INNOTAL

Integrating Talent Development into
Innovation Ecosystems in Higher Education

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ENTREPRENEURSHIP, INNOVATION & STUDENTS TALENT DEVELOPMENT IN AGRICULTURE AND FORESTRY UNIVERSITY, NEPAL

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Screening report on the university's capacity to promote graduates' employability and develop students' talent through innovation

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Introduction

Context

The author met with the University representatives to discuss the purpose and use of the screening report. Particular care was taken to work through the scorecard to ensure clarity of understanding, in particular to ensure shared understanding of terms that might be unfamiliar to colleagues working outside a European Union context. Given the requirement for basing the conclusion on supporting evidence, a drop box was established to enable partner country colleagues to provide supporting documentation. It has been agree that in the absence of supporting documentation the author will be working on the presumption that mechanisms are not in place.

Follow up guidance was issued electronically requesting partner country Universities go question by question through all scorecard indicators. Where the answer is yes to anything, partners are expected to supply supporting paperwork or a web link to where it can be found. So for example:

- Support for entrepreneurship and entrepreneurship education are included in the mission or core strategy of the university (Yes/No) – Requires sight of the Mission or a copy of the strategy

- There is an institutional strategy on entrepreneurship education (Yes/No), please describe, and if there is one, can I please supply a copy of it.

In meeting discussions it became evident that Partner Country colleagues were keen to emphasise that as a result of participation in the Project's First Collaborative Workshop they would begin immediately implementing new ideas. They further indicated that in some areas of the score card there are existing planned activities.

Colleagues were therefore encouraged to also highlight planned activities. Equally, they were encouraged not to over-state intentions given the importance at this screening stage of ensuring that this exercise accurately reflects where they are at as of right now rather than where they plan to be, as this will help down the line with development of a strategy both for their own institution and nationally.

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Scope

This Report is produced in the frame of the project's first stage, which is focused on preparatory research and understanding the context in which further capacity building activities shall take place. The purpose is to provide an external assessment of:

- University capacity to provide entrepreneurship education across various disciplines
- University capacity for innovation
- University capacity for promoting graduates' employability and developing students' talent

The reports aims to provide a clear picture of Agriculture and Forestry's University starting conditions and capacities related to graduates' employability, innovation and talent development. The report has been developed on the basis of the scorecards developed in the frame of the project.

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Profile of the university

Establishment

The **Agriculture and Forestry University (AFU)** was established in Rampur, Chitwan, Nepal in 2010. It was founded following the merging of Rampur Campus, Institute of Agriculture and Animal Science (IAAS) and Forestry Campus, Hetauda of the Institute of Forestry of Tribhuvan University of Nepal.

In 2016 AFU created the College of Natural Resource Management, a constituent college at Purunchaur Kaski, Pokhara. Also in 2016, AFU established an Agriculture Science Center (ASC) in Palung.

Further developments in the academic year academic year 2017/18 include:

- Establishing the College of Natural Resource Management, Marin Kapilakot, Sindhuli.

- Nine other constituent colleges are in the pipeline for the establishment of B.Sc. Agriculture and B.Sc. Forestry program. AFU has planned to establish B.Sc. Agri. Engineering, B.Sc. Horticulture and Master in Dairy Technology in the near future.

The University is currently in the process of establishing 3 other ASC at Kalikot, Gorkha and Dhading. These centres are being created in order to demonstrate new technologies to farmers and act as the platform for training and research activities.

This is a new University that is growing, expanding its range of activities and with a strong commitment to 'civic engagement.' This is primarily delivered through extension activities. There is a strong recognition of the nexus between research excellence, teaching excellence and engagement (extension).

Mission and Values

The Mission, as contained in the Strategy 2013-2023, is as follows:

"AFU is committed to improving the quality of life of the people of Nepal through agriculture, including livestock and fisheries, and forestry education, research and extension."

The mission as articulated by partner country colleagues in their response is:

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"to produce competent manpower to promote education, research and development in agriculture, veterinary, fisheries, forestry and allied disciplines."

This reflects what is contained in the 'About Us' section of the University website. However clear articulation of Mission and Governance is not available online: http://www.afu.edu.np/about-us

The 2013-2023 strategy contains clear articulation of a Vision of:

"being a pre-eminent University for building Nepal into a food secure, economically vibrant, environmentally sustainable and socially equitable nation"

- This demonstrates a clear commitment to **Civic Engagement**. This commitment is further reinforced by a set of core values that articulate a long-term commitment to an enabling teaching environment built on a nexus between teaching, research and civic engagement.
- In its commitment to **Excellence**, the University makes a clear reference to teaching, research and 'extension activities' that address national and global challenges and opportunities.
- There is a commitment to **Inclusive Development**. This is in part related to embracing diversity. In part, in relation to this project, there is explicit reference to a focus on social justice and inclusive development which might in themselves afford opportunity for student engagement in innovation and enterprise activities.
- A commitment to local and global **Partnership** is focused on identified themes including agriculture & rural development; environmental management and food security. Again, the nexus between civic engagement, research and teaching is explicitly stated.
- There is explicit reference to **Innovativeness** with a focus on research and 'extension' activities. Again, the link to civic engagement is strong, with specific reference to "innovations that advance solutions to complex problems facing society."

Strategic Objective 3, which relates to Excellence in Extension, and states:

"Strengthen a two-way (research outcome extension and possible research problem as feedback) extension service."

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There is a commitment to developing extension capabilities as follows:

- Establish functional system for extension
- Prepare outreach resources for extension services
- Increase skilled Human Resources for extension services
- Establishing Science Centres in different regions
- Establish feedback system for research and extension linkage.

Given that the term 'extension' has a particular meaning especially within Agricultural Universities, more information will be required to fully understand its meaning and application within the emerging strategy created as an output of this project. In a narrow sense, agricultural extension is the application of scientific research and knowledge to agricultural practices through farmer education. Generally, agricultural extension can be defined as the "delivery of information inputs to farmers." In the broader context of the University's strategy document, the term is taken to mean the application of teaching and research to a broader knowledge system.

- **Student participation in an entrepreneurial innovative ecosystem** is not explicit but the strategy provides a sound platform for a system to be built. For example, in Strategic Objective 1, which relates to research, there is a 'possible action' to train students to enable them to undertake research and to support this with grants and logistical support.

There is no explicit reference to an Innovation or an entrepreneurial ecosystem and no mention of student (talent) development as an intrinsic part of any ecosystem.

Governance

The University is a state-owned autonomous institution in receipt of core funding provided by the Government via the University Grant Commission.

Governance is overseen by the Vice-Chancellor's office with responsibilities devolved to various Directorates, including one for extension services; a Dean's office and academic departments.

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Size of the university

The university has 107 faculty members and 255 support staff. Current student population consists of 1883, including 1471 undergraduate students, 367 M.Sc. students and 45 Ph.D. scholars in different disciplines. Nearly 35% of the students are female. No age profile is provided. The student numbers are believed to represent full time students with no explicit reference made to part-time employed students.

Role of the university in its region (as perceived by the university itself)

The strategy provides the 'ultimate goal' in this respect:

"to contribute to national development through human resource enhancement for agriculture, forestry and related fields, and through high impact research and research-informed extension and community education. AFU commits itself to achieving excellence across its three major functions – teaching, research and extension – and proposes operational objectives and actions that promote and reinforce excellence and impact."

The University places great emphasis on excellence in teaching, research and extension. This focus on extension is central to its commitment to civic engagement and provides a platform from which to seek to grow the impact of this project.

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Capacity to provide and promote entrepreneurship education

Performance in the area of entrepreneurship education

2.1. Relative number of bachelor/master/post-graduate programs offering entrepreneurship courses/training = [Number of bachelor/master/post-graduate programs offering entrepreneurship elective courses/training] / [Total number of students in bachelor/master/post-graduate programs] (%)

AAFU provides the following assessment of student showing programmes which are described as being about entrepreneurship:

Bachelor programs	20%
Master programs	5 %

However, these courses might be better described as business management-related, in which students work to gain an overview of the foundational skills and concepts needed to succeed in business management. This type of degree works by breaking down the operations of business with an almost scientific-perspective in order to teach students the proper techniques, skills, and concepts needed to successfully manage a group of people within a business and to help steer a business towards success. Students in this type of programme will typically work to gain a deeper understanding of concepts including economics, accounting, finance, marketing, management, organisational leadership, and more. Through programmes of this nature, students may spend time learning about entrepreneurship but it will not be the central focus of the degree programme.

The study of entrepreneurship is more of a ‘creative’ degree where students develop concepts and ideas for new businesses while learning the skills needed to start a new business and the common pitfalls that new businesses face. Students will focus mainly on what it takes to get a new business off the ground. They will learn how to network, gain funding for their new idea, sell their idea, and form it into a fully-fledged standalone business.

A broader view of Entrepreneurship Education is that it can help to develop transversal skills in a broad sense - it is about how to develop a general set of competences applicable to life and work; not simply about learning how to run a business. In this context being entrepreneurial may mean:

- Being 'intrapreneurial' as an employee,

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- Being socially entrepreneurial to create social change or find solutions to social problems,
- Being entrepreneurial in the sense of starting a new venture or business (for social aims or for personal profit).

It is relevant to all forms of learning, education and training to support the development of entrepreneurial attitudes, knowledge and behaviours - with or without a commercial objective.

In summary, whilst the score card shows undergraduate offering of entrepreneurship education, it is the author's conclusion that the focus is rather more on business and management skills, perhaps with an element of enterprise in the context of starting a business. The opportunity exists therefore to explore further a holistic approach to the development of entrepreneurial education within the University.

There are the activities of the Agriculture Science Centers and business elements to course offerings. In addition the 'extension' activities are given high priority. However on the basis of an understanding of entrepreneurship education as articulated above, the assessment is that there is opportunity to explore development of enterprise programmes and innovation education and to work to explore any potential to develop existing programmes such that a focus on being entrepreneurial and being innovative is core to development and delivery.

2.2. Relative number of students in bachelor/master/post-graduate entrepreneurship programs = [Number of students in bachelor/master/post-graduate entrepreneurship programs] / [Total number of students in bachelor/master/post-graduate programs] (%)

AAFU provides the following assessment:

Bachelor entrepreneurship programs	100 %
Master entrepreneurship programs	5 %
Post-graduate entrepreneurship programs	0 %

In view of the previous discussion, the author considers that the relative number is 0%

2.3. Relative number of staff teaching entrepreneurship courses = [Number of staff teaching entrepreneurship courses] / [Total number of **staff**] (%)

The current base is assessed as being 3%. There is some use of industry partners to deliver elements of programmes. Academic colleagues also working in industry -

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current base is assessed at 5%, though in the development of the INNOTAL capacity building strategy the nature of that work will require further consideration.

A small number of staff are committed to entrepreneurship courses. The author has taken a base figure of 3 to highlight that there is some activity. This activity appears to have limited structured support. An examination of the specialisations of the academic team shows no member of the academic team has entrepreneurship as their primary specialization.

It is noteworthy that a significant number of staff members do work outside of the University (5%) and so this and a better understanding of research extension activities will assist in the identification of academic colleagues who are / or would wish to engage with entrepreneurial teaching.

2.4. Relative number of entrepreneurship-related research projects = [Number of entrepreneurship-related research projects] / [Total number of research projects] (%)

AAFU University colleagues have self-assessed this at 0%. Our assessment is that this is correct. There is evidence of undergraduate placement activities which appears to offer a base for further development. There is no such activity at present with postgraduate learners which would appear to represent a very significant opportunity.

2.5. Relative number of bachelor/master/post-graduate entrepreneurship courses in which case studies or study visits are used to enhance learning = [Number of bachelor/master/post-graduate entrepreneurship courses in which case studies or study visits are used to enhance learning] / [Total number of bachelor/master/post-graduate entrepreneurship courses] (%)

0%

There is no evidence that case studies are used to support entrepreneurship teaching activities. Likewise pedagogical strategies to promote entrepreneurial learning are not evident. There is indication that some related ‘soft skills’ are measured, though not all. In developing the INNOTAL capacity building strategy it will be necessary to undertake an analysis of programme documentation at both programme and module levels.

Entrepreneurship-supporting policies and culture

2.6. Support for entrepreneurship and entrepreneurship education are included in the mission or core strategy of the university (Yes/No)

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The Strategy of the University does not make direct reference to entrepreneurship or innovation. It is implicit in the mission and values and can be aligned with existing objectives. There is therefore a strong base on which to build.

2.7. There is an institutional strategy on entrepreneurship education (Yes/No), please describe

There is no institutional strategy on entrepreneurship education evident. However, there is a sound base on which to build it with the rapid recent developments in particular of the Agriculture Science Centers and the creation of a Master Degree level business management programme

"AFU has a strategy opening Agriculture Science Centers (ASCs) in different regions/state of the nation. Upon this strategy, one ASC was established in last year in the central part of the country and other two ASCs are going to be established soon in the western and the far-western region of the nation. The main aim of these ASCs is to disseminate the research findings generated from the university and to carry out outstation research."

2.8. The university involves (officially or unofficially) employers or labour market institutions in:

University colleagues have indicated that employers or labour market institutions are involved in the key areas:

- curriculum development: Yes
- teaching: Yes
- participation in decision-making or consultative bodies at institutional level: Yes

A review of the University strategy and the website do not support this but that is not to say it is not there. A request for additional information has been made seeking policies, plans or programme documents that will illustrate the extent and nature of involvement. The evidence that is being sought is the extent to which industry including for example, the farmers, is engaged with University decision-making, curriculum development and teaching. At present there is no evidence to indicate this is happening at the institutional level.

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That said, the work in particular of the ASCs and their focus on imparting vocational training to famers, plus the strong commitment to extension and regional development, indicates a strong connection with industry and therefore an excellent platform on which to build further work in the areas of entrepreneurship and innovation.

The University Strategy 2013-2023 implies that this is an area that the University itself wishes to further develop, in particular under Strategic Objective 3.

Human resources capacity for entrepreneurship education

2.9. **Relative number of staff that has participated in entrepreneurship training** = [Number of staff that has participated in entrepreneurship training] / [Total number of staff teaching entrepreneurship courses] (%)

University colleagues identify 3%, which equates to about 3 academic colleagues. It will be necessary in the development of strategy to analyse in greater detail the nature and extent of this training. This is particularly noteworthy in the context that 0% entrepreneurship training to students is provided at postgraduate level and that the University self-identifies 100% participation at under-graduate level. A useful part of this analysis and strategy development would likely require development of shared understanding of entrepreneurship / entrepreneurial learning.

2.10. **Relative number of industry or business practitioners involved in delivering entrepreneurship courses in bachelor's/master's/post-graduate degree** = [Number of practitioners involved in delivering entrepreneurship courses in bachelor's/master's/post-graduate degree] / [Total number of faculty teaching entrepreneurship courses in bachelor's/master's/post-graduate degree] (%)

The self-assessment is 10% of teaching staff have been involved. Our assessment is that this figure is overestimated given the earlier comment on courses with an element of business & management versus entrepreneurship training. We have made an assessment of 0% though noting that a number of academic colleagues do additional work outside of the University which may mean a small number have strong entrepreneurial backgrounds.

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2.11. Relative number of university employees who also have (temporary) work contracts in industry/business = [Number of university employees who also have (temporary) work contracts in industry/business] / [Total number of faculty in bachelor's/master's/post-graduate degree] (%)

An assessment based on self-assessment (the scorecard) indicates 5% which is around 5 colleagues. This is a significant number. The nature of that work and its relevance to entrepreneurship and innovation is worth further consideration as it provides a cadre of people with networks and experience that may be worth capturing.

2.12. Existence of opportunities for staff mobility (including adjunct faculty) across the university-business divide (Yes/No)

The University has identified that these opportunities exist. This is supported in this assessment, especially given the emphasis on research extension and the work of e.g. the ASCs. This appears to represent a potential opportunity in terms of further developing the University's work on entrepreneurship and innovation.

Support structures and linkages facilitating entrepreneurship education

2.13. Existence of university entrepreneurship centres supporting university-business relations and entrepreneurship in general (Yes/No)

There is considerable investment in and commitment to development of centres connecting research activity with the business population. This is most particularly evidenced by the ASCs and the investment in a Master's Degree in Agricultural Business Management. There is limited evidence of activities leading to significant impact (in terms of entrepreneurship e.g. spin-outs; knowledge transfer). Again in developing a future strategy, the nature and impact of the work undertaken requires further analysis to determine the extent to which they can be accurately described as entrepreneurship centres. This assessment would require a more detailed and comprehensive understanding of the use of the term entrepreneurship centre.

However, this is an excellent platform on which to build. Given the level of investment and the rapid rate of development, this appears to be a very significant opportunity.

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The University strategy 2013-2023 also makes clear commitments in this area although it does refer to 'possible actions' which does not imply a full commitment. Our assessment is that there are centres in place and that they offer significant opportunity for further development in pursuance of the objectives of this project.

2.14. Provision of support to bachelor/master/post-graduate students for access to internship and/or placement schemes (Yes/No)

AFU indicates that this is offered at under-graduate but not postgraduate level.

The examination of strategy, the review of programme offering online and the review of the website show limited reference to this element of the University offering.

Our assessment is that this is an area worth of further analysis and development in relation to a strategy for engaging talent as part of the University Innovation and Entrepreneurial Ecosystem.

Adaptation of teaching methods to facilitate entrepreneurship education

2.15. Real case studies provided by business/enterprises are included in entrepreneurship teaching (Yes/No)

Real business cases are not presently a feature of teaching

2.16. A competence-based approach is used to assess the results and impact of studies (Yes/No)

A competence based approach has not at present been adopted.

2.17. The university monitors the development of students' soft skills (leadership, teamwork, communication, etc.) (Yes/No)

The University identifies some but not all of these 'soft' transversal skills as being monitored. There is limited evidence that the sorts of actions expected are incorporated at institutional level. At programme and module level this is an area worth further analysis in the development of a strategy. An exercise to work through course documentation and teaching practice would be valuable.

In relation to the AFU strategy, there is reference to student involvement with extension as a possible action, therefore the emphasis is currently on soft skills related to research and research extension. In addition, it might be possible to re-imagine

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beyond the traditional ideas of soft skills what this might mean in an entrepreneurial context and a local context. It might for example be expanded to include drive, ambition, resilience, change management, as well as confidence, presentation, communication, teamwork, etc.

Further development as per the box below would be beneficial in the context of the development of a future strategy.

- Develop or adopt guidance and standards for entrepreneurship education
- Find ways to address real-world challenges in the teaching process
- Develop specialized internship programs in start-up projects, technology transfer offices, venture capital firms, and industry
- Encourage draft patent applications for student inventors
- Create opportunities for students to meet and learn from experienced young entrepreneurs
- Create opportunities for competitive opportunities for students:
  - business plan competitions
  - seed funding and technical support
  - prizes
  - free participation in business incubator for period of time
  - combination of seminars, courses, and mentorship to assist in advancing student ideas through stage-gated business plan competition

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Innovation capacity and university-business interactions

Performance in the area of innovation and university-business interactions

3.1. R&D expenditures as a share of total university's budget = [R&D expenditures - local currency] / [Total university budget - local currency] (%)

R&D spending is identified as 1% of income. Overall budget figures have not been made available.

Budget constraints do represent a challenge, further confounded by identified staffing shortages across all key areas. It is unlikely therefore that this budget will increase significantly. Alternative approaches are therefore well worth consideration. This is likely to require exploring ways in which R&D activity can be increased without additional spending. This in turn makes exploration of student involvement, increased industry collaboration and the nature of current research activities worth further analysis as part of the ongoing development of strategy. For example some 60% of academic colleagues spend upwards of 50% of their time on research. This appears to represent a significant opportunity for further consideration.

3.2. Ratio of total grant funding and funding from external sources to full-time employed academic staff

Total funding was not made available at time of assessment. The ratio of grant funding from Government is very high as a proportion of total income with 5% of academic colleagues holding international grants. There are no industry research grants. The 5% grant funding is significant and provides a base on which to continue to build.

3.3. Relative number of spin-off firms supported by the university per full-time employed academic staff [Number of spin-off firms supported by the university] / [Total number of full-time employed academic staff] (%)

0%

3.4. Proportion of academic staff holding international and national research grants [Number of full-time employed academic staff at the university holding international and national research grants] / [Total number of full-time employed academic staff] (%)

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5%

3.5. Proportion of academic staff holding industry research grants [Number of full-time employed academic staff at the university holding industry research grants] / [Total number of full-time employed academic staff] (%)

0%

3.6. Number of weighted publications per full-time employed academic staff (averaged over the last 3 calendar years) [Average number of publications of full-time employed academic staff at the university over the last 3 calendar years] / [Total number of full-time employed academic staff] (%)

0%

3.7. Number of citations in Scopus and Google Scholar database per full-time employed academic staff (averaged over the last 3 academic years) [Average number of citations in Scopus and Web of Science database of full-time employed academic staff at the university over the last 3 academic years] / [Total number of full-time employed academic staff] (%)

The figure provided by AFU is 10%. This has not been verified but does seem overestimated given that AFU also reports 0% under "Number of weighted publications per full-time employed academic staff (averaged over the last 3 calendar years)"

3.8. Relative number of intangibles in the form of patents, licenses, copyrights, trademarks, policy recommendations, etc. per full-time employed academic staff [Number of intangibles in the form of patents, licenses, copyrights, trademarks, policy recommendations, etc. of full-time employed academic staff and the university] / [Total number of full-time employed academic staff] (%)

0%

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3.9. Support for innovation and regional development is included in the mission or core strategy of the university (Yes/No)

There is strong commitment to regional development and 'civic engagement.' There is no explicit focus on innovation, although such a focus is implicit in research and research extension activities. The focus on science centres is a major step forward and provides a solid platform for growth in this area.

3.10. There is an institutional strategy on innovation, innovation support or knowledge transfer to the external environment (Yes/No), please describe

Strategic Objective 4 seeks to directly address the desire to strengthen University support systems and includes 'possible actions' to develop support infrastructure which will greatly assist academic colleagues in their work.

Strategic Objective 3 focuses on research extension and seeks to strengthen research as a two-way process. Possible actions that relate include:

- Developing the organisational structure for 'extension' (in place)
- Establishing partnerships with external stakeholders
- Developing extension and training services
- Involving students in extension services

There are additional actions relating to equipment, resources, outreach and developing linkages.

In addition, the University has planned the work of ASCs to have clear knowledge transfer elements.

3.11. Implementation of research and research training planning and policy (Yes/No)

No

3.12. The University provides financial resources in the form of seed funding (Yes/No)

No

3.13. There is a clear IPR policy followed by the university in its relations with economic agents (Yes/No)

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No

3.14. Do the faculty attestation rules envisage rewarding of applied research for industry/local development (Yes/No)

Identified as being in place. No supporting documentation provided

3.15. Existing rules about modernization of curricula in view of new challenges, national priorities and business needs (Yes/No)

Yes. AFU appears very open to curricula modernisation and to responding to new challenges, national priorities and business needs. The educational offering is by its very nature focused on industry and regional needs aligned with national priorities. The challenge for this project will be to support institutional and curricula enhancements to this work with a particular focus on Innovation and Entrepreneurship.

Support structures and linkages facilitating innovation and university-business interactions

3.16. Existence of university structures facilitating links with industry and local community or structures in which the university is collaborating with external economic actors or the local community

University research laboratories (owned or shared with other entities)	Yes ☒ No ☐
Technological parks	Yes ☐ No ☒
Technology transfer offices	Yes ☒ No ☐
Incubators	Yes ☐ No ☒
Accelerators	Yes ☐ No ☒
Applied research centres	Yes ☐ No ☒
Research and development units	Yes ☒ No ☐

In development of a strategy for innovation and entrepreneurship further analysis will be required to agree on a shared understanding of the terms used and the nature of activities undertaken. The existence of research labs, a technology transfer office and R&D units offers a platform on which to build further development in relation to the project and its intended impact.

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3.17. Legal possibility for researchers to become engaged in research supported by industry (Yes/No)

Yes

Human resources capacity for innovation and university-business interactions

3.18. Proportion of students in bachelor's/master's/post-graduate programs involved in research projects (averaged over the last 3 academic years) [Average number of bachelor/master/post-graduate students involved in research projects over the last 3 academic years] / [Total number of bachelor/master/post-graduate students] (%)

The University team identifies 70%, which is not surprising given their academic nature. The remaining 30% are assumed to represent those in receipt of vocational education and training not requiring a dissertation. Reflection on the potential to generate research through vocational training may be worth further consideration. A more detailed examination of the nature of the student research undertaken will be necessary. On the basis of the wider responses provided, application of this research activity to industry-generated issues / challenges seems to represents a very significant opportunity.

3.19. PhD degree completions per full-time employed academic staff (averaged over the last 3 academic years) [Average number of PhD students at the university over the last 3 academic years] / [Total number of full-time employed academic staff] (%)

1%

It is worth noting that this is a new University with a growing PhD population and so this figure is at this stage artificially low. It is worth noting that 51 registrations in 2015/16 against 108 academic colleagues represents a projected figure closer to 50%

There is a growing base and one which again appears to represent a significant opportunity.

3.20. Proportion of PhD completions within planned schedule (averaged over the last 3 academic years) [Average number of PhD students, who defended their PhD thesis within planned schedule at the university over the last 3 academic years] / [Number of university PhD students, who defended their PhD thesis, and students, who were not able to defended their PhD thesis] (%)

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Nominal 1% assigned with 0% unable to defend. The figure is artificially low given the young age of the University and rate of growth.

In further developing an AFU University strategy for innovation & entrepreneurship aligned with the project aims, a number of additional areas of focus will be worth considering:

- Research and development priorities
- Student involvement in research projects
- Innovation culture at the university
  - research for solving real-world problems
  - engaging academic staff in innovation activities that correlate with their academic disciplines
  - comprehensive innovative process that incorporates technology development and commercialization efforts
- Rewarding faculty innovation and entrepreneurship
  - celebrating faculty achievements
  - updating tenure and sabbatical leave guidelines
  - supporting, rewarding, and funding the work of faculty members
- Public-private partnerships in which the university is engaged
  - sharing of best practices and new ideas for developing and commercializing new products
  - involving community leaders and local entrepreneurs in the development of technology and start-up companies
  - cooperating with foundations or NGOs
- Engaging with industry
  - collaborations aimed at obtaining research and technology development ideas, capital, and other types of support
  - licensing policy
  - long-term partnerships with large corporations
  - industry presence on campus
  - multi-disciplinary projects
  - internships with industry
- Supporting the university technology transfer function
  - technology transfer functions - hiring skilled staff, improving technical support to researchers, and increasing access to capital for researchers

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- licensing and start-up activity
- greater focus on the triple bottom line (environmental, social, and economic)

- Protecting intellectual property
  - strategies to protect intellectual property
  - connecting with faculty early in the R&D process to encourage them to file patent applications

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Student talent development policies

Capacity to attract and retain talent

4.1. **A marketing strategy for attracting talented students exists at the university** (Yes/No)

No

4.2. **Share of foreign students in total number of students enrolled** [Number of foreign bachelor/master/post-graduate students enrolled at the university] / [Total number of bachelor/master/post-graduate students at the university] (%)

0%

4.3. **Share of students that started work in their field of study within 6 months after graduation/or board exam** [Number of students that graduated during last academic year and started work in their field of study within 6 months after graduation/or board exam] / [Total number of graduated students during last academic year at the university] (%)

20%

4.4. **Student-teaching staff ratio** [Total number of students] / Total number of faculty and staff involved in teaching]

1:17

4.5. **Existing students' enrolment and services office** (Yes/No)

No

4.6. **Existing quality management system for academic excellence** (Yes/No)

Yes

4.7. **Existing options for part-time/distance /flexible learning at the university** (Yes/No)

No

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Student welfare support

4.8. Existing strategy for residential environment improvement, including dormitories for students, active student welfare office, sport facilities (Yes/No) – please specify

Yes. AFU provides residential accommodation for around 70% of its students.

The University has a dedicated student welfare directorate known as the Directorate of Student Welfare (DSW). Its role is to provide a positive student experience in relation to sports, foods, health, scholarship, security and other related services.

4.9. Existing health service at the university premises (Yes/No)

Yes.

4.10. Share of approved applications for university dormitories or for provision of support for student accommodation [Number of approved applications of bachelor/master/post-graduate students for university dormitories or for provision of support for student accommodation] / [Total number of applications for university dormitories or for provision of support for student accommodation submitted by bachelor/master/post-graduate students at the university] (%)

70% Undergraduate and 60% of Master's students

4.11. Existing support service for reducing debt load of students (Yes/No)

No

4.12. Share of students who receive financial support (scholarships, student loans, etc.) [Number of bachelor/master/post-graduate students who receive financial support] / [Total number of bachelor/master/post-graduate students at the university] (%)

20% undergraduate

20% Master's Degrees

4.13. Existing options for legal advice for students (Yes/No)

No

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Capacity to attract and retain student talent from disadvantaged groups and the group of non-traditional learners

4.14. Share of mature student entrants in total number of students enrolled [Number of mature (over 29 years of age) bachelor/master/post-graduate student entrants enrolled at the university] / [Total number of bachelor/master/post-graduate students at the university] (%)

3%	Undergraduate
20%	Master
90%	Doctoral

4.15. Share of students with disabilities in total number of students enrolled [Number of bachelor/master/post-graduate students with disabilities at the university] / [Total number of bachelor/master/post-graduate students at the university] (%)

Overall just under 2%

4.16. Existing specialized support for disadvantaged groups of students (students with disabilities, mature students, minority groups, etc.) (Yes/No)

No

4.17. Existing built environment with universal design for students with disabilities (Yes/No)

No

4.18. Existing adapted teaching process for disadvantaged students (Yes/No)

No

4.19. Existing adapted assessments and examination process for disadvantaged students (Yes/No)

No

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Performance in developing student talent

4.20. Share of students engaged in practicing entrepreneurship skills (e.g. teamwork, leadership, project management, business plan development and competitions, idea competitions for solving community and social issues, elevator pitch contests, public speaking, network creation) [Number of bachelor/master/post-graduate students engaged in practicing entrepreneurship skills at the university] / [Total number of bachelor/master/post-graduate students at the university] (%)

By the University's own assessment: some 40% of undergraduate students and some 10% of Master's students. There is 0% engagement by doctoral students. This requires a more comprehensive analysis in development of any strategy related to the impact of this project. Recommendation is made earlier in this report for analysis of what constitutes entrepreneurship education, the bases on which it operates plus nature and content. This would best be done at institutional, programme and module levels.

4.21. Share of students who participated in internships in professional settings [Number of bachelor/master/post-graduate students who participated in internships in professional settings] / [Total number of bachelor/master/post-graduate students at the university] (%)

At Undergraduate level the University cites 100% engagement with internships. No reference is made on the University website to internships and they do not feature in the 2013-2023 strategy. At a wider level there is no tracking of employment destination (question 4.37) and a cited employment rate of 20% within 6 months after graduation/or board exam (question 4.3). This will require further analysis and understanding to assess what is meant by an internship. A 100% rate of undergraduate internship would seem to offer very significant potential in terms of building talent development.

At Master's and Doctoral level there is 0% internships. Given the stated 100% at undergraduate level this requires more understanding. Engagement of postgraduate research and teaching with work based experience would seem to represent a very significant opportunity to harness the talent of those studying for higher degrees.

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4.22. Share of students included in coaching/mentoring programmes [Number of bachelor/master/post-graduate students included in coaching/mentoring programmes at the university] / [Total number of bachelor/master/post-graduate students at the university] (%)

0%

4.23. Share of students who participated in study tours (domestic and/or international) [Number of bachelor/master/post-graduate students who participated in study tours (domestic and/or international)] / [Total number of bachelor/master/post-graduate students at the university] (%)

100% Undergraduate

20% Master's

Again this high participation rate does appear (along with use of internships) to represent a high degree of industry engagement and runs counter to low level use of case studies.

Use is focused on undergraduates. The reason for low participation at Master's level requires more analysis.

Again this indicated (but unverified) level of engagement appears to offer a platform on which to build talent development into innovation and entrepreneurial ecosystem activities.

Policies/structures for developing student talent

4.24. Public financial support is provided to (partially) cover the costs of practical training (Yes/No)

No

4.25. Existing policy/structure in support of student talent development (e.g., initiatives for business/product development, local and/or global community partnership, arts-based ventures, etc.) (Yes/No) – please specify

No

4.26. Existing dedicated place to showcase and collect innovative ideas from students, staff, faculty, community members (Yes/No)

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No

Empowering students as stakeholders in university governance

4.27. Student participation in official decision-making bodies at the university (e.g. Academic Council, Department Council, Student Council, etc.) (Yes/No) – please specify

Yes. Student participation in Senate and Student Council; student involvement with Directorate of Student Welfare.

4.28. Existing clear and transparent procedures for student involvement in decision-making bodies at the university (Yes/No)

No

4.29. Students are expert members of quality assurance bodies at the university (Yes/No)

No

4.30. Students are asked to provide information (e.g. through surveys) on the following core aspects of student experience:

- design of the curriculum No
- quality of the teaching No
- student learning No
- assessment methods No
- student resources available to support them No

4.31. Students are asked to provide information (e.g. through surveys) on additional aspects of student experience:

- student support services No
- university social life No

4.32. The information about quality assurance (procedures, schedules, results) is published and available to students (Yes/No)

No

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4.33. Motivation for student involvement with quality assurance:

- Monetary compensation — No
- Credits — No
- Other types of motivation — None

4.34. Training and support materials/database/web portal etc. about quality assurance, are provided to students (Yes/No)

No

4.35. Events (briefings, discussions, quality forums) are organised to inform students about the practice of quality assurance (Yes/No)

No

Supporting students' careers

4.36. The university monitors the career paths of former students (Yes/No)

No

4.37. The university carries out or uses student and graduate surveys, where students and/or graduates provide details on their transition to the labour market (Yes/No)

No

4.38. Career guidance is available throughout the whole student lifecycle (Yes/No)

No

4.39. Career guidance is available during certain stages of the student lifecycle (Yes/No) – please specify

Professors provide individual guidance on career paths and further study based on the knowledge of the field and market. This is not available to all and is dependent on the Professor.

4.40. Career guidance is available to all students (Yes/No)

No

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4.41. Career guidance specifically targeted at disadvantaged students is provided (Yes/No) – please specify

No

4.42. Career guidance services are provided for graduates/alumni (Yes/No) – please specify any eligibility period

No

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Conclusion

AFU is a relatively new university which is expanding rapidly. There is a clear focus at the institutional level to teaching excellence, research excellence and extension.

Extension is recognised as a vital component of a tri-partheid nexus.

There is a solid base to build on, most particularly through the expanding science centres, vocational training offerings and strong sectoral / vocational focus. Development of the new Master's degree in agricultural business management is further evidence of a commitment to curriculum innovation.

A distinction is made in this report between business studies and entrepreneurship. There appears to be great potential to build on existing work to develop entrepreneurial learning with students (and academic colleagues) and talent development, both of which are central to the University's efforts to build its innovation and entrepreneurial ecosystem.

There will be limits, notably resources as evidenced by the shortfall in academic colleagues in key areas. However this only serves to reinforce the potential significance and impact of this project. Realigning work practice and learning practice such that entrepreneurial learning as a central focus would potentially lead to increased impact without recourse to additional resources. Two key examples are used to support this assertion:

- The high proportion of academic colleagues spending over 50% of their time on research.

- The very small proportion of Master's degree and doctoral student engagement with industry / social challenges.

Research, entrepreneurial teaching and teaching built around solving industry / societal challenges would appear to offer potential to increase the relevance of teaching; increase conversion from research to development; attract external funding and so on.

It is our conclusion that this project has potentially very significant impact and should focus on talent (student and teacher)

- Entrepreneurship
- Entrepreneurial learning
- Innovation

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- Innovativeness

It is recommended that these themes into policies, processes and practices are integrated at the institutional, programme and modular level.

The University starts from a very low level in terms of activities supporting students' careers and student participation in university governance, both of which are essential elements of talent development. We believe this underdevelopment has to do with the fact that this is a new university. The University is advised to use this project to collect good practices from other universities in Europe and Asia and develop strategies to address these two areas to the extent possible considering regulations and resource constraints.

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Capacity Building in Higher Education

Integrating Talent Development into Innovation Ecosystems in Higher Education

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