership. Here we identify that the results correspond with the challenges faced by the faculty members. These are (1) lack of knowledge, (2) lack of experience, and (3) lack of skills.

Figure 16. Challenges faced by the students

3.3. Community

We receive 93 responses with an average age of 34 years and an interaction span with the respective university of 5.8 years. Regarding gender (see Figure 17), our data comprised of 52 males, 39 females, and two who decided not to disclose their gender. Further detail regarding each dimension is provided in the following sections.
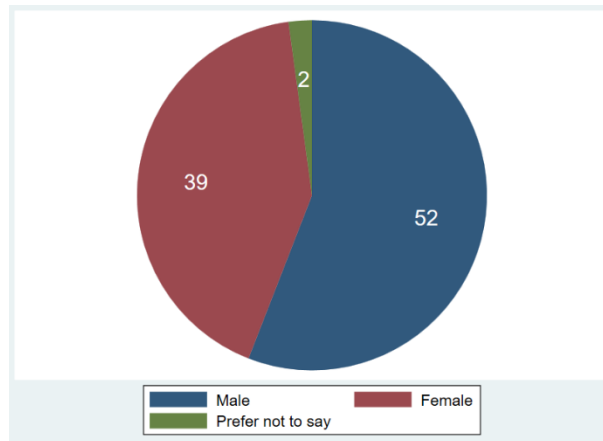
Figure 17. Distribution of respondents' gender

3.3.1. Engagement and Needs

In Engagement and Needs, we identify three items as a proxy for Engagement and two items for Needs. Figure 18 presents a box plot which shows the distribution of responses by the community. From the figure, we see that most universities' engagement level spans from moderate (range 3 to 5) to high (range 4 to 6). Some universities show a very high level of engagement, such as UII, UGM, UTHM, CU, CTU and HUMG. This is in contrast with CU which shows a low level of benefits experienced by the university.
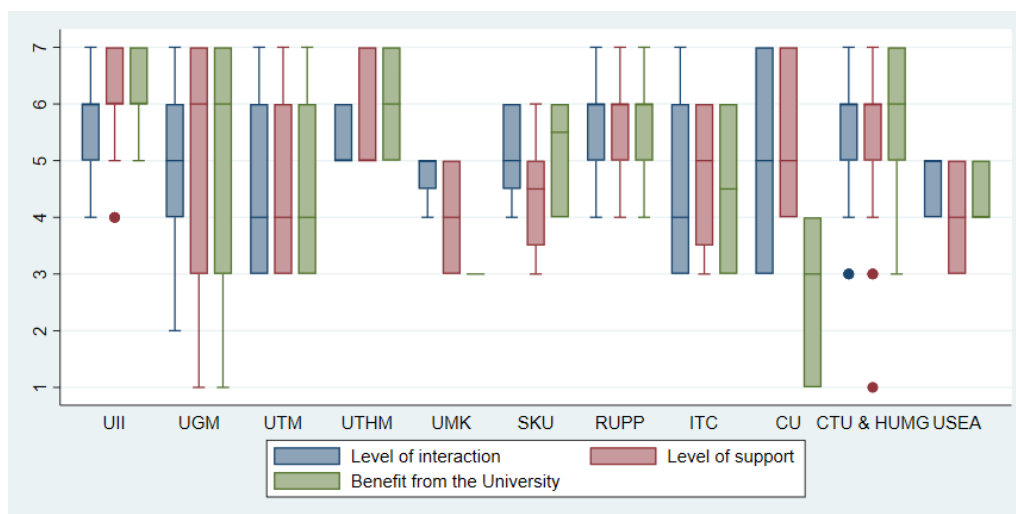
Figure 18. Engagement and needs of the community

In terms of Needs, we asked our respondents to choose what kind of support they needed the most. From Table 12, we found that funding is the main need required by the community, followed by mentoring/coaching. With regard to the source of support, we also found that most respondents would seek from the university support structure (41.7%), national/local agency for SMEs (22.7%), followed by external business consultants (14.7%). The full results are provided in Table 13.

Table 12. Kind of support needed by community

Needed support	Freq.	Percent	Cum.
Funding	46	49.46	49.46
Mentoring/coaching	26	27.96	77.42
Training	21	22.58	100.00
Total	93	100.00	

Table 13. Source of support sought by community (multiple response possible)

	Frequency	Percent of responses	Percent of cases
University support structure	68	41.72	75.56
National/local agency for SMEs	37	22.70	41.11
Chamber of commerce	18	11.04	20.00
External business consultant	24	14.72	26.67
Family/friends	11	6.75	12.22
Other	5	3.07	5.56
Total	163	100.00	181.11

3.3.2. Expectation and Challenges

For the dimension of Expectation and Challenges, we measure the extent to which the community is satisfied with the current role of the focal university and the extent to which the focal university should engage with the community. The box plot result for this is depicted in Figure 19. While the majority of the community have been highly satisfied with the role of the focal university (with the exception of UMK), there is a general tendency that all communities demand a greater level of engagement by the focal university.
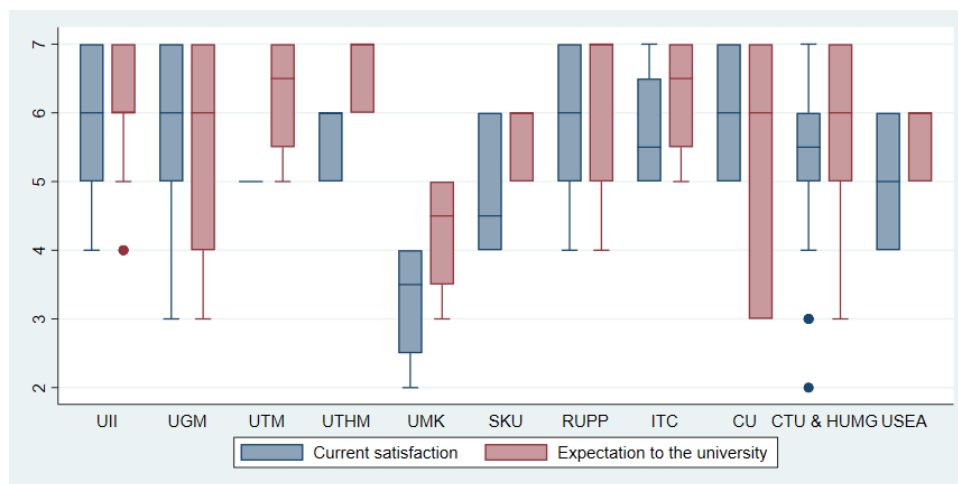
Figure 19. Current satisfaction and expectations toward the university

Figure 20 presents the summary of the various challenges faced by the community in their engagement with green entrepreneurship and leadership. Therein we can infer some common themes such as (1) human resources, (2) lack of knowledge, (3) market expansion, (4) local government, and (5) connection of member (social capital).
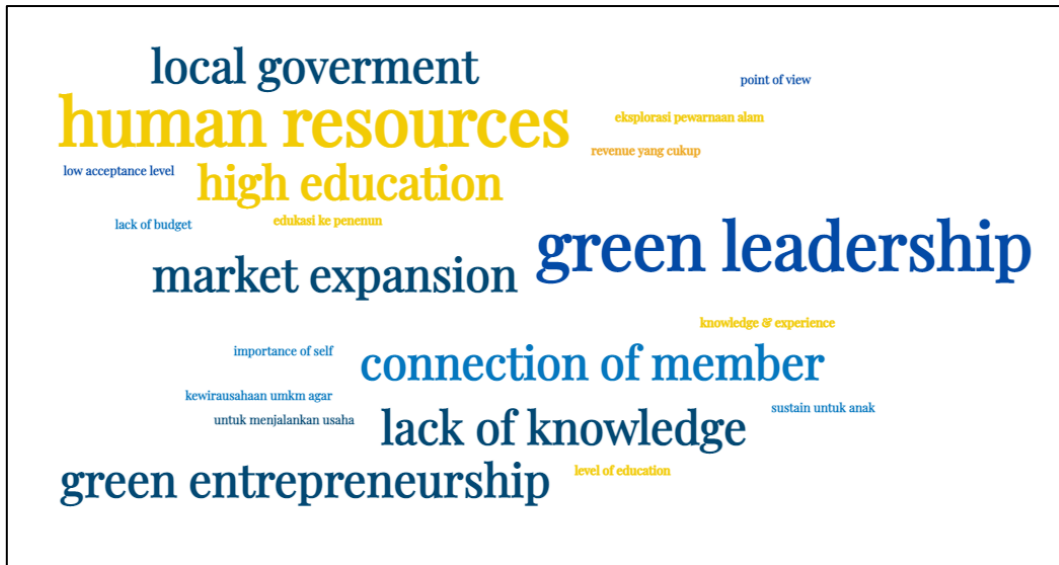

Figure 20. Challenges at the community level

4. Focus Group Discussions (FGDs) Results

4.1. Universitas Islam Indonesia (UII)

4.1.1. University and Faculty

The Focus Group Discussion was conducted with the representatives from the university (Universitas Islam Indonesia), and faculty members and students from sampled respondents from the gap analysis survey, including the students' start-up groups as well as micro and small businesses, previously trained in UII's business incubator program (IBISMA – Inkubasi Bisnis dan Inovasi Bersama). The Directorate for Entreprenurial Development/UII's Growth Hub facilitated and led the FGD. Table 2 below lists the FGD participants.

Table 14. List of FGD Participants

No.	Name	Position (Level)
1	Ir. Wiryono Raharjo, M.Arch., Ph.D	Vice Rector for Networking and Entrepreneurship [Univ]
2	Miftahul Fauziah, S.T., M.T., Ph.D.	Dean, Faculty of Civil Engineering & Planning [Faculty]
3	Fuad Nashori	Dean, Faculty of Psychology and Sociocultural Sciences [Faculty]
4	Prof. Noor Cholis Idham, Ph.D., I.A.I.	Head of Architecture Department [Faculty]
5	Dr.Eng. Hendra Setiawan, S.T., M.T.	Director, Research and Community Development [Univ]
6	Bagus Panuntun, SE., MBA	Lecturer, Management Study Program [Faculty]
7	Ayu Chairina Laksmi, M.Res., Ph.D	Secretary, Accounting Study Program (International Program) [Faculty]
8	Prof. Jaka Nugraha	Director, Academic Development [Univ]
9	Dr. Yulianto Purwono Prihatmaji, S.T., M.T.	Head of Architecture Study Program (Undergraduate Program) [Faculty]
10	Hangga Fathana, S.IP., B.Int.St., MA	Head of International Relations Department/Study Program [Faculty]
11	Eko Siswoyo, S.T., M.Sc.ES., Ph.D.	Head of Environmental Engineering Department/Study Program [Faculty]
12	Dr. Budi Agus Riswandi, S.H., M.Hum.	Head of Law Study Program (Undergraduate Program) [Faculty]
13	Dr. Ir. Arif Wismadi, M.Sc.	Director Growth Hub UII [Univ]
14	Karina Utami Dewi, S.I.P., M.A.	Secretary, International Relations Study Program (International Program) [Faculty]
15	Amaria Dila Sari, ST., M.Sc	Director, IBISMA [Univ]
16	Nihlah Ilhami	Head of International Mobility Division [Univ]
17	Indah Kurnia Sari	Staff of Growth Hub [Univ]
18	Rimadilla Rizqy Linauliyamara	Growth Hub [Univ]
19	Dimas Panji Eka Jalaputra	Growth Hub [Univ]
20	Okza Achmad Styawan	Growth Hub [Univ]
21	Ahmad Syihabuddin Zankie	IBISMA UII [Univ]

Current state of support toward green entrepreneurship and leadership

- How far has the university/faculty supported green entrepreneurship and leadership?

UII is the Most Sustainable Private Campus in Indonesia. UII was awarded as the greenest and most sustainable Private University according to UI GreenMetric World University Rankings in 2019 and 2020.

- How central is the notion of 'green' being part of the university's/faculty's mission?

UII has a dedicated Board for Planning and Development with its role as Sustainability Office Universitas Islam Indonesia. It assesses the sustainability aspect of physical and academic missions. In the Faculty of Civil Engineering and Planning, UII has an internationally recognized study program in Environmental Engineering.

- What current projects/programs (if any) have the university/faculty been engaged in concerning green entrepreneurship and leadership?

The ongoing leadership program is currently developed under Erasmus + Ihilead (Indonesian Higher Education Leadership). Meanwhile, entrepreneurial development has been supported by Erasmus + GITA (Growing Indonesia Triangular Approach).

Curriculum and teaching staff

- How strongly is the notion of 'green' being part of the curriculum? In what course(s) does it appear?

The course in Environmental Engineering has a well-established curriculum on green aspects and is Internationally recognized under international accreditation from Accreditation Board for Engineering and Technology (ABET) and Indonesia Accreditation Board for Engineering Education (IABEE).

- How far has the university developed the teaching staff regarding green entrepreneurship and leadership?

The faculty of Civil Engineering and Planning (FCEP) has supported the staff with green-related courses with micro-credential is affiliated with Green Building Council Indonesia (GBC Indonesia).

- What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, etc.)

Universitas Islam Indonesia is committed to mitigating the negative impacts of various activities, energy consumption, and utilization of technology affecting the UII campus area. The entire academic society, either students, lecturers, or staff members, can contribute to making several changes and support the environmentally-friendly lifestyle of the members of the UII Campus. As the campus started to initiate the development of entrepreneurial skills among the civitas academia, the green entrepreneurship project is one of the efforts of

UII to contribute to the development of environmentally-friendly entrepreneurship, and this program has been initiated via the Growth Hub.

Challenges and opportunities

- What challenges do the university/faculty face in strengthening the commitment to sustainability?

The ANGEL is one of the Erasmus projects at UII in which the faculty members are proud to have this project. The 'grassroots' or faculty member representative is concerned about what kinds and detailed activities can be developed because the issue of green entrepreneurship is still limited.

There is already a Growth Hub (Simpul Tumbuh) and IBISMA (incubator), but ANGEL is still a kind of pilot project in which the impact of the results still has not been felt directly at the grassroots level. The efforts of more disseminating activities are needed so that the grassroots level can support the project and feel the impacts.

- What opportunities can the university/faculty seize to strengthen its commitment to sustainability?

The environmental engineering study program is ready to actively support this project because most of the staff have certified green expertise and are concerned about green issues and innovation. Other faculties e.g. Economy and Business also express full support for the economic impact of the green entrepreneurial program. The International Relations program has more interest on the leadership aspect of the green-entrepreneurship.

Emerging insights not covered in the previous parts

As a private university, the university needs to communicate the ideas of development, especially with the Foundation Board, regarding the project's impact that may result in changes in the university to become an entrepreneurial university. One of the possible physical evidence of this emerging initiative is a teaching-factory establishment.

The idea of entrepreneurship and green leadership is closely related to the 'downstream' policy. Therefore, the kinds of policies to support the teaching industry, for example, are the consolidation of the lab, leader capacity, a vision to market and support for the green community to increase the capacity to export the products rather than importing green **commodities.**

4.1.2. Students

The Focus Group Discussion was conducted with the representatives from the university (Universitas Islam Indonesia), faculty members and students from sampled respondents from the gap analysis survey, including the students' start-up groups as well as micro and small businesses previously trained in UII's business incubator program (IBISMA – Inkubasi Bisnis dan Inovasi Bersama). The Directorate for Entrepreneurial Development/UII's Growth Hub facilitated and led the FGD. Table 2 below lists the FGD participants representing student groups and start-up communities.

Table 15. List of FGD Participants

No.	Name	Community/Start-up Names
1	Khairul Hafidh	USY-BOX*
2	Agus Darmawan	USY-BOX*
3	Halida Ulfah	Idemes*
4	Nanda Dwi Putra	IBISMA UII*
5	Muhammad Wafa akhyari	NETRAKU
6	Lu'luatul Awaliyah	PBI UII/Netraku
7	Putri Amalia	PlusTreat*
8	Osa Rosanto	SUAI ORIGINAL*
9	Hanum Wahyu Wibisono	CV Khaira Buana Mas
10	Niken Agustin	NGOMBE JAMU
11	Aulia Mahmud	bin Sangkut*
12	Muhammad Idris	ZAKEA*
13	Muhammad Fadrin Haryadi	USY-Box*
14	Krisna Mu'tashim Azhar	Next Optima *
15	Dyogi Miyosa Trianzie	KPI Minalegi
16	Fatmawati	USY-BOX*
17	Dikko andrey kurniawan	Sawokecik
18	Nadia Hanum	bin Sangkut*
19	Maeva Apriza P	PLUSTREAT*

*) Full-time students or alumni, the others are the participants of incubators curriculum or short courses.

Current state of exposure towards green entrepreneurship and leadership
- How familiar are the students with the concept?
- How did the students know about the concept? What sources did they refer to?
- How far have the students received course materials related to green entrepreneurship and leadership?

Students showed understanding of the way they appreciate waste paper of shipping products. They use cardboard and waste paper for shipping goods and shipping labels related to green efforts. They also cooperate with the bag artisans in recycling the waste paper to make bags. 'Downstream' is very important because not all people understand 'green awareness'. There are lots of efforts that can be made related to re-use of unused materials.

UII already has some courses related to entrepreneurship, such as within psychology, international relations, and communication science study programs. From a dedicated course, it is expected that there will be a kind of festival or competition to expose the products produced through the courses every year. Perhaps this can be attributed to the issue of green entrepreneurship as including green issues when making these products. FPSB will soon secure a selection of outstanding students, including for the category of green entrepreneurship.

On the entrepreneurial aspect, UII has a Growth Hub (Simpul Tumbuh) resulting from the previous Erasmus project named 'GITA'. The project was finished two years ago, and one of the activities was mapping the curriculum to encourage an entrepreneurial mindset among students.

Intention and action

- How strongly did the students commit to green entrepreneurship and leadership?
- What actions have the students taken in the area of green entrepreneurship and leadership?
- What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, etc.)

Not all startups initiated the idea specifically to address green products. The one which successfully won the competition, however, is often related to a green initiative. The startups which have committed to a Student startup ('PlusTreat'), for example, have finished making the ATM to save plastic bottles for the recycling process. PlusTreat has won 2nd place in the ASEAN P2A Hackathon competition.

4.1.3. Community

The Focus Group Discussion was conducted with representatives from the university (Universitas Islam Indonesia), and faculty members and students from sampled respondents from the gap analsysis survey, including the students' start-up groups as well as micro and small business previously trained in UII's business incubator program (IBISMA – Inkubasi Bisnis dan Inovasi Bersama). The Directorate for Entreprenurial Development/UII's Growth Hub facilitated and lead the FGD. Table 2 below lists the FGD participants.

Table 16. List of FGD Participants

No.	Name	Community/Start-up Names
1	Khairul Hafidh	USY-BOX*
2	Agus Darmawan	USY-BOX*
3	Halida Ulfah	Idemes*
4	Nanda Dwi Putra	IBISMA UII*
5	Muhammad Wafa akhyari	NETRAKU
6	Lu'luatul Awaliyah	PBI UII/Netraku
7	Putri Amalia	PlusTreat*
8	Osa Rosanto	SUAI ORIGINAL*
9	Hanum Wahyu Wibisono	CV Khaira Buana Mas
10	Niken Agustin	NGOMBE JAMU
11	Aulia Mahmud	bin Sangkut*
12	Muhammad Idris	ZAKEA*
13	Muhammad Fadrin Haryadi	USY-Box*
14	Krisna Mu'tashim Azhar	Next Optima *
15	Dyogi Miyosa Trianzie	KPI Minalegi
16	Fatmawati	USY-BOX*

No.	Name	Community/Start-up Names
17	Dikko andrey kurniawan	Sawokecik
18	Nadia Hanum	bin Sangkut*
19	Maeva Apriza P	PLUSTREAT*

* Full-time students or alumni, the others are participants of incubators curriculum or short courses (small, micro-business, or start-up community).

Current state of support towards green entrepreneurship and leadership
- How far has the community been in touch with the university regarding green entrepreneurship and leadership? In what forms (if any)?

UII has an annual entrepreneurial grant of UII Business Innovation Challenges (UBIC) with 8 themes including the green aspect of business (e.g. food security, new and advanced material, energy, transport and maritime, creative and tourism industries).

- How central is the notion of 'green' being part of the community's mission and strategy?

One of the community representatives provides testimonials of Nila fish farming, starting from seed to selling fish to consumers. The business carried out is already environmentally friendly because the feed used is already environmentally friendly.

Another testimonial is related to recycling plastic waste (bottle caps and plastic waste) into woven fabrics for fashion products.

Challenges and expectations
- What barriers does the community face in strengthening its commitment to sustainability?
- What form of support do the communities expect from the university regarding sustainability?
- Other emerging themes

In the case of fish farming, the concern is on fish cultivation. The process of production and the raw material is consumed with zero waste, but fish delivery is still with plastic bags. If this continues, this effort will cause a lot of plastic waste.

The community is expecting to have a plastic substitute or another way that does not use plastic. The University is expected to do research on materials for substitute plastics.

On the upcycling fashion product, the current challenge is because it is still a new product, so there are still many limitations, such as the need for training for housewives for weaving skills and the limited capacity of production machines (1 loom available) and the target market.

Emerging insights uncovered in the previous parts
UII has established a Campus Marketplace for the community to conduct product testing, market validation, and marketing program. This platform allows community members to participate and onboard their green innovation products.

4.2.   Universitas Gadjah Mada (UGM)

4.2.1.   University and Faculty

The Focus Group Discussion was carried out with the representatives from the university (Universitas Gadjah Mada) and faculty members of the Faculty of Economics and Business. Chronologically, the FGD was conducted in two phases: firstly, with the lecturers of entrepreneurship and leadership courses and, secondly, with the Director of the Directorate of Business Development and Innovation of UGM. Table 2 below lists the FGD participants.

Table 17. List of FGD Participants

No.	Name	Position (Level)
1	Hargo Utomo, Ph.D.	Director of the Directorate of Business Development and Incubation (University)
2	Teguh Budiarto, M.I.M.	Lecturer of Entrepreneurship course (Faculty)
3	John Suprihanto, Ph.D.	Lecturer of Entrepreneurship course (Faculty)
4	Risa Virgosita, Ph.D.	Lecturer of Entrepreneurship course (Faculty)
5	Prof. Nurul Indarti, Ph.D.	Head of the Management Department (Faculty)
6	Boyke R. Purnomo, Ph.D.	Deputy Head of the Management Department (Faculty)
7	Rocky Adiguna, Ph.D.	Head of Management Laboratory (Faculty)
8	Tur Nastiti, Ph.D.	Coordinator of the Leadership Research Group (Faculty)
9	Naya Hapsari, M.Sc.	Lecturer (Faculty)

Current state of support towards green entrepreneurship and leadership

At the university level, the support towards entrepreneurship is represented by the presence of the Directorate of Business Development and Incubation. Within this directorate, a unit called Innovative Academy (IA) facilitates the technology and innovation mainstreaming for the university. IA operates the university's Science Park, *UGM Science Techno Park*, and it is in close collaboration with the *Agrotechnology Innovation Center*, which relates to the green entrepreneurship applied technology initiatives. There is no explicit focus on green entrepreneurship and leadership yet. However, community service and sustainable development have been part of the university's mission, which is "to carry out education, research, and community service as well as preservation and development of knowledge that is excellent and useful for society."

At the faculty level, there are signs of more attention, commitment, and support towards green and environmental sustainability. Physically, for example, the Faculty's Learning Center building is constructed with the concept of green building. Waste bins that separate organic and non-organic waste are placed at every corner of the campus. In terms of the study program, the undergraduate program provides a Business Sustainability course which introduces the students to the green concepts. The graduate program, particularly the MBA program, offers a new concentration on sustainability management which commenced in 2021.

Curriculum and teaching staff

At the course level, we found that the focus on green entrepreneurship and leadership varied among the lecturers. There are courses related to entrepreneurship and leadership in the bachelor's and master's degrees, such as business planning, entrepreneurship, and organizational behavior and leadership. The notion of leadership is strongly emphasized in the curriculum since it is an explicit part of the Faculty's mission. However, the presence of the 'green' concept/orientation is still minor. We found that some lecturers brought up the concern on environmental and social sustainability by introducing the concept of Triple Bottom Line (i.e., profit, planet, and people). Some other lecturers integrated the notion of green entrepreneurship into the course's project-based activities for the students. Despite the variety, a common pattern found was that 'green' is largely placed as a topic within the course rather than as a core concept to be expanded throughout the course.

At the time of FGD, we identified two teaching staff with formal training regarding green/sustainable business management. Some lecturers have had their research related to sustainability, such as green supply chain, green accounting, and green finance. Overall, however, there is still a lack of experts with formal training and research in the specific field of sustainability.

The latest development in the faculty regarding the curriculum is the initiation of the ASEAN Master in Sustainability Management program. This program is fully funded by the Norwegian Ministry of Foreign Affairs and is in collaboration with the University of Agder, Norway. The program targets ASEAN graduates and builds on the Faculty's existing MBA program with a renewed curriculum focusing on environmental sustainability. The focus on green entrepreneurship and leadership are strongly present in the program.

Challenges and opportunities

At the university level, IA sees considerable potential for collaboration in the area of green/environmental sustainability entrepreneurship. Given that there are many sustainability-related activities in the university, such as the *Center for Energy Studies* and *Center for Environmental Studies*, IA is willing to be the hub for activities that facilitates a multi-disciplinary approach to entrepreneurship. Although there is no dedicated unit for green entrepreneurship and leadership, IA is very supportive of ANGEL's future initiatives in this direction.

With the lack of teaching staff with formal training and expertise in green/sustainability entrepreneurship and leadership, it remains a challenge for the Faculty to develop a dedicated curriculum focusing on sustainability. At the same time, this is an opportunity to boost the capability of the teaching staff with a structured approach to carry out research and teaching on the topic. There is a scope to bring the green orientation towards the core of the curriculum.

Other resources are also available. Collaboration schemes with the local communities are present but not fully utilized. In this regard, there is an opportunity to strengthen the link between the entrepreneurship course with the students-led projects in the local

communities. There is also the need for enhancing the pedagogy with multimedia infrastructure (e.g., video production studio).

4.2.2. Students

The Focus Group Discussion with the students was conducted with invited Management students at the Faculty of Economics and Business UGM from both undergraduate degree and postgraduate degree. 8 students attended the FGD, which was facilitated by Dr. Tur Nastiti, Naya Hapsari, M.Si., and Dr. Rocky Adiguna. The list of participants is shown in Table 2.

Table 18. List of FGD Participants

No.	Name	Position (Level)
1	Erwan Cerentio	Undergraduate (Management)
2	Asyfa Resti Indriati	Undergraduate (Management)
3	Fariyane Winangkat Emiliah	Postgraduate (Management)
4	Tri Mulyadi	Postgraduate (Management)
5	Annisa Ayuditya	Postgraduate (Management)
6	Anugerah	Postgraduate (Management)
7	Adam	Postgraduate (Management)
8	Supriyadi	Postgraduate (Management)

Current state of exposure towards green entrepreneurship and leadership
- How familiar are the students with the concept?
- How did the students know about the concept? What sources did they refer to?
- How far have the students received course materials related to green entrepreneurship and leadership?

The discussion started by identifying the familiarity of the participants to green entrepreneurship and leadership as a concept. Most of the participants agreed that green entrepreneurship and leadership are less popular if it contrasted with other existing similar terms such as green businesses and triple bottom line (the balanced interaction between people, planet, and profit). They also found confusion on the definition and scope of operationalization between those concepts.

Some students indicated recognition of the "green" term that was mentioned from certain courses held by the faculty such as entrepreneurship (undergraduate course), business creativity & innovation, and business modelling, both in the master level. However, superficial understanding on this concept creates a question on how to apply it.

In general, students are very interested to discuss green entrepreneurship and leadership as new concepts, and they are very fascinated in knowing further about the green activities. They are exposed to green campaigns not from the classes nor in-campus extracurricular activities but more from social media, relatives, environmental activists, and community movements which are starting to grow in the society. In addition to the green awareness

campaigns, some organizations also provide funding to social entrepreneurship initiatives that creates more opportunity and motivation for youngsters to be involved.

Many students' theses investigate the practices and dynamics of waste management in a local context. Reuse, reduce, and recycle of the waste is attributed as the example of practicing green entrepreneurship and leadership by participants. In conducting those researches, students find relevant theories, concepts, and framework through their own initiatives, not from a pre-planned course. Some students also admit that they did "green-like" activities by saving the use of resources on their daily activities. Other students from the executive MBA report that they become familiar with green business before joining the program. They are already exposed to this approach because of their work in companies that have focused on environmental/sustainability issues. An MBA student who has an undergraduate background from Biology reports that she was already familiar with green leadership during her bachelor's degree since environmental issues were discussed extensively in her field.

Intention and action
- How strongly did the students commit to green entrepreneurship and leadership?
- What actions have the students taken in the area of green entrepreneurship and leadership?
- What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, etc.)
- Other emerging themes

Students expressed their intellectual interests in green entrepreneurship and showed some leadership roles by giving examples on what and how they adopt pro-environmental behavior in their daily life. Some students wanted to take the role of as business practitioners, customers, and researchers. But above all, students need real-world examples from businesses to showcase that the green concept can actually be executed and can make positive impact for the environment.

Challenges and expectation
- What challenges do the students face when they commit to sustainability?
- How do the students expect the university to support their commitment to sustainability?

Several themes emerged from the FGD regarding the challenges that students face in committing to sustainability. They are: (1) the need for academics and experts to collaborate with practitioners to educate the general public toward pro-environmental behavior, (2) the need for governmental regulation which incentivizes businesses that adopt green orientation, (3) the need for the university to put green orientation into action.

4.2.3. Community

The Focus Group Discussion was carried out with the representatives from the university (Universitas Gadjah Mada) and faculty members of the Faculty of Economics and Business. Chronologically, the FGD was conducted in two phases: firstly, with the lecturers of

entrepreneurship and leadership courses and, secondly, with the Director of the Directorate of Business Development and Innovation of UGM. Table 2 below lists the FGD participants.

Table 19. List of FGD Participants

No.	Name	Position (Level)
1	Kapitania	CMO of Guru Bumi
2	Nathania	Founder and CEO of Guru Bumi
3	Avi S.	Founder and owner of Sekolah Cahaya Bumi (educational institution) and Bean Garden (café and restaurant)
4	Miftahudin Nur Ihsan	Founder and owner of Smart Batik

Current state of support towards green entrepreneurship and leadership
Our communities are Indonesian entrepreneurs with concerns about green environmental issues. They are also alumni of the MBA program at Universitas Gadjah Mada. With their relevant background, they are suitable for the gap analysis by comparing their practical demands as entrepreneurs to knowledge supply as being provided by the university.

"Doing business with green is a challenge." A willingness to attach green elements in the business is paramount. Working for something good for the environment recently is an investment to the future generations. Further, the existence of the future generation is a capital to business sustainability. This is a conceptual thought of the entrepreneurs under their willingness to be more greener. However, challenges are those in the practical details. Environmental friendly supplies are hardly to be provided and accepted. An example taken in a green wrapping. A biodegradable box/bag is used, but it is costly and easily broken. Also, a glass straw is provided, but customers choose to use a single use plastic straw under their hygiene concern. A natural color traditional garment of batik is served, but customers respond calmly to the product since its lower attractiveness compared to fabric coloring garment with chemical waste after production. Thus, it is a challenge for the entrepreneur to balance green willingness, environmentally based business concept, practicality details, and customer satisfaction.

The challenge is even harder when it comes to readiness in sustainability knowledge. The community demands to learn more sustainability knowledge, to study more green business practices, and to participate in the green community by becoming students in school of business. However, the institution is able to provide only limited services. Sustainability is an emerging concept in the school of business thought. It is growing rapidly by attracting a considerable number of scholars' attention. However, movement in business practically is even faster. Thus, it is noted that a practical-knowledge gap existed under a condition of incomparable movement of green business practicality and knowledge creation. The education institution has provided sustainability concepts along courses, but not yet provided a fully accomplished practical business solutions and committed green community.

Challenges and expectation
Lists of expectations are provided under two headings, that of knowledge creation and community development. The community expects academic institutions to create more

sustainability knowledge by doing more conceptual research, empirical study, and practical sharing. Green economics is a topic being noted with a purpose to expose the community with concepts, knowledge, and practices of business sustainability. They are willing to learn the way to balance environment and profitability in business. Furthermore, the community expects the institution to develop a center of green community. The community develops a green ecosystem on campus by inviting participants from scholars, business practitioners, entrepreneurs, government, and general community. The center drives discussions and sharing dedicated to sustainability concerns.

Emerging insights uncovered in the previous parts
Future business should be more greener. This commitment arises from entrepreneurs' willingness and lessons learned of business. Business is a living organism easily adapted to the environment. Customers are knowledgeable of the environment. They have been widely educated by sustainability. Thus, awareness and demand for green products is emerging. It is a tug for business practitioners to be more greener in business as a way to adapt better with customer and environmental demands.

4.3. Universiti Teknologi Malaysia (UTM)

This report summarizes the key findings of the focus group discussions conducted with 15 academics from Universiti Teknologi Malaysia (UTM) on their opinions and experiences on green entrepreneurship and leadership. The discussions revealed a general agreement by the academics of the definition of green entrepreneurship and leadership, factors that support and encourage the development of green entrepreneurship and leadership and the challenges that may hinder the growth of green entrepreneurship and leadership.

4.3.1. Objective

Focus group discussions (FGD) were undertaken to access the opinion of academia in the University Teknologi Malaysia on (1) the definition of green entrepreneurship and leadership; (2) the factors that support and encourage the development of green entrepreneurship and leadership; and (3) the challenges that hinder the growth of green entrepreneurship and leadership.

4.3.2. Method

Two focus group discussions (FDG) were conducted. The first group consisted of 8 attendees, and the second group comprised 7 attendees. They are academia in the Universiti Teknologi Malaysia and have experiences leading an entrepreneurship centre, actively conducting entrepreneurship programs, or teaching entrepreneurship courses. The groups were intentionally kept small to provide sufficient space for each attendee to express their experiences in-depth and maintain a "safe space" for everyone having in mind the potential sensitivity of the group. The attendees were invited and asked to participate in a discussion and share their input. The sessions were conducted in English and held on 7 October 2021. The moderator recorded the results of those discussions and then used them to create this summary report. The list of attendees and their designation is as below.

Table 20. List of participants.

No.	Name	Position (Level)
1	Prof. Dr. Mohd Shafry Mohd Rahim	Chair of Institute for Life-Ready Graduate (UTM iLeaGue)
2	Prof. Ir. Ts. Dr Mohd. Fadhil Bin Md Din	Director, UTM Campus Sustainability (UTMCS)
3	Dr. Shazwin Mat Taib	Deputy Director, UTM Campus Sustainability (UTMCS)
4	Assoc. Prof. Ts. Dr. Noor Azurati Binti Ahmad @ Salleh	Director, UTM Innovation and Commercialisation Centre (ICC UTM)
5	Assoc. Prof. Dr. Ramesh K S @ Mohd Zaidi Bin Abd Rozan	Associate Professor, AHIBS
6	Dr. Zuraidah Sulaiman	Senior Lecturer, AHIBS
7	Dr. Normal Mat Jusoh	Senior Lecturer, AHIBS
8	Dr. Norahim Ibrahim	Principal of Kolej Tun Hussein Onn, UTM
9	Dr. Norhidayah Binti Md. Yunus	Senior Lecturer, Faculty of Built Environment and Architecture
10	Dr. Farrah Merlinda Muharam	Deputy Director, UTM Innovation and Commercialisation Centre, and Entrepreneurship Lecturer
11	Dr. Logaiswari Indiran	Entrepreneurship Lecturer
12	Dr. Mohd Adib Sarijari	Senior Lecturer at Faculty of Engineering Entrepreneurship Lecturer and Academic Entrepreneur – Founder of UTM Spinoff
13	Dr. Mohd Iskandar Bin Illyas Tan	Senior Lecturer and Academic Entrepreneur – Founder of UTM Spinoff
14	Assoc. Prof. Sr Ts. Dr. Noorsidi Aizuddin Mat Noor	CEO MagicX Sdn Bhd Former Technology Manager, UTM Innovation and Commercialisation Centre (UTMICC)
15	Dr. Noorzana Khamis	Entrepreneurship Lecturer

4.3.3. Key findings

The main findings from data generated by the focus group discussions are summarized below. First, the enhanced definition of green entrepreneurship and leadership is deliberated upon. Second, the factors that support and encourage the development of green entrepreneurship and leadership development are presented. Finally, the discussion also brought valuable information in terms of inspirations and hope of the participants regarding green entrepreneurship and leadership initiatives.

Green entrepreneurship and leadership have been defined as a set of behaviours and capabilities that motivate and inspire others to achieve societal and environmental impacts. The main concern raised regarding this definition is entrepreneurship's missing behaviour or role in creating environmentally friendly practices. The environment is the ultimate goal in green initiatives. The leadership elements bring the urgency to create an ecosystem and invite all the relevant parties to join and contribute to the same mission while creating economic value. Green leadership is closely related to mindset, especially entrepreneurial mindset, to build the solution. As the leader also plays a significant role in ensuring community engagement and stakeholders, resilience value is also essential.

In terms of factors that support and encourage the development of green entrepreneurship and leadership, support from the university plays a significant role. Many initiatives have been implemented to support and promote the development of green entrepreneurship and leadership at the university level. Various well-equipped centres and labs have been developed, and programs have been introduced to ensure that the whole communities understand the concept of green entrepreneurship and leadership. The university also ensured integration between academia, industry, government and communities in any project initiatives.

Good governance gave room for collaborations between various parties, locally and globally. Good governance ensures faculties can work together in harmony at the university level, despite their different skills, expertise, and specialities. Engagement and involvement from various parties, including students and academia's, are also critical factors. Task forces, committees were developed to ensure they committed and fulfilled the responsibilities towards a particular task or project. It was also identified that many of the activities and projects held in the universities get full support from related private and public agencies. These agencies took the initiative to tie and link their own corporate social responsibilities project.

Currently, there are several different programs and initiatives in green entrepreneurship. In addition, a strong curriculum structure matters where relevant skills incorporated in the curriculum play a significant role in enhancing the students' green entrepreneurship and leadership mindset. The Malaysian qualifications framework had strategically embedded the graduates' personal, interpersonal, leadership, and other relevant skills. The curriculum has embedded various teaching pedagogies from work-based, project-based, and problem-based learning, which prepared the students with relevant skills and knowledge and developed their competency. A solid ecosystem that supports the whole initiative plays a part, especially in monitoring, supporting and mentoring.

The main concern raised regarding the challenges in implementing green entrepreneurship and leadership is funding. The available funding and research opportunities are quite limited for all researchers, especially when the projects are considered high-scale projects and involve many parties. Therefore, a specific grant and budget must be allocated to fund the activities.

Moving forward, the mindset on green entrepreneurship and leadership can be further strengthened. A robust green entrepreneurship mindset helps to achieve the right goals. Creating awareness is essential as some people have a different understanding of green entrepreneurship and leadership concepts and practices. It is also encouraged to do digital sharing, and It is also time to archive the projects and activities. Further, to reach the industry—we need to bring them inside. Some participants of the focus groups point out that open campus initiative is a good start. Another point to note is that the implementation of projects can be aligned with the key performance indicators or the agencies' blueprint. This could maximize the efforts of all of the parties while contributing to the communities.

Impact monitoring is also needed to verify whether the change happens and whether the **activities contribute as planned.**

4.4. Universiti Tun Hussein Onn Malaysia (UTHM)

4.4.1. University and faculty

Current state of support towards green entrepreneurship and leadership

- Awareness

Based on the findings, it can be reported that the green entrepreneurship and leadership in UTHM is still at its infancy stage, or in other words, it is at the low awareness level. Most of the respondents understand about green entrepreneurship but they agree that it has not been widely practiced nor been executed at the university level. The Student Center of Technopreneurship is the unit that handles entrepreneurship activities at UTHM. The Director mentions that no specific green business initiatives have been proposed by the Center for the students, but they perform any other entrepreneurial activities for students such as providing entrepreneurship training, consultations and coaching generally with no specific focus on green. The coaches for these activities are the community from outside UTHM and normally they are the owner-managers of successful companies. According to the Head of Department of the Center, there is entrepreneurship club called Enactus that has initiated a social entrepreneurship recycling project to help the community. They collected all abandoned bunting and banners nearby the university surroundings to recycle them for the use of other profitable project. This activity signifies there is at least one green entrepreneurship activity among students of UTHM.

The initiatives by the university to encourage the establishment of Spin-off companies in UTHM have been established recently. As to date there were 12 spin-off companies that have been registered. Two of them who run green business became the respondents in the focus group discussion. The products were developed based on their research project which then had the potential to be commercialized and brought forward to the market. These companies have to follow the university policy to link the students with these companies through the internship programs and etc. This is also due to the fact that the existence of work at campus policy to employ students for internship. By this way, students will be exposed to the green business activities with no special funding by the university to be given to students for a business incubator.

- Structure and Support to Promote Green Entrepreneurship and Leadership

Since 2021, UTHM has developed its new strategic reform to become a Global Technopreneurship University in 2030. The Table below shows the details of new strategic direction of UTHM.

Table 21. UTHM Vision and Mission Statement

VISION	"To be a global technical university in sustainable technology and

	transportation"
MISSION	"Provide technical solution for industry and community based on tauhidic paradigm"
DIRECTION	UTHM as a Global Technopreneur University 2030 (#GTU2030)
UNIVERSITY OBJECTIVES	● UTHM EDU-TRAIN ● Developing competent, professional and entrepreneurial graduates ● UTHM TECHNOPRENEUR ● Providing an ecosystem to develop TECHNOPRENEUR ● UTHM PRIHATIN ● Fulfilling social responsibility towards community and environment ● UTHM GOVERNANCE ● Practicing good governance and high performance culture

Based on the interview with the Director of Strategic Planning Office, he mentioned that there is strong linkage between university strategic directions with green business efforts which is closely related to the sustainable technology development. Most outputs of research and innovations in UTHM are using sustainable technology. With this core foundation, it can be considered that the products developed from this activity can be regarded as green entrepreneurship. With the new structure and new governance of the university, given the university current direction, this would lead to achievement of its strategic aims by 2030. For example, the Students Center of Technopreneurship will no longer perform activities for students only but it has been reformed to become the University Technopreneurship Center that plays the role to train not only students but also lecturers to become entrepreneurs. Hence, this technopreneurship ecosystem that is built to produce competent and technopreneurial graduates would facilitate the achievement of university objectives.

Curriculum and teaching staff

- Pedagogical Approach in Teaching Entrepreneurship

With regard to the discussion on the pedagogical approach with the faculty members and lecturers, the interviews have validated the findings from the survey. It has been shown that case study, problem based and project based method in teaching and learning have been extensively used in the class. Based on the interview, one of the lecturer mentioned that adoption of project-based methodology, case study methodology and problem-based in entrepreneurship curriculum is counted at least 50 per cent of the teaching delivery.

- Embedding Green in Curriculum

The notion of green has been part of the curriculum in UTHM on a very minimal number of courses, as per at the faculty of management and business, there are only 2 or 3 courses. When asked about how green entrepreneurship can be embedded in the entrepreneurship syllabus, they responded that it is not necessary because students should understand the basic foundation of entrepreneurship, so that after that they would be able to apply the knowledge to another context or setting including green business activities.

Challenges and opportunities

In this regard, the respondents elaborated on several important challenges and they are discussed below.

First, getting students to get involved in entrepreneurship is very hard and it's even harder when it has to be related to green business. Most of the students do not want to attach to the university's center as it involves hassles, bureaucracy, procedural and many more other barriers that stop them from registering their business with the university although they could get many benefits from it. Nevertheless, many efforts and initiatives are being implemented by the Center to promote their services, especially during the Pandemic COVID-19 the online trainings have been conducted extensively and yet the percentage of students' involvement is still low. It is hoped that in year 2022 a post-pandemic year, and the new support and structure of the university, entrepreneurship activities especially the green business can be enhanced among students and lecturers.

Next, discussing about challenges faced by lecturers in getting involved in entrepreneurship especially getting to market their products of innovation and research involve a great deal of hard work. One of the respondents said that a lecturer at university has many different roles, they have to teach and at the same time to do research. Although they have ideas and products from their research activities, they need support from the university when it comes to time limitation due to so many workloads that they have every semester. They also need motivation and to build confidence to do this. Besides that, one of the respondents who owns a green spin-off company did mention that he received every support and facilities that he needs for his company and he is happy for the openness of the university. Nevertheless, there are some challenges that he mentioned relating to the operation hours of his business and the working hours at the university, thus this imposed difficulties for him to run the business effectively. The other owner of a sustainable spin-off company who is focusing on food waste management has highlighted several needs that she would like for her business. She has highlighted several factors such as entrepreneurship training, proper facilities, etc.

4.4.2. Students

Our investigation on students was based on a single student informant. Therefore, result presented in this report was only indicative.

Current state of exposure towards green entrepreneurship and leadership

- Familiarity with the concept of green entrepreneurship and leadership

This concept was somewhat new to the student. The student declares that the topic of green entrepreneurship was not being taught at either Masters Level or PhD Level. Nevertheless, one of the elective subject that she took for her MBA was called 'Technopreneurship', it covers on the use of technology in entrepreneurship activities. The emphasis on green entrepreneurship was not being made at that point of time. Besides, a

course on Leadership that has been taught in the MBA Program was merely on leadership models and theories and not in relation at all to the leadership of green enterprises.

- Exposure towards the concept

The student commented that green entrepreneurship has been widely talked at the global spectrum. She knew it from the exposure of her reading from news, articles and etc, but she did not really grasp the exact meaning of the concept. She had a blurry understanding of the concept and wanted to know more to get fully exposed and look for new opportunities in this green business.

- Course materials on green entrepreneurship and leadership

So far the student has not received any course materials on green entrepreneurship and leadership from the institution.

Intention and action

- Commitment to green entrepreneurship and leadership

The student has so far engaged as a researcher of a research grant that works on topic of entrepreneurship in general. When asked about her commitment to green entrepreneurship and leadership topic, she replied that she would like to commit to this when being given a chance as she found it very interesting to explore in depth about the topic. She was interested on green fashion.

Challenges and expectations
One of the critical challenges in committing to sustainability is the understanding of the concept of green entrepreneurship and leadership and how to go about doing it. The student expects that the institution would provide a comprehensive understanding by offering 1 (one) specific course on green entrepreneurship and make it compulsory for all business students. From this action, student would be exposed to this concept and will have the full picture of this in embarking on the journey of becoming a green entrepreneur as well as buying green products.

Getting involve in business/entrepreneurship specifically on green entrepreneurship is another big challenge to student. Issue of funding becoming a hurdle to student when they could not apply a government loan because of having status as student. Therefore, it is expected that the university could provide some kind of zero-interest loan to student so that they would start their new venture at campus.

4.4.3. Community

The interview with the community has been done with 2 people that are (1) from the government agency (2) from the entrepreneur, therefore there will be 2 perspectives in this regard.

Current state of support towards green entrepreneurship and leadership

The government agency has developed a very close connection with the university in providing support towards green entrepreneurship to researchers in respect to providing medium to advanced research on technology and support on commercializing the product.

The entrepreneur of the community has so far no direct linkage on green entrepreneurship activities with UTHM. The entrepreneurs do benefit from the business talks delivered by center or faculty on general entrepreneurship activities. No emphasis has been given so far by the trainer on green entrepreneurship.

Challenges and Expectations

The biggest challenge for the entrepreneur is getting funding, besides, they require more support from university in terms of innovative ideas, new technology and facilities.

Having the university experts on certain field especially on green product and green business environment providing assistance for entrepreneurs to start up their companies is an ideal thinking. However, the respondent mentioned that to get connected with these experts is not easy, the university should open wide their university gate to outside people especially **the entrepreneurs in the community for this purpose.**

4.5. Universiti Malaysia Kelantan (UMK)

4.5.1. University and faculty

- Structures and support at university and faculty levels for green entrepreneurship and leadership conciseness at Universiti Malaysia Kelantan
- There are still some challenges limiting the understanding about green entrepreneurship at both university and faculty levels
- Pedagogical approaches emphasizing green entrepreneurship are fairly extensive at the faculty level. For instance, UMK through Faculty of Earth Science co organized one hybrid event '7th GoGreen Submit' which held on 14th-15th October 2021. This shows that UMK is committed towards green entrepreneurship and leadership
- The University should actively create awareness on Green leadership and entrepreneurship to the businesses as well as the community, to motivate them
- Business is mostly motivated by money- educate them of the advantages of having green entrepreneurship and leadership such as that it will reduce their cost in utility, consumption etc.
- Malaysia takes green matters seriously.
- Create apps to track green entrepreneurship
- Volunteerism

Current state of support towards green entrepreneurship and leadership

- How far has the university/faculty supported green entrepreneurship and leadership?

Since green entrepreneurship is a relatively new concept for lecturers, it is agreed that there is some support from both university and faculty levels. It is also recommended that the

university and faculty expand their academic collaboration with other green institution partners to provide more prospects for capacity building.

- How central is the notion of 'green' being part of the university's/faculty's mission?

UMK is currently in the pipeline of getting certificate in ISO 14020

- What current projects/programs (if any) have the university/faculty been engaged in concerning green entrepreneurship and leadership?

UMK is one of the consortiums for the ANGEL project. And the main task is to develop the curriculum and training relating to green entrepreneurship and leadership with the aim to educate the university ecosystem on green entrepreneurship.

UMK, through the Faculty of Earth Science, coorganized one hybrid event '7th GoGreen Submit' which held on 14th-15th October 2021. This shows that UMK is committed towards green entrepreneurship and leadership.

In applying for the grant, university staff need to state the impact of the propose research towards SDG.

Curriculum and teaching staff

- How strongly is the notion of 'green' being part of the curriculum? In what course(s) does it appear?

There is a broad understanding of incorporating "green" into the curriculum and teaching. The concept of 'green' is comparatively new to lecturers, despite the fact that some of them have attended workshops or training; however, the dissemination of the 'green' concept in business operations is uncommon. Some lecturers have barely introduced the related green components into their lecture and class discussions. Still, many faculties have run many hybrid events focusing on green topics.

- How far has the university developed the teaching staff regarding green entrepreneurship and leadership?

For the university, creating a green university entails more than just making the campus itself environmentally friendly; it also includes educating students about the need of green entrepreneurship and leadership. Interested professors are urged to submit applications and attend the workshops/trainings, and those in related fields are welcome to develop training programmes for their students as well.

- What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, etc.)

It is not deniable that student have a fair understanding of the green concept. To let them become familiar with the green topic, students are encouraged to conduct a research/ case study on any green related topic, e.g., start with recycling.

Challenges and opportunities

- What challenges do the university/faculty face in strengthening the commitment to sustainability?

Lack of skilled personnel in the field of green entrepreneurship and leadership is one issue hindering sustainability.

To balance between profit-oriented vs responsibility among entrepreneurs.

- What opportunities can the university/faculty seize to strengthen its commitment to sustainability?

Promoting the cooperation and creating business linkage with local and regional companies.

To change the mindset of entrepreneurs to value green entrepreneurship and leadership.

Engage with community to create many programs etc., webinars, creative writing to educate people of the importance of having green entrepreneurship and leadership.

The best time to educate people on green is at the early age. Start with recycling.

4.5.2. Students

Current state of exposure towards green entrepreneurship and leadership

- How familiar are the students with the concept?

Mostly students already familiar with the concept of green entrepreneurship, but they might also know other terms such as green technology, sustainable entrepreneurship, eco-friendly business which are synonymous to the green entrepreneurship concept.

- How did the students know about the concept? What sources did they refer to?

Students gained knowledge about entrepreneurship from their courses and the contents that relate to the natural and environmental protection. Not many entrepreneurships courses focus on using environment or natural resource as the core of the business.

- How far have the students received course materials related to green entrepreneurship and leadership?

Currently, there were some topics such as initiatives in doing relevant business and services, and environmental protection were offered to faculty via trainings/workshops. However, they opt to explore more by themselves.

Intention and action

- How strongly did the students commit to green entrepreneurship and leadership?

Students were eager to start their own venture with a social and environmentally friendly commitment in the future. They aim to set up green businesses and trade. But, for the first step they prefer to instil awareness and nurture environmentally friendly attitudes.

- What actions have the students taken in the area of green entrepreneurship and leadership?

They are willing to collaborate with the university in starting their own green business as a partner of the university and the university can help them to start it.

- What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, etc.)

The training support provided by the university would help them to initiate their own business. They would like to participate in efforts to instil awareness on green entrepreneurship by the university members such as participating in this FGD.

Challenges and expectations

- What challenges do the students face when they commit to sustainability?
- How do the students expect the university to support their commitment to sustainability?

The attitude of others towards instilling awareness and endeavor on implementing environmental protection and preservation.

In terms of enforcement, the University needs to setup a policy that promotes green entrepreneurship to the students formally and informally. By doing this, the student feels that he or she has strong support from the university.

4.5.3. Community

Current state of support towards green entrepreneurship and leadership

- How far has the community been in touch with the university regarding green entrepreneurship and leadership? In what forms (if any)?

They are willing to join if they are invited. If the business organization is not registered with the community-engagement department, most of the time the community doesn't know of the university's green entrepreneurship projects.

- How central is the notion of 'green' being part of the community's mission and strategy?

The burden of educating business owners/people on green practices falls on several tiers, including the community. Furthermore, most SMEs in Malaysia have not adopted green practices as a culture. As a result, the concept of reward and punishment can play a part in the process of educating and raising awareness.

Regulations have been devised by enforcement authorities to encourage business owners to apply green entrepreneurship in a non-direct way. The penalty, punishment, or a compound of these makes the business owner more vigilant in following orders, even if they are given by force. However, there is no doubt that this process has taught them how to be more environmentally conscious human beings.

Challenges and expectation

- What barriers does the community face in strengthening its commitment to sustainability?

In fostering green entrepreneurship, not only business owners must play a part in a company, but also that organization's entire workforce must be involved. However, if the employee does not have green practice awareness, it is difficult to establish this practice in the workplace. Workers, for example, maybe are unaware of the benefits of conserving electricity and water because they are not responsible for those expenditures. Green entrepreneurship practices in SMEs are challenging to be implemented due to this attitude.

If business owners are obliged to increase their costs in implementing green entrepreneurship, this practice will become increasingly difficult to be realised. This is because rising costs have a negative impact on a company's profitability. It makes business owners think about it and they may decide to act against it. A business owner, for example, may need to prepare a waste container that meets the required specifications, and this will incur large costs.

This increase in costs can lead to a bigger gap among business-for-profit business owners to practice green entrepreneurship. This is where governments and enforcers can play a role. This is because green practices need to be practiced by all levels of society, which includes business owners.

What form of support do the communities expect from the university regarding sustainability?

- For the university to be engaged/ come closer to community, ask what they need or problems to be solved. They do appreciate experts' help to minimize cost.
- Community is willing to share realistic framework to be used for teaching and learning material.
- Together encourage the awareness for green entrepreneurship.
- They are willing for the university to take their story as a case study. In a way, it promotes their businesses as well.

Emerging insights

Because business owners do not want to be subjected to fines or legal action, they can instruct employees to follow the rules set by the enforcement organizations. In the absence of fines and legal action to deter such unethical behavior, the business owner is likely to disregard the rules. Green leadership and entrepreneurship, as a result, are two notions that are extremely tightly associated. Leadership that supports green entrepreneurial practices

has the potential to stimulate society in general, and businesses, to follow the leader's cultures.

Business owners prefer if their actions regarding green practices are acknowledged by policy makers. For instance, if they perform green entrepreneurship practices, policy makers may give certificates of recognition to them. This certificate later may give extra merit when they apply for additional financing. In addition, tax relief or rebates can also serve as recognition if a business owner has to incur additional cost of green practices.

4.6. Hanoi University of Mining and Geology (HUMG) & Can Tho University (CTU)

4.6.1. University and faculty

Current state of support towards green entrepreneurship and leadership

- How far has the university/faculty supported green entrepreneurship and leadership?

The ideas of green business are shown at annual Research contests and Startup idea contests for students; these were taken into account and had good chances of being awarded. However, the university and faculty should extend their support to develop and realize the ideas of green entrepreneurship and leadership.

- How central is the notion of 'green' being part of the university's/faculty's mission?

This is a priority topic at HUMG and CTU as both universities are keen on sustainable development and environmental protection.

- What current projects/programs (if any) have the university/faculty been engaged in concerning green entrepreneurship and leadership?

Currently, there are no specific programs related green entrepreneurship and leadership. ANGEL, only few case study about green entrepreneurship were integrated in lectures. ANGEL project is one opportunity for the both HUMG and CTU to learn best practices and develop their own programs.

- Other emerging themes

Funding to support students to build and implement startup projects.

Curriculum and teaching staff

- How strongly is the notion of 'green' being part of the curriculum? In what course(s) does it appear?

There was an attempt to put 'green' in the curriculum with a few case studies about green entrepreneurship in lectures, but there was no specific course.

- How far has the university developed the teaching staff regarding green entrepreneurship and leadership?

Raising awareness of green entrepreneurship and leadership is one of the primary concerns at HUMG and CTU. Teaching staff are encouraged to apply for projects and attends seminars on related topics.

- What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, etc.)

Most students are at the beginning stage of learning entrepreneurship skills. Through participating in seminars with their teachers or participating in startup idea contests, they are understanding the green ecosystem.

Challenges and opportunities

- What challenges do the university/faculty face in strengthening the commitment to sustainability?

Lack of human resources for building an entrepreneurship and leadership training model, number of students, industry involvement, academic staff involved.

- What opportunities can the university/faculty seize to strengthen its commitment to sustainability?

Building cooperation with the local governments and industries. Support for new ideas of students from their activities at enterprises.

4.6.2. Students

Current state of exposure towards green entrepreneurship and leadership

- How familiar are the students with the concept?

Most of the students commented that this is a new topic. They were heard somewhere in the lectures but not systematically.

- How did the students know about the concept? What sources did they refer to?

A small number of students have taken courses outside the university with related concepts. Most of the respondents do not really understand the exact meaning of the concept.

- How far have the students received course materials related to green entrepreneurship and leadership?

Currently, students have not received any course materials on green entrepreneurship and leadership from the university.

Intention and action
Almost all of the respondents are considering starting a business in the area of green entrepreneurship and leadership and most of them intend to seek cooperation and support from the university.

Challenges and expectations

- What challenges do the students face when they commit to sustainability?

One of the key challenges in committing to sustainability is understanding the concept of green leadership and entrepreneurship, followed by the relevant knowledge and skills to implement it. Funding issues are mentioned as a big obstacle for students

- How do the students expect the university to support their commitment to sustainability?

They expect the most is support through Seminars/training, Spin-offs/Spin-outs and Incubators (in order of selection).

4.6.3. Community

Current state of support towards green entrepreneurship and leadership
Although the interraction between the community and the university in green entrepreneurship and leadership is limited, the community is relatively satisfied with the role of the university to their community regarding green entrepreneurship and leadership.

Challenges and expectations
Some of the challenges mentioned are: challenges of specific policies from the university in entrepreneurship activities, the enthusiasm in terms of cooperation and the way the members work, the gap between the theory in university and the practical point of view, funding limitation.

However, the communities look forward to support from the university to develop green entrepreneurship and leadership, they prioritize Training and Mentoring/Coaching.

4.7. Royal University of Phnom Penh (RUPP)

4.7.1. University and faculty

Current state of support towards green entrepreneurship and leadership
This section aims to discuss how the stakeholders in the university and faculty levels have been engaged concerning green entrepreneurship and leadership. Based on the data collected, the study reveals that:

- 77.7% of participants at the university level would significantly dedicate to Green Entrepreneurship and Leadership while 44.4% of stakeholders at the faculty level show they are ready.
- From the university perspective it is concluded that there is only 55.5% are connected to the presence of a collaborative scheme that connects the government and public environment on green entrepreneurship and leadership.
- From industry collaboration, 74.7% appears ready to support and work for green entrepreneurship.
- Overall, while the majority of the decision makers are ready to step forward to apply green entrepreneurship and leadership, stakeholders at the faculty level lack

knowledge and models of green entrepreneurship and leadership. Thus, this means they need capacity building and training on how to manage these approaches.

Curriculum and teaching staff

Based on the responses to interpret Green Entrepreneurship and Leadership, there is a set of behaviors and capabilities that motivate and inspire others to achieve societal and environmental impacts. We find that the top management teams at the university level have played significant roles to promote green entrepreneurship and leadership in terms of seeking collaborations and partners who have a common interest and commitment. Among this data collected, 66.7% have initiated the programs, projects, activities related to green entrepreneurship and leadership and have made efforts to measure the societal and environmental impacts of the institution's activities. However, the managers and implementors at the faculty level still need more support and training.

The statistics reveal that at the faculty level, only 33.4% of stakeholders understand and value the presence of exemplary initiatives of programs, projects, activities related to green entrepreneurship and leadership and 44% of them focus on a relevant study program in either undergraduate or graduate program.

In short, both curriculum and teaching methodology have to be the first focal approaches to be advocated.

Challenges and opportunities

- Challenges

42.9% of academic staff lack background knowledge of students' motivation from high school which makes it difficult to help them become a leader or entrepreneur. The majority of academic staff need to upgrade their knowledge on how to train students to be leaders or entrepreneurs and 14.3% need the models and capacity building. Another 43% lack commitment, expertise, and involvement.

The most difficult challenge is to fund or budget green entrepreneurship and leadership programs.

- Opportunities

This initiative program will promote young learners to develop their own business and the RUPP is building a National Incubation Center of Cambodia which will be the right place to conduct the main activities of startup, digital curricular, and heat energy which is the center for development mindsets of students/young entrepreneurs to use technology to solve (innovation solution) societies' problems and to make the solution sustainable. Thus, the students or young entrepreneurs will be enabled to create a business model for income generation. Human resource is a significant factor to be discussed and promoted. To convince the public, it is worth working collaboratively and exchanging successful stories among the project participants. Meetings and Conferences would be a mechanism to disseminate green entrepreneurship and leadership initiatives.

Emerging insights

Human resource is a significant factor to be discussed and promoted. To convince the public, it is worth working collaboratively and exchanging successful stories among the project participants. Meetings and conferences would be a mechanism to disseminate green entrepreneurship and leadership initiatives.

4.7.2. Students

Exposure

Course enrolment: About 79% of the respondents have not taken any course on green entrepreneurship and leadership whether offered internally or externally.

Course relatedness: The majority of the respondents stated that they have not studied a course or other course-related content on green entrepreneurship and leadership.

Intention and Action

Almost all respondents (94.9%) consider having a cooperation with university, to participate in the program of green entrepreneurship and leadership to start a green business, and intend to start a venture.

In respect to a number of factors motivating respondents to start a venture, 48.8% of the respondents voted on financial return; 38.9% on gaining power and influence; 3.4% on acquisition of tangible assets; 61.5% on compliance to a third-party expectation; 71.8% on learning and mastery; 66.6% on love and meaningfulness; 54.8% on personal calling; 56.4% on avoiding guilt; and 69.2% on a sense of freedom.

Obstacles, Support, and Challenges

Although there are a number of factors motivating respondents to start a venture, they still perceived some obstacles in running their own business. Those obstacles include 1) financial reasons (35.9%), lack of knowledge (30.8); 3) lack of skill (15.4%); and 4) social reasons (15.4%).

More than half of the respondents (53.8%) need training and 30.8% need mentoring from university support structures (41%) and national/local/agency for SME (30.8%).

Overall, nearly all respondents have not got a clear understanding of the concept of "Green Entrepreneurship and Leadership" and request to have more training, mentoring, and funding to support their starting this venture.

4.7.3. Community

Current state of support towards green entrepreneurship and leadership

The university has been playing a key role in supporting the community through green entrepreneurship and leadership program including communication, advisory, consultation, mentoring, university support structure, national/local agency for SMEs, chamber of commerce, external business consultant and family/friends and other key areas of support as well.

- Level of communication: About 66% of the respondents indicate a high level of effective communication within their communication and 22% indicate the highest level of communication through their experience communicating with the university.
- Advisory, consultation and mentoring: The survey reveals that they would want advice, consultation and mentoring delivery to the community once green entrepreneurship and leadership are in place with the indication of support up to 88%.
- Green entrepreneurship and leadership have played a key role in benefitting the community significantly as 78% support that it benefits the community as whole.
- Mentoring/coaching, training, funding and solutions for community in the campus are the key support factors; while, the majority of about 56% require funding and 33% require training program.
- The majority of about 78% needed by the community is the university support structure like an incubation unit, a centre of excellence and research centre, etc; while the rest support a structure like an external business consultant, a chamber of commerce and national/local agency for SMEs and only 22% is dependent on the family/friends.

Challenges and expectations

Green Entrepreneurship and Leadership refers to a set of behaviors and capabilities that motivate and inspire others to achieve societal and environmental impacts. In this respect, the university has played a significant role in engaging the community in various aspects of developing the community towards green entrepreneurship and leadership although the journey has faced certain challenges.

- Overall, the community are satisfied with the presence of the university in adopting green entrepreneurship and leadership and in providing services to the community as per indication of satisfaction of about 90%.
- Despite the fact that the community is well satisfied with the university adaptation of green entrepreneurship and leadership, the university should also increase its level of engagement and support to the community as per the indication of this suggestion by 82%.
- As a matter of fact, the adoption of green entrepreneurship and leadership by the university for the community has also faced certain challenges including lack of knowledge, funding and mentoring, profit-orientation, human capital, time, resistance, legal and compliance, and last but not least the supporting ecosystem at large.

Emerging insights

Perhaps, the fundamental challenge that limits the transformation of the community toward green entrepreneurship and leadership could be interpreted mainly in the mindset of the community. Traditionally, people prefer to stay in their comfort zone and ignore the 'movement' of technology and development of human capital accordingly. This requires commitment to change and acceptance of a new ecosystem of support as is suggested by the new generation. Green entrepreneurship and leadership therefore cannot be detached from soft skill training and positive thinking.

4.8. Institute of Technology Cambodia (ITC)

4.8.1. University and faculty

Current state of support towards green entrepreneurship and leadership

The survey data indicated that there were some activities, supporting green entrepreneurship and leadership. At the university level, 70% of participants thought that the institute is involved in activities which are dedicated to green entrepreneurship and leadership. However, only about 50% of participants thought that there were collaborative activities between the institute and government, public environment, and industry on green entrepreneurship and leadership, as is shown in the figures below. This result may indicate that the participants have broadly understood the core meaning of green entrepreneurship and leadership.

Curriculum and teaching staff

From the survey data, only about 50% of participants thought that there are some activities involving green entrepreneurship and leadership at the faculty level. This result confirmed that there are/is some other unit/center of the institute (70%) involving in green activities. Based on the results concerning the curriculum, about 60% to 70% of participants thought that the programs were linked to green entrepreneurship and leadership.

Challenges and opportunities

Challenges:

- Green entrepreneurship and leadership is not well understood.
- Lack of communication and information.
- Limited human resources, skills, facilities, and funds.
- No clear platform for green implementation.
- Hard to find investment in the area from any relevant stakeholders.

Opportunities:

- ANGEL will guide us to better understand green entrepreneurship and leadership.
- Young faculty members who are ready for capacity building.
- Other fund courses could be identified.

4.8.2. Students

Current state of exposure towards green entrepreneurship and leadership

From the responding participants, 65% of students have taken a course related to entrepreneurship and leadership, however, only about 10% of them have taken a course with specific content on 'green'. No student has taken a course of green entrepreneurship and leadership either inside or outside campus. Many students seem to not really understand about the concept of green entrepreneurship and leadership.

Intention and action

Most of the students showed a positive attitude to start a venture that addresses societal and environmental issues in the future (85%) and intend to participate and develop their capabilities on green entrepreneurship and leadership (90%). All students are willing to cooperate with the university in a seminar/training and incubator (55% and 45%, **respectively).**

4.8.3. Community

Current state of support towards green entrepreneurship and leadership

From the survey results, the community has been in touch the with university for a period between 5 to 8 years. Only about 50% of the community has interacted with the university regarding 'green'. If the community will look for support from the university for developing green entrepreneurship and leadership, they prefer training and consultation.

Challenges and expectations

All within the community are satisfying with the role of the university regarding green entrepreneurship and leadership. However, they lack information and a budget to start such a business. Moreover, there is limited knowledge and motivation for 'green'.

4.9. University of South-East Asia (USEA)

4.9.1. University and faculty

Current state of support towards green entrepreneurship and leadership

- How much has the university/faculty supported green entrepreneurship and leadership?

The university's strategic plans for 2016-2019 and 2019-2024 clearly stated its vision to develop competent human resources with a good attitude to respond to the national and international labor market where they can work and live in an era of globalization to contribute to society. Moreover, the core value also focuses on maintaining and protecting the environment.

- How central is the notion of 'green' part of the university's/faculty's mission?

USEA's mission is to build higher education and a vocational training education system for all levels in accordance with national and international standards to provide knowledge, Technical Skills, Soft Skills and a good attitude to learners to meet the needs of the national and international labor market. This is not clearly stated about 'green' yet.

- What current projects/programs (if any) have the university/faculty been engaged in concerning green entrepreneurship and leadership?

Two programs slightly involve green entrepreneurship and leadership, namely in International Business and Tourism.

- Other emerging themes

The Green/Environment issue has been introduced to students through their assignment on the subject of Social Responsibility.

Curriculum and teaching staff
- How strongly is the notion of 'green' part of the curriculum? In what course(s) does it appear?

In the International Business and Tourism majors of the university, there is an entrepreneurship subject in year three semester two and a leadership subject in year four semester one, but no focus on green yet. Green is only a small part of chapter 1, Social Responsibility, in International Business and Tourism.

- How far has the university developed the teaching staff regarding green entrepreneurship and leadership?

Mostly, lecturers at USEA follow the university's course syllabus, which is a bit unrelated to green entrepreneurship and leadership. In conclusion, the university has not yet developed teaching staff regarding green entrepreneurship and leadership.

- What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, etc.)

USEA opens its doors to all students to get extra knowledge outside the class. Primarily, activities related to green/environment have been introduced by USEA-American Corner, which mainly focuses on social activities such as cycling, tree planting, donating, and educating people in rural areas. Some students have the chance to participate in environmental programs organised by USEA partners, mostly NGOs, and some workshops related to the green environment.

- Other emerging themes

Extra curricular activities related to green entrepreneurship and leadership were requested; to not only put them into the curriculum but also as extracurricula for the students.

Challenges and opportunities
- What challenges does the university/faculty face in strengthening the commitment to sustainability?

The current challenge of USEA is that there is an insufficient amount of resources to be allocated for sustainability initiatives.

- What opportunities can the university/faculty seize to strengthen its commitment to sustainability?

Sustainability will be introduced to USEA management team, staff, lecturers, students and the community through this ANGEL project, the first with green as its focus. USEA management team plans to revise curricula of Management, international business, and

tourism by incorporating green entrepreneurship and leadership in the programs, subjects, or chapters.

- Other emerging themes

Community-based Tourism will be introduced in the major Tourism Management in the next curriculum revision meeting.

4.9.2. Students

Current state of exposure towards green entrepreneurship and leadership

- How familiar are the students with the concept?

USEA students from year 1-3 do not know about the concepts of green entrepreneurship and leadership. Year 4 students, however, mostly know the green concepts since it was introduced in a chapter of the Social Responsibility subject.

- How did the students know about the concept? What sources did they refer to?

Green entrepreneurship and leadership were a part of the Social Responsibility subject in year 4 so they know about the concept of green through their assignments. Moreover, USEA-American corner activities also promote 'green' to USEA students and community.

- How far have the students received course materials related to green entrepreneurship and leadership?

Green entrepreneurship and leadership is just a part of a chapter in year 4, so most students in year 1-3 may not know the materials related to green entrepreneurship and leadership.

- Other emerging themes

It is much better if USEA can provide courses or extra activities on green entrepreneurship and leadership through a seminar or workshop or training.

Intention and action

- How strongly did the students commit to green entrepreneurship and leadership?

USEA students express their strong commitment in social activities to promote 'green' and awareness of environment.

- What actions have the students taken in the area of green entrepreneurship and leadership?

Green entrepreneurship and leadership were introduced in parts of subjects. In the meantime, USEA-American corner and partners also promote environmental activities inside and outside the university such as cycling, planting trees, and other social activities.

- What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, etc.)

Practitioner is the most favourite among the students. They would like to be part of social development.

- Other emerging themes

USEA students also would like to promote charity activities for hospitals and their community.

Challenges and expectations

- What challenges do the students face when they commit to sustainability?

They have no funds to support their activities. Some of them, still, care about green/environment.

- How do the students expect the university to support their commitment to sustainability?

They need support from the university in organizing seminars related to entrepreneurship and leadership connected to green and to provide them with some funding for social activities.

- Other emerging themes

Students are part of their community so they want to see their community developed.

4.9.3. Community

Current state of support towards green entrepreneurship and leadership

- How far has the community been in touch with the university regarding green entrepreneurship and leadership? In what forms (if any)?

The community has been in touch with the university for around 3-6 years in the form of social actions such as the environmental day, workshops, and other events at the university.

- How central is the notion of 'green' being part of the community's mission and strategy?

It is an important part of the community since the community itself is now caring about the environment within their community. It is part of the community's mission and strategy in order to bring effective and sustainable positive change to the communities.

- Other emerging themes

Besides 'green', most community bodies aim to provide the youth with a comprehensive quality education and opportunities for development.

Challenges and expectations

- What barriers does the community face in strengthening its commitment to sustainability?

Most of the community is facing several challenges including ineffective regulatory enforcement, insufficient corporate responsibility of private sectors, and weak civil society. People in the community, mostly, do not know the concept of Green and it is sometimes very difficult to change their attitude to care about the environment.

- What form of support do the communities expect from the university regarding sustainability?

The University should provide mentoring/coaching, training and should also have a support structure for the community such as an incubation unit, a center of excellence, and a research center, etc. Luckily, some communities, for tourism purposes, care about environment. They set their own community rule "No Plastic in the Community."

Emerging insights uncovered in the previous parts
The University should be aware of the environmental issue and protect the community as well as study the community to assess their needs in order to participate in social and community development.

4.10. Champasak University (CU)

4.10.1. University and faculty

Main Findings
- Developing entrepreneurship and leadership activities and a researcher curriculum in Champasak University and Faculty
- Development and creation of especially green entrepreneurship and leadership activities
- Supported green entrepreneurship and leadership program.
- Opportunities the university/faculty can seize to strengthen its commitment to sustainability.

Current state of support towards green entrepreneurship and leadership

- How far has the university/faculty supported green entrepreneurship and leadership?

Champasak University is a public institution that follows the policy of the government to train personnel for self-sufficiency, high academic knowledge, and the ability to be prepared and willing to serve society. With the strength of solidarity and the unity of the staff and students, and with the support of the domestic society and the international community, we will endeavor to develop the university as an excellent educational institution in the southern part of Lao PDR and in South East Asia. Moreover, we will pay attention to conducting scientific research, providing academic services to society, and preserving our

magnificent national traditions while contributing to national socio-economic development for sustainability and prosperity.

- What current projects/programs (if any) have the university/faculty been engaged in concerning green entrepreneurship and leadership?

Through the cooperation between the Faculty of Natural Science and the Faculty of Economics and Management, Champasak University has won the project idea completion in Mekong Youth Innovative in the project topic "Biogas-production construction encouragement for farmers who have swine livestock in Sanasomboun district, Champasak province, Laos. Oxfam in Laos has established and provided funding for a project implementation" The project will be implemented between February to May of 2022.

- How far has the connects government, industry, and the public environment on green entrepreneurship and leadership?

Recently, Champasasak University, has an international connection through the cooperation between the Faculty of Natural Science, Faculty of Agriculture and Forestry, and Faculty of Economics and Management, Champasak University (the "Local Organization") in connection with a project financed by the Global Environment Facility/Small Grants Programme ("GEF SGP"), implemented by the United Nations Development Programme (UNDP) on behalf of the GEF Partnership and executed by UNOPS, WHEREAS, GEF SGP has established and provided funding for a project, being the Tree Seedlings Project and Demonstration of Ecological Afforestation for Non-Timber Forest Products. The project is being implemented from 01 January 2022 to 31 July 2023

Curriculum and teaching staff

- How strongly is the notion of 'green' being part of the curriculum? In what course(s) does it appear?

From the results of the survey we found that 33.33% of students studied a business ethics course. 27.78% of students studied a small and medium businesses course. 16.67% of students have taken the marketing on entrepreneurship course.

In agriculture, the business course has included entrepreneurship (11.11%). In addition, there was a student who took an environmental and economics course (5.56%).

- How far has the university developed the teaching staff regarding green entrepreneurship and leadership?

Recently, the Faculty of Economics and Management's lecturers have participated in the Economy and Environment Partnership for Southeast Asia (EEPSEA Partnership). The lecturers have succeeded in joining the training courses/workshop such as the Environmental Economics: 1) Benefit-Cost Analysis, 2) Valuation, 3) Behavioral and Experimental Economics held on 9-20 August 2021. Water Resource Management: Climate Adaptation in Transboundary Basins-EEPSEA-IIASA cooperation held on 12th, 14th, 21st October 2021.

They successfully completed the EEP SEA Annual Conference 1-3 December 2021. One presented a paper on the topic: Factors Affecting Household's Willingness to Pay for the Fish Conservation Zones: a case study from Khong District, Champasak Province, Laos. Another presented a research proposal on the topic: The willingness to pay for the construction of biogas plants for farmers who have swine livestock in the households' level Champasak province.

- What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, etc.

Students who have learned of business with a green environment (50%), and students who have said they have gotten relevant information during business ethics (50%). Most of the students wish to be offered by the university an entrepreneurship course (72.22%). Students wish to be offered by the university Leadership as well (27.78%). In the discussion session, some students have suggested requesting financial support for a clean drinking water supply for each faculty in order to decrease plastic waste

- How central is the notion of 'green' being part of the university's/faculty's mission and Economics and business curriculum?
    - Improve education quality and relevance.
    - Promote green scientific research and academic service to meet the national and local socio-economic development plan.
    - Promote disadvantages to access higher education.
    - Promote sports, preserve magnificent national arts, culture and tradition.
    - Improve the quality of green administration system.
    - Enhance international and national academic cooperation.

Challenges and opportunities

- What challenges do the university/faculty face in strengthening the development and creating of green entrepreneurship and leadership?

The university/faculty face problems with financial support in strengthening the development and creation of green entrepreneurship and leadership. Therefore, we would especially like to have a budget to implement green projects. We have very different fields and academic skills in terms of fields of education background that we will be able to share and learn for improving green entrepreneurship and leadership. Therefore, if we have financial support, we would like to add more green subjects related to sustainability into the faculty of Economics and Management for students' awareness of the environment and ecosystem improvement encouragement.

- What challenges do the university/faculty face in strengthening the establishing a research and development unit related to the environment in the Champasak University area?

The university and faculty face a lack of financial support in establishing a research and development unit related to the environment in the Champasak University area. We have lots of researchers with green project ideas to implement for the economy, environment,

and community. We have completed writing project proposals on the topics of biofertilizer, organic pig farm, and IELTS preparation course. The reason is that we plan to implement the project IELTS preparation course because we would like to have more opportunities for international cooperation. We have planned to survey and train Small and Medium Enterprise for supporting the concept of green entrepreneurship and leadership for sustainable development. In addition, we also plan to cooperate with the Faculty of Natural Science and the Faculty of Agriculture and Forestry in order to survey the local herbs in order to collect the species and test their medicinal properties, then work with Champasak province hospital to produce herbal medicine. In addition, we also like to encourage the community to grow herbs and plan to grow herbs in university campus. We have been trying to request financial support from international organizations.

- What opportunities can the university/faculty seize to strengthen its commitment to sustainability?

The university/faculty commits to strengthen its commitment to sustainability through cooperation and submits research and project proposals to improve the capacity building of researchers, lecturers, students, and communities for international standard organization cooperation to achieve green growth for the sustainable development goal.

4.10.2. Students

Current state of exposure towards green entrepreneurship and leadership

- How familiar are the students with the concept?

Most students lack knowledge of green entrepreneurship and leadership skills. In the past decade, the Faculty of Economics and Management programs focused on business administration and general economics without identifying an actual field of green entrepreneurship and leadership major.

- How did the students know about the concept? What sources did they refer to?

Students who studied business ethics (33.33%), students who had learned from small and medium businesses (27.78%), who had taken a course in marketing on entrepreneurship (16.67%). In agriculture, the business course includes entrepreneurship (11.11%). In addition, a student took an environmental and economics course (5.56%). To make students aware of green entrepreneurship and leadership opportunities. it is imperative to disseminate, train, and develop green entrepreneurship and leadership courses within the Faculty of Economics and Management. To enable students to learn to be green entrepreneurs and leadership. In the discussion with the students, they prefer to be self-employed rather than work for the government or be employed by private companies.

- How far have the student's received course materials related to green entrepreneurship and leadership?

Most students do not receive documentation about green entrepreneurship and leadership. The courses of the Faculty of Economics and Management did not introduce green entrepreneurship and leadership.

- What is your understanding of green entrepreneurship and leadership?

Most students also understand that green entrepreneurship is just a for-profit business venture. While students understand leadership as that only one person directs and leads a private company. The data analysis showed that the knowledge on topics about green entrepreneurship and leadership of students who have learned from the business with a green environment is equal to 50% and they have gotten the most relevant information in the course of business ethics (50%).

Intention and action

- How strongly did the students commit to green entrepreneurship and leadership?

From the discussion, most students are interested in becoming green entrepreneurs and leaders at many levels. They were paying attention to participating in the discussion session. Some of them would like to do a circular economy business, especially plastic reuse for tree nursery plantation. In addition, some of them have already started businesses in tea and coffee plantations and packaging.

- What actions have the students taken in the area of green entrepreneurship and leadership?

Some students have started their own businesses, especially in agribusiness and online platform sales.

- What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, Attitude, Value, Commitment, etc.)

Students must be involved in protecting the environment. They are actively raising awareness for everyone inside and outside the campus. and realize the importance of ecosystems and biodiversity. In the discussion session, some students suggested requesting financial support for a clean drinking water supply for each faculty in order to decrease plastic waste.

Challenges and expectations

- What challenges do the students face when they commit to environmental sustainability?

The specific challenges that students experience in relation to green entrepreneurship and leadership are those who have no ideas (77.78%), and who have an idea that they will adapt from the entrepreneur (22.22%). Students will need to be 'environmental sustainability' researchers' assistants after analyzing survey data in order to participate in project implementation and survey data collection for research work, and they will then learn more academic work and gain fieldwork practice experience.

- How do the students expect the university to support their commitment to sustainability?

Most students need to be supported by mentoring or coaching (50%). Training was supported by 38.89%, and funding by 11.11%. The students need to be supported by their family or friends (66.67%) and would appreciate being supported by the National or Local Agency for SMEs (33.33%). Students want the university to support the promotion of environmental conservation and reforestation activities in deforestation areas.

- How solve the student's issues, challenges, evaluation, and control?

In order to solve the student's issues, we are going to add 6 more subjects that related to green entrepreneurship and leadership growth development into the course includes:

1. Green Marketing production and operation
2. Green entrepreneurship and leadership
3. Bio-circular entrepreneurship
4. Green business model cycle
5. Renewable energy for green growth
6. Fish conservation zones for increasing aquaculture species

The challenges of these six subjects is the needed budget to create the curriculum, research, project implementation, and then green growth training that include publication and fieldwork practices in order to create and encourage a new generation to be green entrepreneurs and leaders, such as practitioners, activists, researchers, and project coordinators, after graduation.

- Participants of students

Students will be members of research and green project implementation teams in accordance with fieldwork. They will be learning new innovative experiences from academic work participation that will push them to learn how to work closely with the researcher, lecturer, and project coordinator, which inspires them to be concerned about the environment and how to solve environmental solutions

- How do we practice, skill, the operation system of students?

Students will not learn only in the class room but they also will learn in the field work practice, for example the project implementation on topic: Tree Seedlings Project and Demonstration of Ecological Afforestation for Non-Timber Forest Products, students will participate in the field work of tree nurseries, adding fugus into the root of the tree after 2 months and 5-month ages of the tree, the other project idea completion in Mekong Youth Innovative in the project topic "Biogas-production construction encouragement for farmers who have swine livestock in Sanasomboun district, Champasak province, Laos." Oxfam in Laos has established and provided funding for a project implementation, students will be learning how to install plastic biogas balloon plants in order to encourage them to learn more about green pig feeding.

Emerging insights

We would like to request financial support from an international foundation to encourage us to implement both research and projects in order to reach the sustainability development goal. If we need to improve our well-being, we need to support the well-being of the **community and also solve the environmental issue.**

4.10.3. Community

Current state of support towards green entrepreneurship and leadership

Recently, Champasasak University, has an international connection through the cooperation between the Faculty of Natural Science, Faculty of Agriculture and Forestry, and Faculty of Economics and Management, Champasak University (the "Local Organization") in connection with a project financed by the Global Environment Facility/Small Grants Programme ("GEF SGP"), then our project team will provide 8,750 trees that we will be inoculating the fungus into the root the trees to other officials and communities. Through the cooperation between the Faculty of Natural Science and the Faculty of Economics and Management, Champasak University has won the project idea completion in Mekong Youth Innovative in the project topic "Biogas-production construction encouragement for farmers who have swine livestock in Sanasomboun district, Champasak province, Laos." Oxfam in Laos has established and provided funding for a project implementation. " The project will be implemented between February to May of 2022, it will provide technical, equipment and material to install 9 plastic balloon biogas plants to community. Champasak University, the Faculty of agriculture and forestry, and the Department of animal science will provide low priced pigs to the community.

To motivate the community to be concerned about environmental problems, we need to support project financing implementation in the community in order to create an awareness of environmental evaluation, the value of nature through entrepreneurship, and green leadership in all stages of operations.

The university and related departments have discussed the 'dissemination' of technical academics to the community by training and creating curricula to make the community aware of the values and benefits of green entrepreneurs and leaders.

Challenges and expectations

The ideological culture of the community is not taken to the value of green entrepreneurship and leadership, thus making the technical operation still a hindrance.

The community expects from the university and related departments, especially technical cooperation, training, entrepreneurial skills development, activity coordination, creating a curriculum for students in the community.

Establish collaborative structures between universities, communities, businesspeople, and government agencies to facilitate the development of green entrepreneurship in a systematic manner, such as a collaborative research center to solve problems effectively, improve the structure of small and medium-sized enterprises to focus on green.

Emerging insights

In order to improve the well-being of the community and environmental evaluation, we need to add 6 subjects to the courses: 1. Green marketing production and operation; 2. Green entrepreneurship and leadership; 3. Bio-circulatory entrepreneurship; 4. The cycle of green business models; 5. Renewable energy for green growth; 6. Aquaculture species expansion through fish conservation zones. That will incorporate both getting experiences with classroom and fieldwork into the course, and the students will have the opportunity to **help and support society and their community both financially and technically.**

4.11. Savannakhet University (SKU)

4.11.1. University and faculty

Main findings

- Few numbers of students experienced the knowledge and exposure of entrepreneurial and leadership courses/workshops.
- Most students had attended the training/workshops provided by the university/faculty.
- In terms of motivation, both extrinsic and intrinsic factors are very likely affecting students to start a venture/project addressing societal and environmental issues.
- A lack of knowledge is a primary impediment to starting their own green business, for students.
- A need from university support structures is the most critical source of support when starting students' own green business.
- Some challenges faced are facilitation from related organizations.

Current state of support towards green entrepreneurship and leadership

- How far has the university/faculty supported green entrepreneurship and leadership?

It is agreed that there are some fairly extensive support structures from both university and faculty levels due to the fact that the ideas of green entrepreneurship is quite a new concept for lecturers. It is also suggested that the university as well as faculty should extend their academic collaboration with other green institution partners to provide more opportunities for capacity building.

- How central is the notion of 'green' being part of the university's/faculty's mission?

The concept 'Green' is becoming part of the university mission, as the university is aimed to be established as a green university in the central region of the country.

- What current projects/programs (if any) have the university/faculty been engaged in concerning green entrepreneurship and leadership?

Currently, the university is one of a consortium of the ANGEL project and SKU would like to take this chance to develop the curriculum and training relating to the green

entrepreneurship notion. The developed courses under this project activities will enhance lecturers' capacity building and students' abilities.

Curriculum and teaching staff

- How strongly is the notion of 'green' being part of the curriculum? In what course(s) does it appear?

There is a fairly extensive understanding of putting 'green' as part of the curriculum and teaching. It is noticeable that the concept of 'green' is pretty new for most of lecturers even though some of them had experienced it in attending workshops or training, The dissemination of the 'green' notion in business operation is rarely widespread. Some lecturers have inserted related green contents in some part of their lecturing hours and/or discussion during the class hours.

- How far has the university developed the teaching staff regarding green entrepreneurship and leadership?

One of the university's missions is to create a green university which means that not only the infrastructure itself will be environmentally friendly but the raising awareness of green entrepreneurship and leadership is also one key activity for the institution. Faculty members are encouraged to apply and attend the workshops/trainings or relating faculties and are welcome to create proposals for training programs for their students.

- What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, etc.)

Obviously, most students were advocates of a green ecosystem. They were assistants to their teachers in training/workshops. However, they were trained to be inspired for developing their own business in the future.

Challenges and opportunities

- What challenges do the university/faculty face in strengthening the commitment to sustainability?

Lack of skilled personnel in the field of green entrepreneurship and leadership is one issue hindering sustainability.

- What opportunities can the university/faculty seize to strengthen its commitment to sustainability?

Promoting the cooperation and creating business linkage with local and regional companies, for example, companies from the Savan-Seno special economic zone will strengthen the faculty/university.

4.11.2. Students

Current state of exposure towards green entrepreneurship and leadership

- How familiar are the students with the concept?

Most of students are familiar with the concept of entrepreneurship but not about the green aspect, it is quite new for them because they have only some course contents relating to entrepreneurship.

- How did the students know about the concept? What sources did they refer to?

Most students gained knowledge about entrepreneurship through their courses and the contents mostly related to the natural environment.

- How far have the students received course materials related to green entrepreneurship and leadership?

Currently, there were some initiatives in doing business and services, and environmental protection practices were offered at their faculty via trainings/workshops.

Intention and action

- How strongly did the students commit to green entrepreneurship and leadership?

Students were eager to start their own venture with a social and environmentally friendly commitment in the future. They aim to do green business and trade.

- What actions have the students taken in the area of green entrepreneurship and leadership?

They are willing to collaborate with the university in starting their own green business as a partner of the university and the university can help them to start it.

- What role(s) did the students want to take in the green ecosystem? (e.g., researcher, practitioner, advocate, activist, etc.)

The training support provided by the university would help them to initiate their own business.

Challenges and expectations
Students state that some traditional styles of working and business regulations in some local organizations might hinder the ease of processes in running business.

4.11.3. Community

Main findings
- Community has extensive engagement with university.
- Community needs to seek wide support from national/local agency for SMEs.
- Support from the university should be increased.

- Some challenges are the COVID-19 pandemic, unpractical regulations for the current social economic development situation, a low rate of awareness of green entrepreneurship and related business regulations.

Current state of support towards green entrepreneurship and leadership

- How far has the community been in touch with the university regarding green entrepreneurship and leadership? In what forms (if any)?

The Community has extensive communication with the university when they need academic support, offer internship venues to students, and they attend the trainings/workshops/orientations provided by the university.

- How central is the notion of 'green' being part of the community's mission and strategy?

Most of the community do not really understand the concept of 'green', but they just assume that it relates to environmentally friendly. So when they run a business, it is required to take environmental issues into account.

Challenges and expectation

- What barriers does the community face in strengthening its commitment to sustainability?

Due to a lack of understanding of the concept of green, the community needs to learn more about the concept, its process and how to run a green business and lead their own business with success. Moreover, the COVID-19 pandemic, unpractical regulations for current social economic development situation, low rate of awareness of green entrepreneurship notion and related business regulations are challenges.

- What form of support do the communities expect from the university regarding sustainability?

It is expected that the university could provide more academic support and services regarding green entrepreneurship.

5. Conclusion

The gap analysis of 12 ASEAN partner universities shows that there is a variety regarding which universities engage in green entrepreneurship and leadership. However, the study also shows some common patterns. While support structures and policies at the university level exist, these are not readily articulated into a strong focus at the faculty level.

From the students' perspective, there is a high level of intention to engage in green ventures, although they still lack the knowledge and experience in green entrepreneurship. Students are aware of the need for transformational leadership to make change happens. From the survey, we found that students and the community mostly need mentoring/coaching to support their venture, and the university support structure is among the most sought-after sources of support.

These findings necessitate establishing specific capacity building for the ASEAN partner universities to guide key stakeholders in integrating environmental orientation with social and financial goals.

In conclusion, the gap analysis suggests that building and enhancing each partner university's competence and support structure on green entrepreneurship and leadership is urgently required.

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