

Talent and collaboration, PLEN Strategy 2023



Contents

0. Summary of the departments goals	3
Goal A. Strengthen coherence and develop strong research and teaching environments.....	3
Goal B. Increase visibility and impact	4
Goal C. Recruit, retain and develop talented staff and students	5
Goal D. Improve governance and administrative support	6
1. Attracting, developing and retaining academic talent.....	7
PLEN will promote cutting-edge infrastructures.....	7
PLEN wants to use internationally recognizable career positions, attractive on-boarding packages and research environments.	8
PLEN will increase focus on equality and diversity to ensure that intellectual creativity and talent can flourish.	8
PLEN will work to enhance staff and student mobility.....	9
2. Education with closer ties to research and practice.....	10
PLEN wants to strengthen the linkage between research and teaching – and vice versa.	10
PLEN wants to promote challenging learning environments for students and employees.....	11
PLEN will further develop and implement digitalization in teaching.	12
PLEN will attract and graduate talented students who possess solid academic skills, an understanding of practice and the ability to collaborate across field.	12
PLEN will focus on carrier development in collaboration with external national and international partners.	13
Collaboration and societal commitment – nationally and globally.....	14
PLEN will promote our scientific position internationally.....	14
PLEN wants to contribute to resolving the major global societal challenges.....	14
PLEN will develop lateral themes to create collaborative environments within PLEN and across UCPH Departments.	15
PLEN will strengthen private and public research partnerships in Denmark and globally.	15
4. One unified and focused university	16
PLEN will balance the size and number of sections and research groups.	16
PLEN will integrate the lateral themes to direct the development of the Department, both for teaching, funding initiatives and when attracting new employees.	17
PLEN wants to adjust the Department budget model to the University/Faculty budget model.	17
PLEN wants to optimize the high level of external funding.....	18
5. Process and employer engagement.....	19
6. Action Plan 2018/2019	19
6.1. Attracting, developing and retaining academic talent.	19
6.2. Education with closer ties to research and practice.	20
6.3. Collaboration and societal commitment – nationally and globally.	22
6.4. One unified and focused university.	23

0. Summary of the departments goals

Goal A. Strengthen coherence and develop strong research and teaching environments

PLEN wants to further develop the scientific areas in the core of the three main scientific fields (Biotechnology, Agriculture and Environment) and use the synergy between these fields to develop new strategic research areas. The new strategic research areas together with the development of the three main scientific fields will ensure coherency at the Department and the close link between research and teaching.

There is an unused potential for developing research and teaching within and across the scientific fields at PLEN. The challenge here will be to create available time and financial flexibility to develop current as well as integrate new research areas.

The aim is to continue development of the scientific excellences of the research groups and use lateral themes for future development of new and cross-disciplinary research areas. This will give new opportunities for funding with unique network and synergy, which will help to consolidate current research groups and be the basis for new research groups. When developing new research areas, it will be taken into consideration how these will reinforce PLEN as a major contributor to achieve the UN SDGs and planetary boundaries.

The collaborations across the Department will be valuable in supporting research-based teaching and ensure the development of existing and new courses to meet future requirements. One of PLEN's strengths is its courses, which comprise teaching for students from across disciplines and which are at the intersection of the three main scientific fields with hands on experience. This is an important step towards producing the candidates preferred by stakeholders in the future.

An important part of the research at the Department is to convey knowledge to the students and to produce candidates who meet the demands of the stakeholders. Employees at PLEN are highly engaged in their research and teaching areas, and recognise that these go hand in hand. The research groups acknowledge that it is attractive to have the students contribute to their research by having shorter or longer projects in which students are part of the daily research environment. PLEN will promote that more student projects is in collaboration with public and private stakeholders. Theoretical knowledge is in courses and especially in projects combined with hands-on exploration to engage students to use their acquired knowledge. This is also important in order to create independent, curious and creative candidates with a basic knowledge adapted to future needs of private and public stakeholders.

To ensure and maintain the high engagement and level of teaching it is imperative to promote the learning environment, not only for students but also for employees. Here PLEN recognises the need to include digital competences in teaching and research. Competences in handling big data and modelling will be required in the future, so there is a need for the employees to acquire new skills and to include these in relevant courses to assure that candidates obtain these skills. Digitalization will be included in the lateral themes as well as in the development of curricula for students.

A common goal will be to optimise the use of all competences, resources and infrastructure in line with one of the Department's leadership values: to have a collaborative environment. PLEN's strength is the ability to collaborate across disciplines and sectors with respect and understanding for the knowledge base of the collaborator. This allows PLEN to be involved in new research areas and achieve synergy to gain more knowledge and create solutions.

Goal B. Increase visibility and impact

PLEN wants to increase the visibility of the excellent research and teaching taking place at the Department and be known to be active in the research political arena. PLEN wants to be known for its research going across the research areas from elements to ecosystems having cutting-edge infrastructure.

The employees at PLEN has the highest expertise both the ones working in research and in the support functions, all working in an inspiring and vibrant environment. Both in the Department and outside PLEN wants to be known for its collaborative culture. PLEN wants to have impact on society educating creative, independent candidates with relevant basic natural science knowledge to meet the demands of the industry and other stakeholders and as the driver for recruiting good students.

A large part of PLEN's research can be categorised under selected subject areas of international and European ranking lists in the research areas of Life and Agricultural sciences, and Environmental science. In the latest NSU world ranking, UCPH Agricultural Research and Life Science are found among the top 10 and top 20 universities, respectively. The ranking of Environmental Science is around 25 and Plant and Animal Science is among the top 10 universities. Due to the size of PLEN, the Department contributes significantly to the statistics for these areas at UCPH. Internationally, PLEN will improve and promote its scientific position by continuing the high impact of publications, entering collaboration with other excellent research groups, and with private and public international partners.

It is important for the Department and the researchers to be visible nationally and internationally, and be acknowledged for the high scientific level. This is essential if PLEN is to be a preferred partner for both private and public collaborators, and to be attractive for national or international

students and employees. Furthermore, we believe that the UN SDGs require the highest level of science to find the ultimate solutions.

Maintaining and expanding cutting-edge research facilities and infrastructures covering several experimental areas is vital to retain PLEN's scientific position and to remain attractive in collaborations. It is a goal to consolidate the infrastructure listed in table 1 with annual investment both to upgrade the equipment and to ensure the expertise taking care of the equipment.

Table 1. Infrastructure at PLEN.

Infrastructure	Level of collaboration	Value of infrastructure (million DKK)	Description
CAB	UCPH	40	Center for advanced bioimaging
Metabolomics	PLEN	40	Advanced metabolite analysis
Proteomics	PLEN	10	Gene expression, dynamics, modifications, interactions and structure
CHIME	PLEN	15	High throughput profiling of mineral elements and their binding forms
RAACE	PLEN	40	Advanced analytical chemistry
RadiMax	CID	15	Research in plant roots, in the soil
Phenolab	PLEN	10	High throughput phenotyping
AnaEE	European	47	Analysis and experimentation on ecosystem
Uasability	National	64	Use of unmanned aerial systems to acquire data (Drone)

A communication strategy both internally and externally will be developed to strengthen visibility and collaboration. Internally the focus will range from information about Department initiatives to researching political agendas, priming for funding, and strategic discussions about development of the Department, its research and its teaching. Externally, one entry is the website and selected press releases, which should reflect the PLEN scientific profile, potential research collaboration, and possibilities for talented students to be involved in projects with private and public companies. Another important entry to strengthen PLENs visibility externally is to support the scientist as ambassadors in presenting PLEN e.g. at conferences.

Internationally, PLEN will promote its scientific position by continuing the high level of publication, and entering into collaboration with other excellent research groups abroad as well as with private and public international partners.

Goal C. Recruit, retain and develop talented staff and students

PLEN wants to be recognised for its strength being in the cross field of basic and translational research, which, among other things, has resulted in a large proportion of private and public collaborations. PLEN wants to create and be known for its attractive research and study

environments in order to attract talented employees and students. A cutting-edge infrastructure is essential to when recruiting new researchers but also to retain and develop talented employees and students.

To recruit talented researchers, PLEN wants to develop attractive on-boarding packages, including administrative support and technical infrastructure support. Another important parameter is to obtain a common understanding of possible career paths within and outside PLEN. Specific guidelines for career progression, in terms of research output (publication and funding), teaching contribution and visibility internally and externally will be developed. Likewise, the 2014 departmental guidelines for hiring academic staff will be updated and supplemented with a guideline for promotion programme from associate professor to full professor.

There is a need to focus on how to assure the career path for employees, also for other careers than in the academic world. In creating career opportunities and networks for the current staff, a sabbatical programme will be developed. PLEN wants to develop research talents and support them in exploring the international research community, being ambassadors for UCPH and creating their own networks.

There is a need to have focus on how to prepare the students for a future career. This has to start from bachelor level to present career opportunities to the students and prepare them for their future work life. One way will be to have higher emphasis on student projects in in collaboration with the industry.

The Department wants also to focus on a working environment with room for diversity that will contribute to creativity. In this way talents can thrive, be further developed, and contribute to finding solutions for the challenges facing society.

Goal D. Improve governance and administrative support

PLEN wants to be a dynamic, robust organisation both in organising the sections and research groups, in governance and support functions. PLEN will use lateral themes to give the direction for the strategic development of both the staff plan, research and teaching. PLEN wants to create an optimal environment for research, governance and technical/administrative tasks at the Department and revise the budget model to be aligned with UCPH's new budget model.

The research funding landscape is dynamic and challenging, and there is a constant need for adaptive approaches regarding research topics, infrastructure, to meet the requirements of the future. It is important that everyone is aware of the dynamics and takes action when needed. There will be a need to adapt the organisation of PLEN to meet these future challenges, including a new UCPH budget model.

During the last couple of years, the funding landscape has changed.

- Public funding has decreased and focus here has been on funding for young researchers and well established researchers, leaving those in between in a vacuum.
- A greater proportion of funding comes from private funding channels, with no overhead or max 20% to cover indirect costs.
- A larger portion of funding requires collaboration with several partners, including industrial partners

To pave the way for new funding possibilities, which requires collaboration, PLEN will continuously have focus on participating in and driving networks across sectors and disciplines such as Crop Innovation Denmark and the Plant Biologicals Network. For PLEN, these networks are strategic initiatives and will be an investment in selected research areas.

With the current budget model, these changes in the funding landscape present a challenge, and there is a need to adapt the Department budget model to consider this. A new budget model needs to be developed and implemented as a management tool to include incentives and leave space for strategic initiatives, e.g. to support, develop and implement lateral themes. The organisation in terms of the size and number of sections and research groups will be revisited and revised when necessary, e.g. to support and give the possibility to new research group leaders to form their first group.

1. Attracting, developing and retaining academic talent

PLEN will promote cutting-edge infrastructures.

Motivation:

PLEN wants to maintain the high level of excellence in research and to attract and develop academic talent. To achieve this it is imperative to have cutting-edge infrastructures, both in terms of equipment and specialist knowledge.

Challenges:

The knowledge of PLEN infrastructures and how to get access to these, is not always available when recruiting new employees or even for employees at PLEN. In order to maintain cutting-edge infrastructures and ensure optimal use it is important to have specialist knowledge for running, and upgrading the equipment and developing procedures. The resources for this need to be found in

collaboration between the users in the section and at Department level, as this is not covered by most of the funding bodies.

Actions:

PLEN will inform about the infrastructures at the Department, and how to get access to these. PLEN will support the maintenance of the equipment and support the infrastructures employing specialists. This is to ensure management, development of the equipment, training and developing new protocols. The infrastructure listed in table 1 will be consolidated with an annual re-investment of 10% of the total value of the infrastructure.

PLEN wants to use internationally recognizable career positions, attractive on-boarding packages and research environments.

Motivation:

An important point when recruiting excellent new permanent employed researchers (professors, associate professors and tenure track assistant professors) in competition with other universities is to be able to offer attractive on-boarding packages. Likewise, it is important to promote and develop our scientific ranking when recruiting scientific employees to be one of the universities in focus when looking for job opportunities.

Challenges:

PLEN has a strong international research environment with excellent infrastructure. However, at the moment this is not sufficient to attract and recruit new employees for permanent academic positions. The requirements for the career path need to be defined to help both new and already employed at PLEN.

Actions:

PLEN will be more proactive to promote our excellence and be able to attract new employees. It will be imperative to develop on-boarding packages, though this will require financial flexibility.

The career paths at the Department will be made more transparent. The organisation should be supportive to pave the way for future career for every employee, whether it be in academic, public sector or industry positions.

PLEN will increase focus on equality and diversity to ensure that intellectual creativity and talent can flourish.

Motivation:

PLEN wants to focus on a working environment with room for diversity that will contribute to creativity. In this way talents can thrive, be further developed, and develop research ideas and contribute to solutions for the challenges facing society. Together with the scientific environment

and infrastructure, this will give room for creative minds. In collaboration with colleagues, these creative minds will create the basis for the future development at the Department.

Challenges:

It is important to have a broad diversity among employees though it is often similar profiles, which apply for the available permanent academic positions. To create synergy there will be a need to establish a culture that can comprehend and acknowledge a larger diversity.

Actions:

To attract more women in science, PLEN will work on a broader wording of the advertisement. Scientific excellence will not be the only focus point when recruiting new employees. On top of this PLEN will promote young scientists and give them the possibility to form their own research group early in their career.

PLEN will work to enhance staff and student mobility.

Motivation:

PLEN encourage employees to have work experience in their scientific curriculum from other places, either at other universities, public or private companies. PLEN will be proactive to encourage students to study abroad as this is a unique opportunity to develop an international network and get international experience.

Challenges:

Having experience working in different laboratories give insight in different research environment and create network. However, when first employed in a permanent position it is difficult to find resources and time to take a sabbatical to stay in another research environment. As every employees have both research activities and teaching obligations, it can be difficult to find time for sabbatical when teaching in courses and supervising student project.

At the moment it has been necessary to limit the number of agreements with other universities for student mobility's as only a few students take the opportunity for a stay abroad. From the students point of view it is difficult to choose between the possible universities, to arrange and finance the travel and stay abroad.

Actions:

PLEN wants to develop a mobility programme to encourage employees to take sabbaticals to visit and work in another environment.

To help the students and encourage them to take on a study abroad, meetings will be arranged in conjunction with their courses to inform them of the possibilities and how to engage in the practicalities regarding their stay.

2. Education with closer ties to research and practice

PLEN wants to strengthen the linkage between research and teaching – and vice versa.

Motivation:

PLEN wants to have a stronger link between the research areas and teaching when developing existing and new research areas. The education programmes and teaching are already closely connected to research where both teaching and research are found in three main scientific fields that constitute PLEN; Agriculture, Biotechnology, and Environment, and in the intersection between them.

PLEN will strengthen the research across the three main scientific fields, and will use lateral themes to develop new research areas across these. The lateral themes will generate synergy as the existing research areas give rise to new research areas and thereby create new funding possibilities and support the development of educations and courses.

In the future, PLEN wants to be known for its teaching and how it is closely connected to the newest research, and that theoretical knowledge is closely connected with practical training. Hands on experience is included both in the courses and in especially in the projects where the students are working directly in the research laboratories and scientific environment.

Challenges:

To maintain and further develop research-based teaching, there PLEN need to be in a close dialogue with the Heads of Studies and the fellow Departments at SCIENCE in defining the profile of the education programmes and courses anchored at PLEN. This need to be taken into consideration when recruiting new employees and when focusing on new research areas to be developed at PLEN to assure that courses in the future are also research based.

For many students, access to and experience in research laboratories come late in their education. The students appreciate a closer link to these facilities and it will give the students the feeling of “belonging” to the Department.

Today, there is a need for lifelong learning, and with the expanding knowledge and skills in PLENs scientific fields there can be an unused potential for establishing courses for continuing education.

Action:

PLEN has decided to initiate lateral themes across the three scientific fields. PLEN has prioritized three out of seven suggested lateral themes to start to be defined. The prioritized lateral themes are:

Microbiome in Action, Circular Biological Production Systems and Signal processing, Data analysis and modelling. These are the first lateral themes and in the coming years there will be new opportunities to suggest new lateral themes. The contribution to teaching in existing and future courses will be described along with the research area.

There will be focus on developing activities where the students and teachers interact outside the teaching hours. Likewise, there is focus on projects in the scientific environment and in collaboration with the public sector and private companies.

PLEN will focus on research-based teaching. PLEN will actively collaborate with other Departments and faculties to find the relevant teachers and courses for the educations anchored at PLEN. PLEN will be proponent that every Department follow the code of conduct in teaching to give the students the most optimal education. PLEN will evaluate the possibilities for continuing education in the research fields, among others, how to expand the opportunity to develop courses for DHC.

PLEN wants to promote challenging learning environments for students and employees.

Motivation:

PLEN wants to have an environment where there is the needed laboratory space to perform research and to meet the requirements of new cutting-edge infrastructure. The working environment is important, and PLEN is actively working for a culture where it is a part of everyday life at the Department. However, there will be an ongoing need to keep up the standard for a safe and secure working environment.

For PLEN it is important to ensure students a thriving study environment where they are near the research area. PLEN will work to find space for the students' activities outside teaching hour.

Challenges:

With all the building and renovation activities, the laboratory space is under constant pressure to comprehend new equipment. This also count when research groups expand. It is a challenge to keep up the high work environment standard with a high number of short-term employments with a diverse cultural background.

PLEN has not ample space to provide the students a room for social activities, beside from the rooms already allocated to them, which is room for cider production, growing edible fungi and storage room for the outside activities in OASEN and the introductory tour for the students.

Action:

In the new CPSC building, PLEN will create flexible laboratory space, which can be used by PLEN researchers. The working environment have a constant focus to have everyone to thrive at work. For the students, PLEN actively seeks to find possible space for social activities.

PLEN will further develop and implement digitalization in teaching.

Motivation:

Research groups at PLEN have been working with handling big data and have been at the forefront of digitalization for some time. PLEN recognises that there is a need to develop skills in this area both for the employees and for the students. Digitalization is taken into consideration when revising course content and when looking at the progression between courses. In this context, the education programmes in Biology-Biotechnology are the front-runners at the Department.

Challenges:

The definition of digital competence is broad. An overview of the existing competences the students obtain during their educations and the progression of these through the courses are lacking. The demand for digital competences from the stakeholders are expanding and not all teachers have these competences, as this is a rather new requirement.

Action:

The MSc Biology-Biotechnology education is one of the pilot educations in the digitalization focus from SCIENCE. Along with the work to include digitalization in this specific education, the other educations anchored at PLEN have started to focus on these competences. As the educations already have several digital competences included, an analysis of the needed competences is required. On one side, digital competences in the student curriculum needs to be included. On the other side, teachers need to be equipped with the required competences so they can develop the courses and include digitalization in teaching. PLEN will also work to widen the digital knowledge and competences of the teachers.

PLEN will attract and graduate talented students who possess solid academic skills, an understanding of practice and the ability to collaborate across field.

Motivation:

In recruiting students for the educations anchored at PLEN the focus will be to give coming students a clear idea of the educations' profiles so they can chose the right education. PLEN will influence the profile and make sure that there is an alignment of the expectations. PLEN wants to produce candidates with deep academic skills together with the ability to work across fields.

Challenges:

Besides, the basic scientific competences, there is continuous need to be aware of new skills to be included in the educations so the candidates will be attractive to the stakeholders. Beside from these competences there is a need to develop the ability to work across disciplines. It is essential to graduate candidates needed by the stakeholders to meet the criteria that the students get employment.

Action:

PLEN will work actively with the profiles of the educations anchored at PLEN, to align these and to meet the expectations of the future employees and when recruiting new students. PLEN will develop courses that give the students both the solid academic skills, solid background in natural science and the ability to work across disciplines.

PLEN will focus on carrier development in collaboration with external national and international partners.

Motivation:

PLEN wants to prepare the students for the future career paths and to assure that they will be attractive for the stakeholders and be employed shortly after graduating. The candidates educated at PLEN are recognised by stakeholders to have a deep natural science background and for being innovative when using their competences. To prepare students for their future career, students with different educational backgrounds, study and work together to get experience in solving cases by using competences across disciplines. It is important to have education programmes that meet the requirements of the stakeholders now and in the future e.g. digital competences.

Challenges:

Looking at the unemployment rate, especially the Biology-Biotechnology student are first employed long time after they graduate. This has led to the dimension of educations. However, students from all educations need to be prepared for their future careers.

Action:

PLEN will focus on activities to inform the students of their career opportunities and prepare the students for future job market. One way is to increase the involvement of stakeholders in teaching and to help the students to explore the possibility to have projects in collaboration with the public sector and private companies.

3. Collaboration and societal commitment – nationally and globally

PLEN will promote our scientific position internationally

Motivation:

Scientific position of research environments are recognized across academia and influences the evaluation of applications as well as the recruitment of employees. Several funding bodies require collaboration and the status as preferred partner is improved by the scientific position. PLEN wants to promote our position internationally, both in the scientific community to be the preferred partner in research collaborations and to attract talented employees.

Challenges:

PLENs three scientific fields, Agriculture, Biotechnology and Environmental Science, contribute significantly to UCPH ranking, however, the Department is not widely recognized for this. The funding landscape is changing and more calls are in collaboration with non-academic partners.

Actions:

Internationally, PLEN will improve and promote its scientific position by continue to publish in high-ranking journals. PLEN will develop a communication strategy to support and promote the Department's scientific position.

PLEN wants to contribute to resolving the major global societal challenges.

Motivation:

The research at PLEN has the knowledge and competences required to be a key player in resolving global societal challenges and to be part of producing candidates in this field. Research groups at PLEN are contributing to achieving the UN SDGs including:

- Ensure sustainable food supply and intelligent production
- Climate change adaptation and resilience
- Sufficient freshwater quality
- Emerging technologies – for the development and production of bio-based products

Several research groups at PLEN have a long track-record working in these areas, and this has made PLEN well known around the world. Most of the basic research at PLEN has likewise applied goals, which contribute to the societal challenges.

Challenges:

The 17 UN Sustainable Development Goals have a major impact on how many foundations define their specific calls. It is necessary to create attention to and understanding of the goals so that the research can be set into the required context and direction.

Actions:

PLEN wants the researchers to be aware that most of PLEN's research addresses several of the SDGs. The researchers will be primed how to address specific foundations' wish to address selected SDGs in their calls.

PLEN will develop lateral themes to create collaborative environments within PLEN and across UCPH Departments.

Motivation:

PLEN wants to strengthen the collaboration and synergy of research across the three main scientific fields by lateral themes. These overarching lateral themes can help to establish linkages across sections or SCIENCE departments and highlight areas of strategic importance. PLEN wants to promote a collaborative culture inside the Department and be the preferred partner within UCPH and with private companies and the public sector, nationally and internationally.

Challenges:

There is a need to focus on how the potential synergy between the scientific fields at PLEN can be exploited and supported. Today excellent research also requires collaboration between scientific groups, and it is important to be a preferred partner.

Actions:

Three lateral themes have been prioritized to start in 2018 to be defined and later integrated in the Department's research areas. Task forces will be established to define these topics and how they can be integrated in the Department's research and teaching. The lateral themes will be used to develop PLEN and strengthen visibility within the area.

PLEN will strengthen private and public research partnerships in Denmark and globally.

Motivation:

PLEN wants to be known as the preferred collaborative partner. Working in the range from basic science to applied research covering from elements to ecosystems gives PLEN the opportunity to be an attractive partner in public and private partnerships. This combination of basic and applied research has already allowed PLEN to build a portfolio of external partners.

Challenges:

The funding landscape is changing, and in order to be competitive it is necessary to enter collaborations with both academic institutions, public sector and private companies. Strong partnerships are crucial for addressing new challenges that have an impact on society, for developing new solutions and for attracting funding.

Actions:

PLEN will expand the knowledge of the existing networks and use them actively for funding possibilities. PLEN will have focus on how to help the younger and/or foreign researchers to establish networks and get into contact with the right partners. Nationally, PLEN has been the driver of establishing two networks.

- Crop Innovation Denmark, CID.
 - This is a strategic network of all Danish breeders together with UCPH, Aarhus University (AU) and Aalborg University (AAU) deciding on topics of mutual interest for which funding is applied in collaboration.
- Plant Biologicals Network, PBN
 - This network was launched in the autumn 2018. This is a collaboration between Novozymes, Bayer Crop Science, FMC, the following universities UCPH, AU and SLU in Sweden, as well as the Danish Technological Institute. The focus of the network is to exchange knowledge regarding plant biologicals.

To strengthen and optimize collaboration with private companies, PLEN will be open to include private companies at the Department's premises. This has already led to several applications and funding in collaboration with these companies.

PLEN will also actively use these networks in teaching to give the students insight in how their knowledge will be used in possible career possibilities.

4. One unified and focused university

PLEN will balance the size and number of sections and research groups.

Motivation:

PLEN has successfully developed a united Department with common values. The building blocks in the organisation of the Department are the research groups. To be able to develop further and to meet the future, the organisation and the research structure of sections and research groups have to be dynamic.

Challenges:

There is a flow of young researchers coming to the Department and depending of their funding success there is a continuously need to look into the need to establish new research groups. At the same time there is a need to revise the existing research groups e.g. due to generation transition.

Actions:

To refine the organisation, the management guidelines are updated with new requirements. As the organisation needs to be dynamic, it is timely to revisit the size and structure of the sections and research groups.

PLEN will integrate the lateral themes to direct the development of the Department, both for teaching, funding initiatives and when attracting new employees.

Motivation:

PLEN wants to develop and strengthen the three main scientific fields, Agriculture, Biotechnology and Environmental science, and their intersections. The integration of the lateral themes will create synergy, not only within the Department, but also across UCPH. Their success will be measured by the extent to which the lateral themes are integrated into research and teaching. This will create new possibilities for collaboration and funding nationally and internationally.

Challenges:

There is unused potential across the strong scientific fields at PLEN. This gives a unique possibility to develop new research areas when researchers across the disciplines work together to define new lateral themes.

Actions:

When the task force has defined the new lateral themes, the success will depend on how these will generate a new research area, which will be included in one or more sections at the Department. Likewise, it will be integrated in the course portfolio at the Department. How it will be included in the long-term staff plan for the Department depends on the progress of the new research area.

PLEN wants to adjust the Department budget model to the University/Faculty budget model.

Motivation:

In order to have a robust organisation it is important to have a budget model supporting the main activities at the Department, research and teaching. PLEN will adjust the budget model to sustain this and to support the main scientific fields and infrastructure at PLEN. Administratively, PLEN needs to align with the upcoming new UCPH budget model.

Challenges:

It is important to assure continuity at the Department to meet generation transition, and to keep cutting-edge infrastructure both equipment and expertise. There is a need to have focus on developing key activities within both research and teaching.

Actions:

PLEN will revise the current budget model to include incentives to support research, infrastructure and teaching. The budget model will be aligned with the strategic decision by the management to assure continuity. When the new UCPH budget model is conveyed, PLEN will align this.

PLEN wants to optimize the high level of external funding.

Motivation:

PLEN will optimize the external funding in a focused and coordinated effort on three levels: 1) strategic initiatives, 2) priming of PLEN researchers and 3) professional funding support.

It is necessary to maintain the high level of external funding at PLEN. PLEN researchers already submit a large number of applications. However, the success rate can be improved by optimizing the application process. Likewise, PLEN wants to be proactive and strategic in affecting upcoming calls or research policy to ensure inclusion of PLEN's research areas.

Challenges:

There are several challenges in the funding landscape. Public funding has decreased and focus here is funding for very young researchers and well-established researchers, leaving those in between in a vacuum. Most calls have changed from primarily having focus on free research, towards calls with specific requirements, e.g. collaborative projects with the industry or addressing specific societal challenges. In addition, a greater proportion of funding comes from private funding channels, with no overhead or max 20% to cover indirect costs.

Actions:

PLEN will work strategically on influencing the relevant research policy agendas by proactively contributing to national and European reports or work programs, which serve as the basis for defining public funding (FORSK2025, EU framework programs, World Class food innovation, Bioeconomy Panel Reports etc.) and by participation in relevant committees and fora for lobbying for PLEN research areas. The international foundations, such as e.g. Bill and Melinda Gates Foundation are an unexplored relevant funding source at PLEN and here PLEN wants to build up experiences and competences as to how to approach these foundations.

The already established priming efforts at PLEN will be elaborated and coordinated. The researchers will timely via mails and meetings be provided with up to date knowledge of the research political agendas which are relevant for the specific calls. The meetings also serve as a forum for potential applicants to discuss possible collaborations and to exchange knowledge about external collaboration partners. The young researchers need to be trained to be able to see the possibilities to work with industry and they need to be introduced to the relevant companies and how they approach them.

Selected calls with large grants (e.g. the Danish National Research Foundation and the Novo Nordisk Foundation Challenge) require strategic considerations for PLEN and the potential main applicants will be invited to present their idea to the PLEN Executive Board. This is to ensure strategic alignment with the development of PLEN's research areas and research based teaching.

PLEN will continue to have emphasis on improving professional project management support that is capable of administrating large, multi-actor projects from several grant-givers.

The researcher is offered individual support to ensure a professional and focused application. Funding support ensure that the right partners and support offices at SCIENCE and UCPH are involved in the process enhancing cross going collaboration.

5. Process and employer engagement

The goals for the PLEN Strategy 2023 were developed with input and inspiration from the 24-hour seminar held in April 2018. 73 employees and students participated, representing several fora, including the Executive Board and Head of Sections, Research Group Leaders, teaching and research committees, the local collaboration committee, Head of Studies, and representatives from the student organisation. The goals were finalised after being discussed in the Executive Board and the PLEN Leader Team (PLT).

The first draft of the Goal and Action Plan has been discussed in the above mentioned fora, which participated in the 24-hour seminar. The students' input was further ensured with contributions from the teaching committee and the newly formed PLENrådet, including the chairperson of the student organisation and the Executive Board.

6. Action Plan 2018/2019

6.1. Attracting, developing and retaining academic talent.

Goal	Activity	Short description of the activity	Responsible
PLEN will (B.2) Promote our cutting edge infrastructures			
Infrastructure database updated on KU intranet and PLEN Webpage	Activity B.2.1. Increase visibility, access and knowledge of infrastructure possibilities	Keep the infrastructure list up to date to increase the knowledge.	VILF

PLEN will (C.1) Use of internationally recognizable career positions, attractive on boarding packages and research environment			
The promotion guideline is integrated in existing PLEN tenure staff development plan	Activity C.1.1. Prepare UCPH promotion program (associated professor to professor)	Guidelines for promotion criteria, MUS, appraisals and promotion dossier will be discussed in a task force and a draft is handed over to the executive board	IL
PLEN will (C.4) Enhance staff and student mobility.			
Guideline for a sabbatical program developed. The sabbatical program communicated and used	Activity C.4.1. Set up a program for employees to take sabbatical	Encourage scientists to be mobile and have a stay abroad before and while they are employed at PLEN. Suggestions and guideline for a sabbatical program will be discussed in the PLEN research committee. A hearing process involving the Head of Sections and Research Group Leaders will be initiated. PLEN Executive Board takes the final decision on how the sabbatical program will be set up based on the input from the PLEN research committee and the hearing.	VILF
Information meetings for all BSc educations in collaboration with SCIENCE international students office	Activity C.4.3. Increase collaboration with SCIENCE international students office and the Head of studies.	Studying abroad gives students an excellent opportunity to gain inspiration from different research environments and cultures. Facilitate and further support the collaboration with SCIENCE international student office and the Head of Studies.	VILU

6.2. Education with closer ties to research and practice.

Goal	Activity	Short description of the activity	Responsible
PLEN will (A.3) Strengthen the linkage between research and teaching – and vice versa			
Extra curriculum activities involving both students and researcher	Activity A.3.1. Developing the newly established PLENråd to involve and engage students in creating the linkages	PLENrådet consisting of PLEN executive board and the chairmen from the relevant student organization meet twice a year to discuss and exchange information on how to improve the study environment and create linkages between researchers and students. 1-2 extra curriculum activities are discussed, developed using this forum.	IL

Possibilities for PLEN to start activities for continuing education	<p>Activity A.3.2. Overview of the possible research areas suitable for continuing education.</p> <p>Activity A.3.3 Establish courses in relation to the requirement of Danish fellowship center</p>	<p>PLEN will in dialogue with SCIENCE and IMPLEMENT evaluate the possibilities for continuing education.</p> <p>An overview of the existing activities will take place.</p> <p>Focus on the required wishes for developing courses in DFC regime and prime researchers to be involved both in the development and teaching in these courses</p>	<p>IL</p> <p>VILF</p>
PLEN will (A.4) Promote challenging learning environments for students and employees			
PLEN50 lunch meetings and an annual developmental seminar	Activity A.4.4 PLEN50meetings – a meeting ground for the 50 research group leaders at PLEN	Engage the research group leaders in academic leadership via PLEN50 lunch meetings and the annual developmental seminar.	IL
PLEN will (A.5). Further develop and implement digitalization in teaching			
Digital competences (software literacy) are defined in the student curriculum	<p>Activity A.5.1 BSc Biology – biotechnology is a pilot education to further implement digitalization</p> <p>Activity A.5.2 Implement ideas from the annual PLEN teaching day.</p>	<p>BSc Biology-Biotechnology are one of the pilot educations implementing digitalization. For all educations, following points will be discussed involving Head of Studies and the course responsible:</p> <ul style="list-style-type: none"> • Mapping of the specific digital competences trained and the progression in software literacy obtained • Overview of required additional digital competences • New course in data handling at MSc level. <p>Digital competences are requested part of all courses and there is a need to look at the progression of these competences.</p> <p>Build competences for the teachers, or focus to involve the colleagues having this knowledge.</p>	<p>VILU</p> <p>VILU</p>
Digital teaching methods included in teaching	Activity A.5.3 Collaborate with ITLC to improve the skills in the digital teaching methods	Before each teaching block, lunch meeting will be held with course responsible and teachers for the following block and ITLC. The focus is to exchange knowledge and to get new tips and tricks from ITLC.	VILU

6.3. Collaboration and societal commitment – nationally and globally.

Goal	Activity	Short description of the activity	Responsible
PLEN will (B.1) Promote our scientific position internationally			
PLEN participate in research and innovation policy fora or boards	Activity B.1.1 Be proactive in affecting the call text to include topics central for PLEN	Use the windows of opportunity to influence call text to include research topics relevant to PLEN. PLEN participate active in 3-5 research or innovation policy fora or boards	IL
On-boarding package implemented in new tenure positions	Activity B.1.2 Create attractive positions	Development of on-boarding packages incl. access to infrastructures, access to stipends, network (PLEN50 and other networks), funding support and other services for new tenure employees	AC
PLEN will (A.1) Contribute to solve the major global societal challenges			
Pre-award concept is developed and implemented	Activity A.1.1 Priming and pre-award in connection to funding opportunities	To ensure that PLEN scientists are aware of possible funding opportunities priming of relevant researchers will take place well before the calls deadline. Targeted pre-award support is developed in collaboration with research group leaders, PLEN funding support team and PLEN executive board At least 5 targeted PLEN50 priming meetings;	VILF
Strategy for PLEN engagement in the global challenges	Activity A.1.2 Create visibility and attention of global development as a theme across the Department	Mapping of PLEN research and teaching competences with funding opportunities	VILF
PLEN will (A.2) Development of lateral themes to create collaborative environments within PLEN and across UCPH Departments			
Lateral themes in action and additional themes defined	Activity A.2.1 Establishing task force groups for the three prioritized lateral themes and defined two new themes	Activities determined by the task force leader, with guidance from a steering group and confirmed by the executive board. New themes are identified at the annual PLEN development seminar The first lateral themes are: <ul style="list-style-type: none"> • Microbiome in Action, • Circular Biological Production Systems • Signal processing, Data analysis and Modelling 	IL
PLEN will (B.3) Strengthen private and public research partnerships in Denmark and globally			
PLEN is active in public-private partnerships	Activity B.3.1 Develop PLEN as an agile partner in private and public partnerships	PLEN will be known as an attractive partner in the intersection from basic to applied research. PLENs collaboration	IL

		<p>with private companies in a large proportion of PLEN research projects and student project will be strengthened. PLEN</p> <ul style="list-style-type: none"> • will actively contribute to develop common initiatives and networks - both nationally and internationally. • will promote graduated candidates • will develop new ideas for new research collaborations 	
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6.4. One unified and focused university.

	Activity	Short description of the activity	Responsible
PLEN will (D.1.) Balance the size and number of sections and research groups			
Upgrade and revise the organization of the Department	Activity D.1.1. Upgrade the organization of the Department	<ul style="list-style-type: none"> • The research groups are dynamic entities, and is to be revisited as a min every 3rd year. • Revise the description of sections and research groups and the delegations to head of section and research group leaders 	IL
PLEN will (D.4.) Optimize the high level of external funding			
Improved funding success rate by 5 % (numbers and amount) at the Department level	Activity D.4.2 optimize the applications to achieve external funding	<ul style="list-style-type: none"> • Lobbying – to ensure that PLENs research areas are in the core of the calls • Priming of scientists for relevant calls • Prioritized, improved pre-award support (PLEN executive board) • Use PLEN50 as an interactive forum to share best practice with different private and public funds 	IL