UASiMAP

Regional Engagement of Universities of Applied Sciences

National Report Flanders, Belgium

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UAS in Flanders

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Introduction

The regional engagement of higher education institutions has been an important theme that has been researched extensively with the results published in a wide range of literature. Some authors emphasize the need for a more prominent role for professional higher education (PHE) in the development of regions (e.g. Foray et al., 2012; Hazelkorn & Edwards, 2019), and also advocate the involvement of the UAS in the development of the regional strategies (Foray et al., 2012, etc.).

This report presents one of the key outputs from the ERASMUS+ project Mapping Regional Engagement Activities of European Universities of Applied Sciences (UASiMAP). The report presents the situation of Universities of Applied Sciences (UAS) and their regional engagement in Flanders (Belgium). The purpose of this report is to present important analytical data and explain the present situation, evolution, and trends of development of the Professional Higher Education sector with a focus on the UAS. The report provides a qualitative overview of the variety of UAS regional engagement in the country and also presents several examples of good practice in this important area of activity.at a local level. The report also presents the perspectives of internal and external stakeholders' groups regarding the different activities and forms of regional engagement; institutions' contribution to society and the regional community and explores currently underutilised capacities and possible further development of regional engagement. Discussion with stakeholders has also addressed the benefits of regional engagement indicators, appropriate approaches to the measurement of these, and how such indicators could inform self-evaluation.

The collection of national reports, prepared by the project partners, demonstrates the variety of the European Professional Higher Education sector and also provided the background for partner's discussion on the main aims of the project, which are to develop a self-reflection tool that will measure regional engagement of universities of applied sciences (UAS) and support the development of their further strategies.

1. National context of the Universities of Applied Science

In Belgium, the three **communities[1] are responsible for education**, with the exception of three competences which remain a federal matter:

- the determination of the beginning and the end of compulsory education,
- the minimum requirements for the issuing of diplomas,
- the regulation of retirement for employees in the educational system.

Instruction in each community is provided in the language of the community in question. In **Flanders**, the Ministry of Education and Training is responsible for all stages of education and training, starting from pre-primary education.

1.1 Definition of UAS in Flanders

In Flanders, only **Higher Education Institutions** (HEIs) recognised by the Flemish government may award the degrees of Bachelor and Master. They consist of:

- officially registered institutions;
- private registered institutions.

In Flanders, all universities of applied science (UAS) are **officially registered institutions**, as are the research universities[2]. These HEIs were recognised by the Flemish Government prior to 2004 and can rely on government funding for their education and research activities. The **private registered institutions** are HEIs not eligible for government funding

In Flanders, higher education encompasses all forms of education on levels 5 to 8 of the NQF[3]. The **UAS** offer **first cycle programmes**, more specifically associate degree programmes (NQF 5) and bachelor's programmes (NQF 6), while universities offer first, second and third cycle programmes i.e. the bachelor's-, master's and doctoral programmes (NQF 6 to 8). The schools of arts, which are part of the UAS in Flanders, can also offer master's programmes in the arts (NQF 7). A further distinction is made between professional bachelor's programmes (which are organised by universities of applied science) and academic bachelor's programmes (which are organised by universities). The professional bachelor's programme aims at impairing the students with a general and specific knowledge of the competences needed for the independent execution of a profession or a group of professions. A professional bachelor's programme offers the possibility of proceeding directly onto the labour market. The academic bachelor's programme is aimed at proceeding to a master's programme.

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[1] The Flemish Community, the French Community and the German-Speaking Community.
[2] https://onderwijs.vlaanderen.be/wegwijs-het-hoger-onderwijs
[3] EACEA (2018), National Education Systems – Belgium, Flemish Community, National Qualification Framework, https :// eacea.ec.europa.eu/national-policies/eurydice/content/national-qual ifications-framework-3_en

1.2 Background/history of UAS

The UAS in Flanders have undergone a significant reform in the past 30 years, causing a fundamental shift in the Flemish higher education landscape. An initial landmark was the 1995-1996 academic year, in which a total of 202 HEIs across the region merged into 29 UAS. Following the Bologna process and the introduction of the bachelor-master structure in higher education, the 'academisation'-process led to the transfer of all second-cycle programmes into universities and the schools of arts. This process, paired with further rationalisation, led to the **current landscape of 16 UAS.**

UAS are free to compose their own curricula. The higher education institutions determine the learning outcomes for each programme and its components. They base themselves on the **common domain specific learning outcomes** which are drafted by the HEIs under the coordination of the VLUHR KZ (Flemish Council of Research Universities and University Colleges)[4]. The domain specific learning outcomes are validated by the Accreditation Organisation of the Netherlands and Flanders (NVAO).

When drafting the programmes, the board considers the prevailing national and international (admission) requirements that are down by law (including the European Directive 2005/36/EC) for certain professions, such as general nurse. The accreditation body indicates in its accreditation report and accreditation decision whether the board of the institution has compiled their programmes in compliance with this European Directive.

Most programmes the UAS offer are professional bachelor programmes. These programmes are primarily oriented towards professional practice. They offer the possibility of proceeding directly onto the labour market. Practical training in real working conditions (companies, schools, hospitals, etc.) forms an essential part of these programmes.
Students are guided in various ways to facilitate their entry onto the labour market. Most universities of applied science have installed employment services. Since there are no official guidelines in this area, their operating procedures may vary. Some institutions confine themselves to collecting information on vacancies or employment statistics, whereas others keep detailed employment records on individual graduates, organise job interview training sessions and/or employment preparation seminars, etc.

1.3 Description of the UAS sector and programme

Table 1 Number of students					
	2018[5]	2019[6]		2018	2019
Number of HEIs students	222.418[7]	-	Number of UAS students	117.570	-

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4   https://www.qualityassurance.vluhr.be/our-services/learning-outcomes
5   Department of Education and Training, (2020) „Statistisch jaarboek van het Vlaams onderwijs 2018-2019"
6   The number of unique students is counted per academic year, in this case from the period september 2018 until june 2019.
7   The sum of the number of students in universities and universities of applied science does not equal the total number of students in Flemish higher education. A student with registrations in both a university of applied science and a university is only counted once.

Table 2 Shares of students 2018-2019 at different types of HEIs		
University[8]	UAS[9]	Other HEIs
105.122 (47%)	117.570 (53%)	-

When defining students in Flemish UAS, it is important to look at the different contracts students can engage in with the board of the institution:

- **credit contracts:** a contract between the board of the institution and the student, who registers with the goal of obtaining (a) proof(s) of credit for one or several course components;
- **degree contracts:** a contract between the board of the institution and the student, who registers with the goal of obtaining a degree or registers for a bridging or a preparatory programme;
- **exam contracts:** a contract between the board of the institution and the student, who registers, under certain conditions imposed by the board of the institution, only to take the exams.

While historically there is a distinction between private and public institutions of higher education in Flanders, the main relevant distinction is whether the institution is officially registered or private registered. **All 16 Flemish UAS are officially registered, and eligible for government funding.**

Table 3 Share of UAS students at different legal forms	Private institutions	Public institutions	Other (specify)
	-	100% (16 officially registered UAS)	-

The numbers below are based on the yearly reporting by the Flemish government on the amount of degree contracts in the relevant study areas

Table 4 List of the most dominant sectors	Share of from all UAS students from the sector (expert estimation or statistics if available) to all UAS sector[10]
1 Commercial sciences and management	32.9%
2 Healthcare	16.4%
3 Education	15.5%
4 Industrial sciences and technology	14.5%
5 Social work	14.0%

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8   This number only counts students registered in universities, disregarding any potential registration in a university of applied science at the same time. If a student is registered in two universities or has multiple registrations in the same universities, this student is counted as one.

9   This number only counts students registered in universities of applied science, disregarding any potential registration in a university at the same time. If a student is registered in two universities of applied science or has multiple registrations in the same university of applied science, this student is counted as one.

10 Department of Education and Training (2020) "Statistisch jaarboek van het Vlaams onderwijs 2018-2019"

1.4 Funding mechanisms

As stated earlier, education is a matter of the communities in Belgium, which are also responsible for its funding. In 2008 a significant reform of the financing system in higher education in Flanders was introduced, impacting all higher education institutions. The reform was finalised into decree in 2012.The **funding of HEI in Flanders** consists out of several sub-budgets:

A fixed education lump-sum payment (for UAS and universities):

This amount is divided based on the number of credits taken up by students with a degree contract in the initial bachelor's and master's programmes. It is a degressive system, resulting in a relatively larger education lump-sum for the smaller institutions. In order to qualify for an education lump-sum, an institution must reach a minimum institutional threshold of 90 000 credits in the bachelor's and master's programmes. Institutions that do not reach the minimum institutional threshold do not receive the guaranteed minimum amount nor a contribution from the Incentives Fund. Starting in 2014, an education lump sum is provided for arts programmes in the schools of arts.

A variable education part for professional programmes offered by UAS, academically oriented programmes offered by universities and for arts programmes in the Schools of Arts (part of UAS):

The programmes which qualify for funding are:
- accredited initial bachelor's programmes;
- accredited initial master's programmes;
- the bridging programmes;
- the preparatory programmes;
- post-initial bachelor's programmes (the advanced bachelor's programmes) receive 50% of the initial-Bachelor's programmes funding, but the Flemish Government will be able to deviate from this under certain circumstances;
- post-initial Master's programmes (advanced Master's programmes) are in principle no longer financed; however the Flemish Government may fund programmes that meet a predetermined criteria for socially added value, such as labour-market needs, scientific relevance and the quality of the programmes;
- for these post-initial Bachelor's and Master's programmes, the institutions can tap into alternative sources of funding including higher tuition fees (for programmes funded by the Flemish Government maximum twice the amount, for non-financed programmes tuition fees may amount to 5.400 euros (non-index-linked) and in exceptional circumstances, they may even run into 24.790 euros (non-index-linked)).

When students register at a HEI, they can choose between three different contracts: a degree, credit and exam contract. The degree and credit contracts qualify for funding in contrast to the exam contracts;
- Degree contracts are financed on the basis of input and output data:
    - o Newly enrolled students are financed on input basis (= based on the number of credits taken up) until they have acquired 60 credits in one programme;
    - o students who have gathered at least 60 credits within one and the same institution, are financed on the basis of acquired credits (output); a credit is a criterion for study load and corresponds to 25-30 hours of study;

- o input financing applies only to bachelor's programmes;
- o if a student changes course during the academic year and registers for another programme with a degree contract at another institution, the first institution will retain the number of credits the student was registered for. So, in this way, the student's reorientation does not penalize the UAS;
- Credit contracts will only be financed on the basis of output data (acquired credits).

In addition, a number of weighting corrections are applied by the government:
- A weighting of student characteristics: students in receipt of a grant and students with functional disabilities carry more weight (factor 1.5);
- every degree of professional bachelor and initial master's programmes conferred, results in a degree bonus of 30 credits (on condition that the student has acquired half of the credits of the programme in question at the institution involved);
- area-of-study weighting coefficients are also applied to the volume of credits;
- bonuses to promote efficiency have also been provided for the institutions;
- phase-out transitional funding for discontinued or transferred programmes (supplemented by a programme-discontinuation bonus, if the staff-reorganisation plan has been approved); and
- a one-off extra budget of 5 million euros earmarked in 2009 to rationalise and optimise programmes. This rationalisation fund has been distributed amongst the institutions whose rationalisation programme was approved by the Flemish Government.

A fixed research lump-sum payment for the universities:
The amount is distributed among the universities on the basis of the number of doctorates and the number of publications, with a lower and upper limit.

A variable research part which will be distributed amongst the universities on the basis of:
The number of academic and academic-oriented bachelor's and initial master's degrees conferred by the universities and university colleges affiliated to the association, the number of doctorates conferred, the number of publications and citations according to criteria which also play a role in the distribution of resources from the Special Research Fund (BOF), the number of first appointments of external researchers and female researchers to the level of autonomous academic staff.

Additional resources:
For project-based scientific research (PWO), the government allocates about €30 million. This funding goes towards the UAS for their research activities. A further €30 million is acquired through external funding, which is obtained in a competitive (European) context. Furthermore, there is a €3 million funding for knowledge dissemination of research towards enterprises and organisations in Flanders.

1.5 Challenges of the UAS sector

In Flanders, one of the main challenges is the **fundamental shift** from input **towards output or impact.** There is a growing need, fuelled by Open Science, for accountability towards the public. Funding for research and development is increasingly oriented towards tackling societal challenges[11].

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[11] Evelien D'heer (2020) Position Paper Impact, DOSP

The legitimate need for a more demonstrable and measurable impact raises complex issues. Impact remains a vague concept with multiple dimensions and pitfalls, including the risk of a perverse effect in which the relevance of research and development is only measured by its obvious, direct results. Measuring impact should be more than simply measuring output and should include the process and the conditions required to have impact. This means **stakeholder involvement, research integrity and a multidisciplinary approach** should also be measured. This encourages an ex-ante approach, in which the process and conditions are made explicit, rather than a simple ex-post approach.

Following challenges remain:
- The professionalisation of teachers and researchers with regards to multidisciplinary cooperation and the development of sustainable partnerships;
- A sometimes opaque field of work, which limits the potential involvement of said field of work in projects;
- The throughflow of information within the institutions. General management is often involved in task forces and steering committees to help outline policy, but regional engagement often fails in implementation or execution. The appointment of a dedicated liaison who follows up on partnerships and ensures that throughflow of information within the UAS could often offer solutions;
- Many of the challenges posed by regional actors are both related to research and education, which are often two separate entities within the UAS. In most UAS, there is room for an improved alignment between research and education, in the form of periodic meetups, a dashboard, or a fixed place on the management agenda.

1.6 Quality Assurance of UAS and regional engagement

In Flanders, the UAS are autonomous in their responsibility for assuring the quality of their education, while the NVAO, the Dutch-Flemish Accreditation Organisation, conducts the external **review of the institutions**. Through a review by a panel of experts, the NVAO checks whether the institutional policy on education matches with their vision on education and with the societal challenges relevant to the context of the UAS. The institutions are free to determine which choices they make and which priorities they put forward, but the external review checks whether these choices and priorities match with the way they profile themselves.

2. Types of regional engagement of UAS

2.1 Active role in regional strategy development and implementation

2.1.1 Forms of engagement of UAS in the development and implementation of regional strategies

In Flanders, all UAS are actively involved in regional strategy development and implementation, ranging from the municipal and provincial level all the way to the regional and national level. There is a variety of good practices to discern, from project-based engagement to a more long-term engagement.

2.1.2 Good practices

The **SALK-plan**[12] (Strategic Actions Programme Limburg) of the Limburg Province was put into place in 2013 by the Flemish government to stimulate the recovery of the local economy after the closing of a major company and its distributors in the region. The ambition of the SALK-plan was to shift the social-economic profile of the region, for which a wide variety of actors were consulted. The UAS were part of that process and are part of the new SALKTurbo-plan, the government's follow-up project. The general directors of the two major UAS in the region are part of the taskforce, which will look at the topics of mobility, digitalisation, entrepreneurship and talent development in the region.

The Flemish Region recently launched an action plan on **Artificial Intelligence** (AI) with an investment of €32 million[13]. This action plan contains a research programme with a focus on the development of AI applications in four main areas: AI for supporting complex decisions (data science), real-time and energy-efficient AI, multi-actor collaborative AI, and human-like AI. In addition, €15 million will be allocated to support the implementation of AI within Flemish companies, as well as the overall digitalization of the private sector. Lastly, €5 million are earmarked annually for AI training and for an Ethics Knowledge Centre, which will develop expertise around issues related to AI and ethics. The UAS are involved in this project through the implementation plan and t a Flemish AI Academy.

> *All UAS are involved in regional strategy making, be it at the level of cities or provinces. All entertain strong relations with governments, profit and non-profit organizations, and civil society. Alumni are key in this regard!*
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> ***Focus Group Internal SH***
>
> *It is often overlooked that students can do internships at government organizations and get involved in policy making. For many students this is still a big step. But students would like to do that, being involved in (policy-making related) research conducted by different government organizations. UAS should be more ambitious regarding their internship policy. In Limburg, one of the provinces of Flanders, students are involved in regional tourism policy making, but this seems an exception.*
>
> ***Focus Group Internal SH***

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[12] www .limburg.be/webfiles/salk/achtergrond_studies/strategisch_actieprogramma_limbur g%C2%B2_2013-2019.pdf

[13] https://www.ewi-vlaanderen.be/nieuws/vlaams-actieplan-artificiele-intelligentie-gelanceerd

The Association of Flemish Cities and Municipalities (VVSG) has a project[14] with the Howest UAS in the Province of West-Flanders, focused on highlighting the importance of **cybersecurity** at a municipal level. Through the Computer & Cybercrime Bachelor-programme in the UAS, students are employed as ethical hackers to not only test the IT-systems and applications in the municipalities, but to analyse processes and workplace behaviour. This will lead to a report, tailored to the needs of every municipality, with clear recommendations on how to enhance cyber security at the municipal level.

2.1.3 Indicators

Flanders currently use no indicators at the national level. Indicators may be used at the institutional level, but this information is not readily available.

2.2 Regional aspects of higher education teaching and learning

2.2.1 Regional aspects of teaching and learning

Regional actors are involved in the consultative bodies of all Flemish UAS, both at the institutional and at the programme level. These actors help to **monitor and design the curriculum**. An important measure of quality assurance at the programme level is the involvement of the **professional field** in the curriculum design.

The Flemish public employment service (VDAB), which is organised locally as well, has several cooperation agreements with the UAS regarding the so-called OKOT (Education Qualification Training Trajectory) **training pathways**[15]. These pathways, at the levels 3 to 6 of the NQF, lead to an education qualification for jobs-seeking adults and are focused on the regional bottlenecks on the labour market. The UAS either fully or partially organise these pathways, while the jobseekers are guided before, during and after their training pathway by the VDAB counsellors.

One of the strengths of the UAS in Flanders is the direct involvement of students in **work-based learning** and in **projects with a societal impact** (see below). Every UAS also works together with local governments and private initiatives to support **student-entrepreneurs.** In cooperation with the Flemish government a subsidy programme was developed with a focus on entrepreneurship.[16] Every UAS has set up a separate entity for entrepreneurship, tasked to guide student-entrepreneurs and stimulate cooperation with the region regarding entrepreneurship.

2.2.2 Good practices

Student projects are one of the main ways students can learn as well as provide a **service to**

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[14] VVSG (2020), An ethical hacker in your municipality? Apply now!, https://www.vvsg.be/kennisitem/vvsg/een-ethische-hacker-in-jouw-gemeente-meld-je-nu-aan (Article in Dutch)

[15] VDAB (2018), Onderwijskwalificerende trajecten met VDAB-opleidingscontract, https://www.vdab.be/sites/web/files/doc/infobrochure%20OKOT-VDAB.pdf (Brochure in Dutch)

[16] https ://www .vlaio.be/nl/begeleiding-advies/start/sociale-zekerheid-bij-ondernemers/ statuut-van-student-zelfstandige

[17] VIVES (2018), Go Baby Go Belgium by VIVES, https://www.vives.be/nl/zorglab/gobabygo (Article in Dutch)

society. VIVES, a UAS from West-Flanders, participates in the Go Baby Go[17] open source movement of the University of Delaware. The goal of this project is to enable kids with reduced mobility to be mobile again and improve their social interactions. In this project, kids receive a personalised and modified electric (6V) car. Further modifications are made based on a thorough screening performed by students ergotherapy, speech therapy and care technology, in cooperation with the parents of the children. Every year, the UAS attempts to provide five 6V cars to children. Another good practice comes from the UCLL UAS where the students have been working together with the local festival Pukkelpop[18] since 2015 to help the festival become more sustainable. Students and researchers have built sustainable energy provision and helped with sensibilisation of artists, visitors and stage builders. More recently, students and researchers of the Karel de Grote UAS have developed an event matrix for the event sector to allow future events to be organised in a corona proof manner. The Thomas More UAS has a high-tech Fablab in which they often host workshops, events and even summer camps for children[19].

Student **entrepreneurship** is stimulated in the city of Ghent through the Gentrepreneur project, where the HOGENT UAS and Artevelde UAS cooperate with Ghent University and the city of Ghent.[20] Whether the intent is to start an enterprise, organise a large scale party or solve a complex societal problem, the project is there to help. Through a network of Gentrepreneurs and experts, with informative events, workshops and advice, the project tries to establish an authentic learning environment. With inspiring examples and role models the UAS try to create a challenging and stimulating entrepreneurial community in the city.

2.2.3 Indicators

Flanders currently uses no indicators at the national level. Indicators may be used at the institutional level, but this information is not readily available. However, potential indicators could be:

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[18] UCLL (2019), Pukkelpop 2019,
    https://www.ucll.be/samenwerken/innovatieve-projecten/pukkelpop-2019 (Article in Dutch)
[19] Thomas More (2020), Wiweter-Kamp, http://wiweter.be/kamp-kind/ (Brochure in Dutch)
[20] https://www.gentrepreneur.gent/

- Number of meetings with professional field partners;
- Amount of work-based learning programmes;
- Number of (societal impact) project participants;
- Number of student-entrepreneurs.

2.3 UAS Capacity for the region

2.3.1 Forms of regional UAS services

In Flanders, all UAS are committed to their role in society through organising high-quality education and research, but also through **providing relevant services** rooted in their areas of expertise. Where possible, regional actors are involved during the development phase. Across Flanders, there are several projects in which education/research and the provision of services coincide.

One of the main activities of UAS in Flanders is the development of services based on the demand of regional actors. The most apparent services are participating in policy making, providing guest lecturers, help organise events, supporting communication campaigns and so on. Through the **Blikopener** project, the UAS in Flanders provide accessible counsel regarding several topics for free[21]. This project aims to share the expertise of the UAS researchers to society at large.

Reginal engagement is more than research: it is providing services on the level of citizens, neighbourhoods, cities.... This kind of projects could be more incorporated in the research activities of UAS, with the students as bridge figures between the UAS and society at large.

Focus Group Internal SH

UAS expertise should be of added value for society at large, economic return is important, but social impact too. UAS services can bring all actors together.

Focus Group External SH

The access of UAS to funds to finance infrastructure is rather limited, a point of frustration which has been signalled to the Flemish government. However, many **UAS infrastructures** are available for regional actors, private and public. The funding provided for the purchase of research infrastructure is always on the condition that this infrastructure is also made available for enterprises and organisations. Sports facilities and meeting rooms are readily made available for regional actors, and the Schools of Arts regularly organise exhibitions for the general public. In certain circumstances the whole campus can be used for the organisation of activities. The UAS report about the number of service activities in their yearly reporting.

2.3.2 Good practices

To tackle the negative consequences of the Covid-19 crisis, the Flemish government has launched a call for the organisation of **summer schools** for secondary education[22], in a joint approach of schools, local governments and other partners. For a period of at least 10 days in

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[21] https://www.blikopener.vlaanderen/
[22] Department of Education and Training (2020), Summer Schools in July and August 2020,
https://onderwijs.vlaanderen.be/nl/zomerscholen-juli-en-augustus-2020 (Dutch)

July or August a tailor-made learning pathway is developed, linked to sports, play and culture, following several successful international initiatives. Several UAS are participating in these projects. The Thomas More UAS received an assignment from the Flemish government to make an inventory of the programmes provided in these summer schools, assess their quality and link them to best practices in countries with a long tradition in summer schools.

The Expertise Cell PXL Music Research is a young research group embedded in the music department of the PXL UAS. Through an investment fund, this expertise cell is responsible for developing the PXL **Immersive Music Lab**, which allows research on the entire musical creation process with the aim of standardisation and implementation in the daily practice of music professionals.[23] This investment will serve as a leverage for co-creative research with enterprises and cultural centres. The infrastructure will also be made available at certain times for the professional field.

Erasmus UAS has a knowledge centre for AI which aims to bring existing technology closer to enterprises.[24] Through an investment fund the UAS is establishing an **AI Experience Lab** in which humans take centre stage: human-focused experiences that are intuitively understandable are at the core of the lab. The goal of the AI Experience Lab is to function as an accelerator for the next wave of digitalisation, within the healthcare sector, smart cities and circular industry. The AI Experience Lab is open for the local field of work, allowing room to experiment, build experience or test UX. The available researchers support the integration of potential products and services within the context of the enterprise.

2.3.3   Indicators

Flanders currently uses no indicators at the national level. Indicators may be used at the institutional level, but his information is not readily available. Potential indicators could be:

- Number of service activities provided by UAS;
- Number of providing facilities;
- Number of projects with private/public partners

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[23] https://www.pxlmusic.be/nl/immersive/
[24] https://ai.ehb.be/

2.4 Research (practice-based)

2.4.1 Applied research in UAS

While fundamental research, traditionally the area of expertise of universities, is focused on the development of theories, **practice-based research** within the UAS is focused on the **development of applications**, while maintaining integrity, reliability and validity. Through tackling practical challenges and the development of applicable output, the research conducted in the UAS helps in building up a regional knowledge base. This results in a structural cooperation within a region, in which knowledge is increasingly disseminated. Through co-creation in the quadruple helix, innovations are developed, implemented and evaluated. We can discern research activities, providing (accessible) guidance, policy and management board memberships and organising tailor-made seminars and training by UAS. In short, practice-based research activities are a **motor for innovation**, which in turn leads to an increase in welfare and well-being in our society.[25]

2.4.2 Good practices

Good practices involve the Blikopener project[26] related to dissemination of knowledge, of which the relevant indicators are mentioned below.

2.4.3 Indicators

In Flanders, the UAS use indicators to report to:

- the board, internally;
- the association;
- the federal government;
- the Flemish government;
- VLHORA.

> *On the supply side UAS experience difficulties to communicate their research activities with (profit/non-profit) organisations (not all researchers are good communicators). More focus on output/outcomes seems crucial in this regard (valorisation). On the demand side organisations experience difficulties to reach out and to get a grasp on UAS research activities, although websites like Blikopener and researchportal.be exist.*
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> *Research at UAS is highly fragmented; UAS should work together and define priorities. Goverments should create impulses to create synergies among UAS*
>
> ### *Focus Group Internal SH*
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> *SME want a better view on the research portfolios of the different UAS. Blikopener is a very good starting point. Students should be encouraged to do research during the internships, but these are short term engagements. Long term engagements of both SME and UAS give students also more possibilities to network, which is crucial for their career.*
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> ### *Focus Group External SH*

Currently, there is an arrangement between the UAS in Flanders on how to report, but further alignment is certainly possible. This is currently one of the topics in the context of the Digital Open Science Platform project of VLHORA.

Several indicators have been defined for research, development and innovation. Yearly, the UAS report to VLHORA and the Flemish government on the following indicators:

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[25] http://www.vlhora.be/documenten/Publicaties/2019%20memorandum%20def.pdf
[26] VLHORA (2020), Blikopener, https://www.blikopener.vlaanderen/ (Dutch)

Research indicators

- Number of researchers with a research assignment of at least 20%: heads and total FTE (full time equivalent);
- Percentage of teaching staff with a research assignment of at least 20%: heads and total FTE;
- Number of publications in professional journals, number of publications in scientific journals;
- Number of formal partnerships with the professional field, number of formal partnerships with (inter)national knowledge institutions;
- Turnover of RD projects.

Knowledge dissemination indicators

In cooperation with the Flemish government an instrument for knowledge dissemination (Blikopener) has been developed, to allow the throughflow of innovative knowledge from the UAS to enterprises and social profit organisations. Every year, the UAS report:

- The number of enterprises and social profit organisations the UAS have contacted to identify questions related to innovation;
- The amount of accessible guidance provided by the UAS;
- The number of referrals to other knowledge institutions;
- Number of support offered to enterprises and social profit organisations related to participation in research projects.

> *There are indicators: VLHORA, Blikopener, annual reports UAS… but indicators that sum up just research contracts are not relevant; what matters is the long term impact of research. Indicators are a proxy and sometimes even deceptive. If indicators are used, clear difference between input, process, output and outcomes must be made. UAS are reluctant to have indicators as a means to evaluate.*
>
> *Contacts with sector/cluster organizations, defining research priorities, cross-UAS collaborations, platforms to meet SME, CRM tools and upscaling internships are crucial for success! UAS want visibility first. Impact studies later.*
>
> ***Focus Group Internal SH***
>
> *For SME, no need for indicators, and not easy to measure economic return or social impact. More important now to get informed about the research activities at the different UAS.*
>
> ***Focus Group External SH***

VLHORA, as an umbrella organisation of the UAS, is responsible for reporting this information to the Flemish government. VLHORA further takes stock of the following information:

- The size of the enterprise or organisation;
- The topics;
- Results of the Blikopener instrument e.g. new research project, a student project.

In addition to these indicators for the dissemination of knowledge, the UAS also report the number of supporting staff and the number/volume of training services that are distilled from research projects. Indicators on the valorisation, impact and service activities, however, are scarce to non-existent.

Yearly, the UAS report to the government commissioners regarding the research activities and the number of researchers. This concerns staff with a statutory appointment, for which a reimbursement on the payroll tax can be obtained. This report contains:

- A summary report with quantitative indicators;
- Per researcher a topical report with
    - The project title;
    - A short summary of the research activity;
    - The research percentage for this project;
    - Valorisation and dissemination activities.

In summary, the UAS have to report to different actors (government, VLHORA, commissioners) and there is certainly work to be done in improving the alignment between these various processes. In 2019, the Flemish government decided to award VLHORA and the UAS of the Flemish region a one-time grant to develop the **Digital Open Science Platform** (DOSP) which will enable the more efficient inventory and use of more indicators and information. A partner from the professional field, a knowledge institution and the government will be able to get a better idea of what experts and what expertise are present within the UAS. A major benefit with this platform is that the information is only to be registered once by the UAS, with which the necessary reports can be assembled for the different governments and institutions. The UAS and VLHORA are currently working together with a company to develop this new application, which will lead to a digital transformation in which processes, services and data will be aligned. Implementation of this platform is planned for 2021. This will not only facilitate the task of reporting and sharing but also encourage cooperation between researchers and with partners in the field of work.

There are a **number of challenges** for the future:
- Digital transformation:
  - As part of the development of the DOSP-platform all indicators are being inventoried, the relevancy determined and if necessary developed. This is planned for the end of the year in 2020;
  - Developing the platform in 2020;
  - Implementing the digital transformation starting in 2021 (professionalisation, sensibilisation, information exchange between services (HR, Finances, Research and Innovation));
  - Linking DOSP with the research portal of the Flemish government (FRIS), in which currently only data of the research universities in being stored.
- Professionalisation: development of a Flemish curriculum for researchers of the Flemish UAS.
- Internationalisation: the UAS scores well for ERASMUS+, however opportunities for a greater participation in the Horizon Europe programme still lie ahead.
- Value creation: UAS professionalize and organize themselves on a better valorisation of the project results.

2.5 Social Innovation (no research dimension required)

2.5.1 Overview

Regional and local governments involve the UAS in **policy making** and in tackling complex problems and challenges:

- Early school leave (NEET-youth);
- Poverty (social injustice);
- Climate change; and
- Circular economy

UAS and SME should actively look for synergies to tackle complex social problems, this could be in the context of Flanders Make or other sector/cluster organizations for example. Also important to look across own discipline/field, like a SME that specializes in sustainability (solar panels) could benefit from students studying management or marketing.

Focus Group External SH

This cooperation happens both within education as well as research. A number of UAS have developed a separate research entity focused on **social innovation.**[27] One of the main driving forces in Flanders is the Sociale Innovatie Fabriek (Social Innovation Factory), an organisation with a focus on social entrepreneurship and innovation.[28] The organisation is shaped by civil society organisations and entrepreneurs and works in partnership with government, knowledge institutions (including the UAS) and enterprises.

One of the main challenges in tackling these wicked problems is that many projects are oriented on the short term, lacking a long-term vision and a structural allocation of funding. These topics often require a **multidisciplinary approach.**

2.5.2 Good practices

VIVES, one of the Flemish UAS, participates in the Interreg project FLAVOUR[29] (Food surplus and Labour, the Valorisation of Underused Resources). The overall objective of the project is to create socially innovative business models to increase the efficiency and effectiveness of

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[27] https://www.vives.be/nl/onderzoek/expertisecentrum/sociale-innovatie en
https://www.ucll.be/samenwerken/sociale-innovatie
[28] https://www.socialeinnovatiefabriek.be/nl/over-ons
[29] INTERREG (2018), Food surplus and Labour, the Valorisation of Underused Resources,
https://www.interreg2seas.eu/nl/FLAVOUR

services dealing with food surplus in order to address the territorial challenge of the availability of large amounts of food surplus fit for human consumption, whilst creating jobs/pathways to employment. Food surplus here relate to edible leftovers and residual streams from agriculture at any level of the food chain, excluding the household level.

> *Non-research activities indicators are even more difficult to establish. Here UAS are looking for levers rather than indicators. Case studies, good practices or user stories motivate all actors involved, more than showing numbers.*
>
> ***Focus Group Internal SH***

LUCA School of Arts is active in the 'Creatives for good'[30] research project which aims to raise awareness about the importance of sustainable development goals (SDG) among designers and communication experts, i.e. how the SDG's framework can deepen the understanding of the real needs of people and as such be a true inspiration, a touchstone, quality label, creative trigger and so on. The research aims to co-create a toolbox with professional creatives in the advertising world.

Artevelde UAS offers an international programme under the name 3ID LABS[31], in which students work on real-life cases during a full semester, dealing with diversity, acting towards inclusion, developing sustainable interventions, advocacy of the most vulnerable people, influencing policy... The cases are submitted by real organisations and cover important social challenges in the field of sustainability and social inclusion. Together with a super diverse team, students can design their own answer to these challenges.

2.5.3 Indicators

Flanders currently uses no indicators at the national level. Indicators may be used at the institutional level, but this information is not readily available.

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[30] LUCA (2020), Advertising Creatives for Good, http://wearecreativesforgood.com/
  https://www.ucll.be/samenwerken/sociale-innovatie
[31] Artevelde UAS (2020), 3ID Labs,
  https :// www .artevelde-uas.be/programmes/international-semester-programme/
  3id-labs-english/what-are-3id-labs

2.6   Lifelong learning

2.6.1   Overview

The 2019 OECD Assessment and Recommendations on the Skills Strategy in Flanders[32] acknowledges that Flanders compares well to most OECD countries on most measures of **skills development** and use, that the skills proficiency of Flemish adults exceeds the OECD average and that the skills mismatch is low. Challenges remain, however, in particular with regards to older workers, immigrants, adults in flexible forms of employment and low-skilled adults. The five priorities, identified by the OECD and the Flemish government are:

- Developing a learning culture;
- Reducing skills imbalances;
- Strengthening skills use in workplaces;
- Strengthening the governance of adult learning;
- Improving the financing of adult learning

The UAS in Flanders acknowledge the role they have to play in fostering the learning culture, with **lifelong learning** as one of the main priorities for the UAS in their memorandum for the 2019 regional elections.

2.6.2 Good practices

The Antwerp Maritime Academy is a centre of maritime knowledge. Its equipment and know-how are not only used in the bachelor's and master's programmes but are also at the disposal of third parties. There is a growing demand from maritime companies (merchant marine, towing and dredging companies) as well as public authorities (such as the Pilotage services) for external nautical training. The training modules offered by the Antwerp Maritime Academy,

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[32] OECD (2019), OECD Skills Strategy Flanders: Assessment and Recommendations,
https ://www .oecd.org/skills/nationalskillsstrategies/OECD-Skills-Strategy-Flanders-Executive-S ummary-English.pdf

are not only available for the industry and the public services, but also for individual trainees. It is also possible to organise tailormade training programmes, adapted to your specific needs. Companies that have their own certified instructors can rent our training equipment.

Aquaculture is a sector with opportunities for production of high-quality food in a sustainable way through new breeding techniques, alternative raw materials for feed, and other innovations. The Aqua-view project[33] aims to mobilise education on European level and scale to address these opportunities and challenges in aquaculture. Based on the needs of industry, European objectives, and the sustainable development goals of the United Nations (related to food, soil, water and energy), Aqua-view contributes to the development of future employable employees. They can work internationally within the sector, and thus give shape to European labour mobility. A high-quality workforce must be created that responds to challenges facing the sector, and innovations needed in order to contribute a sustainable aquaculture industry. The UAS Odisee is partner of a membership organization for educating learners of all European qualifying levels in the profession. The organization will stimulate the educated learners to develop their profession in aquaculture. The digital platform of Aqua-view to exchange lessons, learning resources and programs will also contribute to this development.

> *Regarding LLL there are many opportunities for UAS. Many organizations show interest. Biggest added value of UAS is that they know the labour market (vis a vis Research Universities), but, there is still too much red tape to create post graduate programmes. These programmes are also excellent venues to network and bring all actors together.*
>
> ### *Focus Group Internal SH*
>
> *Regarding LLL there is an enormous potential according the SME representatives. UAS must become nexus in expertise network at regional level; making connections between citizens, neighbourhoods, cities, profit and non-profit organizations. UAS should also provide LLL services in every domain, also for example in the arts. Governments must help UAS to set up learning networks and make LLL programmes more easily to develop.*
>
> ### *Focus Group External SH*

The HOGENT UAS has established a Centre for Lifelong Learning. The goal of this new educational centre is to replace the typical levels of education with a "dynamic approach of learning through cross pollination." This centre will offer post-grads, (post-)training and seminars for those who want to learn at a later age.

2.6.3 Indicators

Flanders currently uses no indicators at the national level. Indicators may be used at the institutional level, but his information is not readily available.

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[33] https://www.aqua-view.eu/

2.7 Other types of activities/engagement

2.7.1 Overview

The universities of applied science and the research universities collaborate to transfer part of their decision-making powers in associations[34]. An important part of such associations is to engage in science communication[35], with the objective to:

- **Sensitize.** Make the general public aware of the importance of sciences, technology and innovation and thus create support for a policy that invests in science communication;
- **Raise interest and inspire.** For children and youngsters and especially concerning participation in STEM-sciences (Science, Technology, Engineering, Mathematics);
- **Inform.** increase the knowledge of the general public, among other things in order to form better founded opinions and to make better informed decisions;
- **Create a dialogue with society.** besides informing the general public, we also aspire to listen to needs, reflections and ideas about sciences and research.

On a regional level, common goals were established, including a number of KPI related to specific actions (see 3.7.3.).

2.7.2 Good practices

The UAS in Flanders are actively involved in the STEM Academy Network, which promotes participation in STEM-related activities outside of the school walls.[36] The teacher training programmes as well as the STEM-programmes within the UAS are often involved in organising these activities. The UAS also report yearly to VLAIO, the Flemish Agency for Innovation and Entrepreneurship.

2.7.3 Indicators

There are a number of indicators related to science communication:
- Number of children, young adults and general public reached during events and through digital channels;
- Number of researchers/experts/students involved;
- Training for researchers/experts (number of training moments of at least 0,5 days);
- Number of partnerships with other actors both in and out of the science communication network;
- Development of a digital platform with portfolio, calendar and matching social media;
- Development and facilitation of a network of science cafés across Flanders;
- Collaboration on the "Day of Science";
- Collaboration on the "ikhebeenvraag.be" (ihaveaquestion.be) website;
- Actively searching for external funding at the Flemish, federal or European levels.

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[34] An association is a non-profit organisation to which universities of applied science and research universities may transfer certain decision making powers. An association consists of on the one hand a research university, which has the authority to autonomously offer both bachelor and master programmes, and on the other hand at least one university of applied

[35] https://www.ewi-vlaanderen.be/onze-opdracht/innoverende-samenleving/wetenschapscommunicatie

[36] https://www.technopolis.be/nl/stem-academie/

3. Summary

In conclusion, the UAS in Flanders are thoroughly engaged in the region, in all defined areas. The historical background of these institutions, paired with the nature of practice-based research, often make them preferred partners for regional stakeholders to tackle several issues with a varying degree of complexity. While the amount of activities related to regional engagement is a strength, there is room for improvement. These activities can be set up and monitored in a more systematic way, which includes an improved system of defining and measuring indicators, as well as communicating about said activities.

> *Non-research activities indicators are even more difficult to establish. Here UAS are looking for levers rather than indicators. Case studies, good practices or user stories motivate all actors involved, more than showing numbers.*
>
> ***Focus Group Internal SH***

There are ample opportunities for UAS to be involved even further in regional policy making, through an improved follow-up of policy making at these levels and a further alignment of the UAS policy with the regional challenges. The practice-based orientation of the UAS allows them to quickly deliver an added value for SME and organisations, a unique selling point that should be further highlighted. The most imminent threat - according to employer representatives is the scattered nature of the 'innovation landscape', of which the UAS were largely left out until recently. An added downside to this is that when research funding is being allocated, the UAS are often forgotten.

While there is a clear lack of indicators on most of the defined areas in Flanders, with an exception for 2.4 (Research) and 2.7 (Science communication), this does not mean there is a complete lack of reporting. The nature of government in Flanders, where education, research and innovation fall under different ministers and different agencies, does not facilitate the development of common indicators.

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