

Towards a Sustainable Research Climate

Ambitions and Success Factors for Research at Universities of Applied Sciences



HBO-raad, the Association of Universities of Applied Sciences'
January 2010

www.hbo-raad.nl/english

Contents

1. Introduction	4
2. Development and extent of the research activities of universities of applied sciences	5
3. Success factors and ambitions.....	8
3.1 Strengthening the relationship between research and education	8
3.2 Development of networks and cooperative relationships	10
3.3 Increasing social relevance and visibility	12
3.4 Further development of quality and quality assurance	14
3.5 Upgrading the qualifications of staff and expanding staff and facilities	16
3.6 International exchanges and benchmarking	19
3.7 Ensuring that the research activities are focused and have sufficient mass	20
3.8 Developing solid and substantial funding	21
4. Recommendations	24
Table: Ambitions corresponding to the success factors	25
4.1 Universities of applied sciences.....	25
4.2 Netherlands Association of Universities of Applied Sciences (HBO-raad)	26
4.3 Forum for Applied Research	27
Addenda	29
Addendum I: Overview of the recommendations of stakeholders	29
Addendum II: International comparison of research carried out by universities of applied sciences	32
Addendum III: Description of applied research (Branch Protocol for Quality Assurance in Research, 2007).....	34

1. Introduction

This discussion document on research at universities of applied sciences was drawn up by the Strategic Working Group on Research¹ at the request of the Board of the Association. The discussion document aims to give direction to the further positioning, expansion and development of the quality of research at universities of applied sciences. The contents of this discussion document are an extension of the more generally formulated ambition of the universities of applied sciences with regard to research, as set out in the strategic agenda '*Dedicated to Quality*'.²

An earlier version of this discussion document was central to a conference on research held on 30 October 2009, organised by the Forum for Applied Research (the professors' forum) and the Netherlands Association of Universities of Applied Sciences. The discussion document was amended and adopted on the basis of the outcomes of this conference.

As in the case of *Dedicated to Quality*, 'quality' is the golden thread running through this discussion document. The Strategic Working Group on Research is also convinced that achieving good quality and making it clearly visible is the most important key to permanent and far-reaching success. The working group is without doubt that a sustainable research climate at universities of applied sciences is a necessary condition for a structural improvement in the level of education and a general improvement in quality. In the opinion of the working group, research and education are indivisibly linked as two equivalent pillars on which the universities of applied sciences rest.

As in *Dedicated to Quality*, the diversity of universities of applied sciences was the point of departure for the working group. The differences in the ambitions, positions, size, nature etc. of the universities of applied sciences exclude complete uniformity of policy and approach. At the same time, due to their shared objectives, that which unites the universities of applied sciences must be sought. From this perspective arguments must be put forward to highlight points on which it is desirable, and sometimes necessary, to act together to position, expand and improve applied research. This discussion document focuses on this. It has been written primarily for professors, lecturers/researchers, directors, policy advisers and managers at the universities of applied sciences themselves, and for the Forum for

1 Henk Pijlman (Hanze University Groningen), Jos Willems (Zuyd University), Joke Snippe (INHOLLAND University of Applied Sciences), Henk Borgdorff (Amsterdam School of the Arts) and Huib de Jong (Utrecht University of Applied Sciences), with the support of the office of the Netherlands Association of Universities of Applied Sciences (HBO-raad) by Marcel de Haas, Maarten Dijk and Johannes van der Vos
2 *Dedicated to Quality*, Netherlands Association of Universities of Applied Sciences (2009).

Applied Research and the Netherlands Association of Universities of Applied Sciences.

In section 2, the working group provides an outline of the development and extent of research at universities of applied sciences up until the present. In section 3, the working group identifies the success factors which, in its view, determine the path towards a sustainable research climate. In doing so, it has based its findings on the analyses and recommendations of stakeholders and experts, including international stakeholders and experts. The general situation at universities of applied sciences is described in relation to each success factor, as are the ambitions which flow from this. Section 4 concludes with the most important challenges implied by the ambitions in the form of recommendations to each of the three parties involved, namely the universities of applied sciences, the Netherlands Association of Universities of Applied Sciences and the Forum for Applied Research.

2. Development and extent of the research activities of universities of applied sciences

Since the introduction of professors and professorships in 2001, the research function of universities of applied sciences has acquired a permanent and unmistakable position. The remarkable phenomenon that universities (of applied sciences) in the Netherlands had deficiencies in the area of research has consequently been relegated to the past. The fact that higher education cannot do without research is now recognised and acknowledged on numerous fronts. For instance, during the European Conference of Ministers in Louvain in April 2009,³ an unequivocal appeal was made for the further strengthening of the knowledge and research function of European universities of applied sciences. The international Abrahamsen Commission⁴ had earlier expressed surprise at the lack of this interaction within Dutch universities of applied sciences. Closer to home, through its valorisation agenda, the Innovation Platform⁵ emphasised the indivisibility of the education triangle, namely education, research and valorisation. In a knowledge society and knowledge economy, higher education without research is no longer conceivable.

3 Louvain Communiqué, 2009

4 *Bridging the Gap between Theory and Practice: Possible Degrees for a Binary System*, Report of the Commission for the Review of Degrees for the Dutch Ministry of Education, Culture and Science, 2005, p.48.

5 "Van voornemens naar voorsprong: kennis moet circuleren. Voorstel voor een Nederlandse valorisatie-agenda" ["From Intentions to Advantage: Knowledge Must Circulate", Proposal for a Dutch Valorisation Agenda (Innovation Platform 2009)].

On the basis of SKO and RAAK subsidies, approximately 440 professors (see Figure 2) have been appointed since 2001 and more than 200 RAAK projects have commenced. Originally strengthening the research function was only a secondary focus of both subsidies. However, the evaluations show the extent to which the sustainable success of the objectives of both SKO and RAAK depend on the research function. It is not without reason that the SKO subsidy has since been converted into lump-sum funding and the emphasis of RAAK schemes lies increasingly on research. The research of universities of applied sciences is now also anchored in legislation. This also emerges clearly from the evaluations carried out by SKO⁶ and SIA,⁷ which show where the strength of the research carried out by universities of applied sciences lies. The self-evident interaction with professional practice is characteristic of the *education* provided by universities of applied sciences and therefore also to their *research*. Professional practice improves and innovates on the basis of research founded upon knowledge development, knowledge circulation and knowledge valorisation. In addition, the interaction between research and education ensures that graduates enter employment with new and innovative knowledge and research competences. The social and economic advantage of research to society is altogether clear.

The development of the research function is entirely consistent with the transition which universities of applied sciences are undergoing from being educational institutions to being knowledge institutions or, in other words, from being Institutions of Professional Education to being Universities of Applied Sciences. A successful transition in this regard, however, requires a sustainable climate for research at universities of applied sciences. What, though, are the characteristics of a sustainable research climate in the context of universities of applied sciences and what conditions have to be met for such a climate to exist? This is the topic of the following section.

Total	
Other 38%	Lump sum (from SKO) 51%
RAAK 11%	

⁶ 'Professorships at Universities of Applied Sciences 2001-2008' (final evaluation by Stichting kennisontwikkeling hbo [Foundation for Knowledge Development at Universities of Applied Sciences], 2009).

⁷ *Beleidsevaluatie RAAK! 2005-2008*, (Stichting Innovatie Alliantie, SIA 2009) [Policy Evaluation of RAAK! 2005-2008, (Innovation Alliance Foundation)].

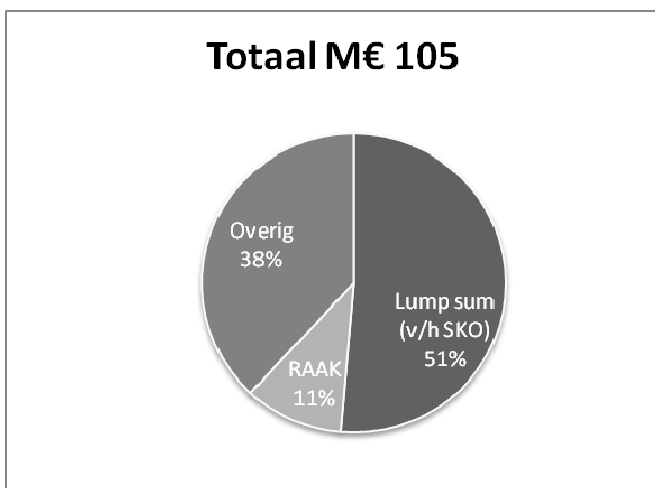


Figure 1: Research funding 2008

	Professorships	Lecturers and other researchers
Number	440	2200
FTEs	224	704
Average appointment	0.51 FTE	0.32 FTE
With doctorates	65%	8%
Conducting doctoral research	6%	29%
Relative to student numbers	1 FTE to 1714 students	1 FTE to 547 students
Relative to lecturing staff	1 to 50 lecturers	1 to 10 lecturers

Figure 2: Deployment of staff to research 2008

Source: Pilot landelijke monitoring onderzoek 2008, HBO-raad [National Research Monitoring Pilot 2008, Netherlands Association of Universities of Applied Sciences (HBO-raad)]

3. Success factors and ambitions

In the discussion below, the strategic working group make use of the analyses and recommendations of various stakeholders (see Addendum I). In addition to these 'national' sources, the working group also based its findings on the exploratory research⁸ carried out by the European Network of Universities of Applied Sciences (UASNET). In addition, the authoritative study by Ellen Hazelkorn (2005)⁹ served as a source. On the basis of these sources, the working group was able to identify eight critical factors which, both from a national and a European perspective, appeared to determine the successful development of research at a University of Applied Sciences:

1. strengthening the relationship between research and education;
2. the development of networks and cooperative relationships;
3. increasing social relevance and visibility;
4. the further development of quality and quality assurance;
5. upgrading the qualifications of staff and expanding staff and facilities;
6. international exchanges and benchmarking;
7. ensuring that the research activities are focused and have sufficient mass;
8. developing solid and substantial funding.

Each of these factors is explained in more detail below with a focus on the situation at the universities of applied sciences. Each paragraph concludes with a small number of ambitions, formulated as concretely as possible, and target figures for the year 2015.¹⁰

3.1 Strengthening the relationship between research and education

The evaluation by SKO refers to the introduction of professors at universities of applied sciences as a 'successful educational innovation'. However, it was (and is) a *necessary* innovation. An institution which prepares students for higher positions in their professions must equip them with the most up-to-date and new knowledge, but also with competences in the area of analysis and research. Knowledge is soon obsolete and professionals must be able to identify, develop and utilise new knowledge. Research gives rise to insights into the process of innovation in

8 European Network of Universities of Applied Sciences (UASNET) (2009), Research at Universities of Applied Sciences in Europe: Conditions, Achievements and Perspectives.

9 Hazelkorn, E. (2005), University Research Management: Developing Research in New Institutions.

10 This focus was chosen because it mirrors the long-term agreements which the Netherlands Association of Universities of Applied Sciences has entered into with the Ministry of Education, Culture and Sciences on the upgrading of staff.

professional practice. In doing so, it provides practice-based evidence which has an impact on the contents of the curriculum. The presence of applied research also contributes to a challenging research climate. In such a climate, reflection and a focus on research competences develop better.

Through contact with research, students learn to analyse, to view the facts critically, to reflect and to carry out independent research. Through this they acquire 'research competences' which are of considerable value in their later professional practice. As the communiqué of the Conference of European Ministers of Education in Louvain expressed this: "Higher education should be based at all levels on state of the art research and development thus fostering innovation and creativity in society. We recognise the potential of higher education programmes, including those based on applied science, to foster innovation. Consequently, the number of people with research competences should increase".



Figure 3: Education and research as two equivalent pillars

Research, however, does not benefit education as a matter of course. To enable education to reap the fruits of research, a number of factors must be organised and managed proactively. In this regard, universities of applied sciences make different choices, depending on their mission, their nature and the size of their organisations. A uniform approach is not possible in relation to this. However, universities of applied sciences will have to answer the same questions, such as whether their organisational structures are conducive to bringing together research and education. Another question they will have to ask is whether research competences constitute a sufficiently large and sufficiently permanent part of their bachelor's and master's curricula.

The relationship between education and research is an important aspect of the recently introduced quality assurance system for research (see subsection 3.4). In other words, universities of applied sciences explicitly include such questions in their quality assurance, including the evaluations of research units. In quantitative terms, however, questions may be asked about the relationship between research and education, such as whether the ratio of professors to students is adequate. Another question that may be asked is whether there are sufficient lecturers who combine education and research.

Ambition

Research and education must be regarded as two equivalent pillars. They are indivisibly linked to each other and through their interaction reinforce the level and quality of universities of applied sciences (see Figure 3). This situation can only be realised optimally if the number of *research activities* within universities of applied sciences is increased substantially. To achieve this, it is necessary that concrete ambitions be formulated on the basis of quantitative indicators. The working group therefore recommends the following indicators in this regard:

- 1 FTE at professorial level for every 720 students¹¹ (currently 1:1714)
- 20%¹² of lecturers active in the area of research (currently 10%)

3.2 Development of networks and cooperative relationships

An important principle of applied research is cooperation with the profession. After all, knowledge cannot be the preserve of knowledge institutions, but originates through interactive cooperation between these knowledge institutions and the professions. Universities of applied sciences can play an important role in the emergence of 'communities of practice', in which lecturers/researchers, professional practitioners and students learn together to introduce innovation into professional practice. In this way, the research carried out by universities of applied sciences can offer results which can be applied by companies and public institutions.

The SIA evaluation points to the numerous advantages to SMEs and public-sector institutions generated by research. The research carried out by universities of

¹¹ By way of comparison, traditional research-intensive universities have one FTE at professorial level per 96 students.

¹²The working group based its findings in part on the situation in other countries. For instance, in Belgium a norm of 20% is often applied in evaluations with regard to increasing the academic nature of universities of applied sciences.

applied sciences also increases welfare and prosperity. It stimulates high-quality education and makes a contribution to the circulation and knowledge between universities of applied sciences and professional practice. Graduates are better prepared for a world in which development and application are ever more closely related to each other. In addition, research delivers concrete results which can be applied by companies and public-sector institutions. The research is demand driven in the sense that the questions raised emerge from interaction with the corporate sector, SMEs and the public sector. However, it is not a question of "you demand, we produce", but a question of strategic and relevant knowledge development with and for professional practitioners. By programming research well and systematically, and by approaching it academically, a contribution can also be made to sustainable knowledge development and science.

A large part of the strength of applied research lies in the way in which it is designed and implemented, namely in close cooperation with professional practitioners through networks and cooperative relationships. The RAAK projects have made a laudable contribution to this. The monitoring of the RAAK projects shows that in 2009 no fewer than 3,150 entrepreneurs and 1,350 public-sector institutions were involved in these projects. As regional knowledge institutions, universities of applied sciences have consequently gained in strength in recent years. The applied nature of the research and of the other knowledge activities increasingly ensures that this relatively new role is acknowledged and supported.

In addition to being regional partners, universities of applied sciences are increasingly becoming players on the international playing field. Depending on their international ambitions, universities of applied sciences will not only develop regional and national networks, but will often also have to build international networks. The RAAK *international* scheme will also provide a stimulus. In addition, the participation of universities of applied sciences in UASNET offers prospects in this regard (see subsection 3.6). After all, European cooperative relationships may emerge more easily through this network.

The Higher Education Funding Council for England (HEFCE) has calculated that long-term investments with the aim of strengthening cooperation between higher education, companies and society generate five to seven times the value invested. The added value is probably even higher because the social impact is sometimes difficult to quantify.¹³

The strength of universities of applied sciences lies in the fact that they have only been on the market for a relatively short period and can therefore achieve results quickly. With regard to applied research, this implies public-private cooperation to deal with concrete social issues, such as sustainability, care (for the aged),

¹³ Evaluation of the Effectiveness and Role of HEFCE/OSI Third Stream Funding, HEFCE 2009

entrepreneurship and cultural diversity. On the basis of public-private cooperation/networks, which focus on addressing social issues, the context in which universities of applied sciences operate is enriched and deepened. The networks become more sustainable and more fundamental, with a greater focus on the long term and on the transformation process. Universities of applied sciences are faced with the challenge of organising this rich context well.

Ambition

The relationships with employers should not only be formulated in quantitative terms. The sustainability, intensity and productivity of these relationships are at least as important (in both the private and the public sectors).¹⁴ Nevertheless, an increase in the number of contacts with employers is necessary for the link with professional practice and the visibility of this. The following indicators may be used for this:

- Entrepreneurs involved in research activities: 10,000
- Professionals employed by public-sector institutions involved in research activities: 5,000

3.3 Increasing social relevance and visibility

The social recognition of the research carried out by universities of applied sciences has grown rapidly.

This will broaden further as this research contributes more visibly to concrete solutions to the problems and challenges which society faces. In this regard, it is good to realise that the boundary between the public sector and the private sector is becoming blurred. Entrepreneurs have a much more social orientation, with a long-term focus. What is important is no longer only the added economic value, but also the added social value which companies generate. The government and the market cannot solve social issues on their own, but need each other. These issues are too complex. Not the economy, but society as a whole, requires knowledge.

Valorisation

The valorisation agenda, 'Knowledge Must Circulate' should be mentioned in this regard. The responsible ministries (the Ministry of Education, Culture and Sciences, the Ministry of Economic Affairs and the Ministry of Agriculture and Fisheries), as well as branch organisation's, combined forces in December 2008 and signed this agenda aimed at improving the valorisation process in the Netherlands. With this agenda, 50 organisations, including the Netherlands Association of Universities of

¹⁴On the basis of their educational activities, universities of applied sciences maintain close contact with the employers. These contacts have not been taken into account here, but they are substantial.

Applied Sciences, together put their shoulders to the wheel to support 12 activities aimed at promoting the utilisation of knowledge in the economy and society. The activities included in the valorisation agenda include, for instance, the endeavour to make a joint and substantial investment in valorisation, setting up joint (regional) basic facilities to support valorisation activities by providing expertise, facilities and capital, promoting entrepreneurship in education, including valorisation as a quality criterion for knowledge institutions, and setting up a prestigious, national valorisation prize.

The universities of applied sciences have agreed to take up the following matters:

- valorisation is one of the key tasks of the universities of applied sciences and will be embedded in their strategies;
- as of 2010, attention will be paid to valorisation as part of quality assurance;
- the professionalisation of valorisation tasks will be continued; and
- cooperation will take place with other parties to realise the necessary basic valorisation facilities.

The government will allocate €20 million in 2009 to creating basic facilities and, in addition, will rationalise and merge the existing schemes. At the national level, a new valorisation committee will also be created, consisting of the parties which are signatories to the valorisation agenda. Mr Aad Veenman, the previous managing director of Nationale Spoorwegen, will lead this committee.

Accessibility of research results

Making research results more accessible will also contribute to the social recognition of research carried out by universities of applied sciences and its impact. This requires, for instance, good infrastructure for the dissemination of research results, which facilitates both research and education, and developments in professional practice. The infrastructure required to disseminate information broadly is still relatively scant at present and requires additional investment. In this regard, it is important that concepts and applications are developed which do justice to the knowledge tasks of the universities of applied sciences, namely the development of applied knowledge, co-produced with stakeholders. Consideration could be given to dissemination and interaction through ICT platforms which make available a broad range of knowledge products, but which also stimulate and facilitate virtual and real communities of practice.

In this regard, it is important to take as the point of departure open access and knowledge sharing. In the autumn of 2009, the Netherlands Association of Universities of Applied Sciences signed the so-called 'Berlin Declaration'. In signing this declaration, the universities of applied sciences indicated that they wished to make an effort to provide public access to and to distribute research results. In a knowledge society, it is important that knowledge can flow freely, from researchers to professionals, from knowledge institutions to companies and public-sector institutions, but also vice versa. The Open Access movement is committed to the

free and efficient exchange of knowledge. With the arrival of ICT and the Internet, new and innovative ways of sharing knowledge have emerged. The Open Access movement is leading the way in relation to these developments. By nature, universities of applied sciences have good links to the professions for which they educate students. Open access strengthens this relationship and offers opportunities for the further deepening of essential knowledge circulation. Universities of applied sciences may be expected to make a robust contribution in the coming years to the further development of open access in the Netherlands and elsewhere.

Ambition

Jointly making knowledge products and research results visible is essential. At present, only 18 universities of applied sciences are included in the knowledge database of the universities of applied sciences. The working group recommends the realisation of a knowledge database in which *all* the universities of applied sciences participate and which they should fill substantially with knowledge products and which is accessible in a 'user friendly' way to professional practitioners. In other words, this involves not only an expansion of the existing content (a databank consisting mainly of graduation research papers), but also different content, partly fed by the professorships.

3.4 Further development of quality and quality assurance

In 2007, the universities of applied sciences signed up to the Branch Protocol for Quality Assurance in Research (*Brancheprotocol Kwaliteitszorg Onderzoek (BKO)*). This Protocol laid the basis for a national quality assurance system for applied research carried out by universities of applied sciences. In the Protocol, the Association makes a clear choice in favour of a common designation and description of the research carried out by universities of applied sciences. With the designation 'applied research', as the collective term for this research, this designation is given preference in the Branch Protocol above other designations, such as 'practice-oriented research' or 'design-oriented' research. These designations do less justice to the nature and diversity of the research carried out by universities of applied sciences.

Applied research is described (briefly) as research which is rooted in professional practice and contributes to the improvement of and innovation in professional practice (for the full description contained in the Protocol, see Addendum 3). This takes place by generating knowledge and insights, but also by delivering applicable products and designs, as well as concrete solutions to the problems faced by

professional practitioners. In addition, the research is generally multidisciplinary or transdisciplinary by nature and is embedded in a range of internal and external organisational relationships, while retaining the academic reliability and validity of the research itself. The research bears a close relationship to the education offered, by contributing to educational activities, to the professionalisation of lecturers and to innovation in the curriculum. Since the research is relevant to and has an impact on professional practice, education and society at large, this knowledge is disseminated through diverse channels and to a variety of target groups.

As of January 2009, the research quality assurance system was introduced in accordance with the Protocol. Various experts, including experts from external parties (the Ministry of Education, Culture and Sciences, the employers' federation VNO-NCW, the Netherlands Organisation for Scientific Research (NWO), the Royal Netherlands Academy of Arts and Sciences (KNAW) and Syntens), were involved in the development of the system. The system guarantees that universities of applied sciences evaluate their research on a permanent basis and make improvements in a reliable and independent way and in relation to relevant aspects. Criteria have been drawn up for this, with which the quality assurance system of a university of applied sciences has to comply. This is supervised by an independent Validation Committee for Quality Assurance in Research (VKO). In addition, the Netherlands Association of Universities of Applied Sciences monitors relevant developments and key figures.

One of the strengths of the system is that universities of applied sciences have their research assessed both in relation to academic indicators and in relation to its relevance to professional practice, education and society. In addition, the variety of missions and research profiles is taken into account. Above all, the valuations have a strong focus on development and improvement. For this reason, the external evaluation committees not only consider output and impact, but also the necessary preconditions and organisational matters. After all, often it is here that concrete areas can be found for action aimed at further development and improvement.

In applied research, by definition the methods and techniques are very diverse due to the necessity to match these to that which is appropriate in the respective domain. However, the necessary relevance to and usefulness in professional practice also makes demands on the research methods and techniques. The development of the quality of applied research requires the further development of quality indicators and quality standards. The universities of applied sciences together have a role in this regard. However, the issue that arises is how this should be organised and how this can be matched substantively to international developments and standards.

Since 2005, the Dutch Code of Conduct for Academic Research (*Nederlandse Gedragscode Wetenschapsbeoefening*) has applied to research-intensive

universities. These are guidelines for meticulous, reliable, verifiable, impartial and independent research. A framework such of this may also be desirable for universities of applied sciences, but must be introduced with due consideration and with the professional contribution of professors and other researchers. The Board also requested the Forum to present a proposal for a code of conduct for applied research.

The SIA evaluation draws attention to the investment by universities of applied sciences in the development of methods, partly through the development and dissemination of best practices. Through the RAAK-PRO scheme, a further boost may be given to the deepening of research practice in this regard. The Forum for Applied Research also has a role in relation to this. The Forum is developing a standard for professors and a digital environment for the sharing of best practices. In this way, the applied research community itself is doing further work on quality assurance, quality improvement and standardisation.

Ambition

In order to develop the quality of research, it is necessary for so-called 'applied disciplines' to emerge within the universities of applied sciences, analogous to the subject disciplines in traditional academic education.

Within such disciplines, specific quality standards may be developed as an extension of the Branch Protocol for Quality Assurance in Research (BKO). On request, the Forum will take the lead in this regard.

3.5 Upgrading the qualifications of staff and expanding staff and facilities

Staff

Crucial key factors in the development of quality are increasing the number of research staff and upgrading staff. Increasing the number of staff is necessary because sufficient mass is required to ensure that research will have the desired impact on education and professional practice. Upgrading is necessary because qualitatively good research can only be done by qualified staff.

Since the introduction of professorships, the number of research staff has grown considerably. In 2008, the number of staff, in terms of professors and researchers (including those who were also lecturers) was estimated at 928 FTE (see also section 2). Although we may view this achievement with pride, the deployment of staff for research still only amounts to a few percent of the total staff of universities of applied sciences. The number of professors and other researchers, offset against

the total number of students and lecturers, is not substantial enough to have the desired effect on education and professional practice.

Universities of applied sciences are already making an effort in various areas through their HRM policies to enable staff to meet the new expectations (namely, those corresponding to educational institutions with research tasks), for instance, through their promotion policies. A further increase in these efforts appears necessary. In this regard, SKO (Stichting kennisontwikkeling hbo [Foundation for Knowledge Development at Universities of Applied Sciences]) has drawn attention to the fact that lecturers sometimes lack research skills. The measures recommended by SKO are:

- creating more mixed lecturer-researcher positions;
- setting higher minimum quality criteria for the recruitment of new staff;
- a (further) increase in the proportion of staff with a doctorate;

To ensure that lecturers are, in fact, able to do research, it is necessary that universities of applied sciences adhere to a focused and consistent HRM policy. "An HRM policy which focuses on promoting the research carried out by universities of applied sciences must be broad and not exclusively focused on increasing the number of lecturers with doctorates. For instance, it is desirable not only that lecturers currently involved in doctoral research be selected on the basis of their research skills, but that this also apply to *regular* lecturers." (SKO final evaluation). Within this framework, it is also important that universities of applied sciences actually invest in upgrading their staff in order to achieve the target figures contained in the long-term agreement with the Ministry of Education, Culture and Sciences.

In addition, SKO draws attention to another area, namely the quality of the substantive management of research within the organisations of universities of applied sciences. With the arrival of applied science, the management of substantive processes and the management of professionals has undeniably become more complex. This requires special knowledge and skills in relation to the substantive management of these processes. The Association of Universities of Applied Sciences has a role in facilitating knowledge exchange between stakeholders in this area. The ultimate aim is to create a professional climate in which there is sufficient scope for professionals to give substance to their subject areas while, at the same time, substantive management takes place within the context of the strategic vision of the universities of applied sciences with regard to research.

In addition, the HRM policy of universities of applied sciences ought to focus on creating a so-called *culture of scholarship*. This implies that research and

knowledge development are deliberately stimulated, even outside of formal research tasks.¹⁵.

Facilities

Carrying out research requires state-of-the-art research facilities. Professors and other researchers linked to universities of applied sciences must carry out their research in an environment in which the necessary facilities and preconditions are guaranteed. In this regard, two levels can be distinguished:

1. Facilities at the level of preconditions: access to academic collections, data collections, (small-scale) research equipment (including ICT, sufficient capacity), internal funds for study trips and attending conferences, publication support, translation and dissemination etc.
2. Large-scale research infrastructure and laboratory facilities.

The first level is the level of the university of applied sciences. The facilities infrastructure of universities of applied sciences is generally not designed for research or is only barely designed for this. A considerable amount will have to be invested in this in the coming period. Above all, universities of applied sciences will have to cooperate with institutions which already have this infrastructure. In the area of, for instance, access to academic literature, professorships at present often still make use of all sorts of roundabout routes (through doctoral students).

The second level is a discussion which is taking place at the national and European levels with regard to so-called "large-scale research facilities". The discussion on these research facilities, which started at the European level through ESFRI (European Strategy Forum on Research Infrastructures), has now resulted in a European roadmap and an initiative to create a Community legal framework for a European Research Infrastructure. Large-scale facilities make ground-breaking research possible and due to their economies of scale cannot be financed by an individual university or institution. Cooperation within Europe is necessary for this.

In the Netherlands, a commission set up by the Ministry of Education, Culture and Sciences (the Van Velzen Commission) has drawn up a Dutch Roadmap for Large-Scale Research Facilities. A special budget has been created from which large-scale research facilities can be financed. A start has been made in this regard by adding a structural amount to the budget of the NWO as of 2008, which will increase to €20 million a year as of 2011. The position of universities of applied sciences in the area of research does not immediately make them an important stakeholder with regard to these large-scale facilities. Nevertheless, it seems wise to link up to these developments on a collective basis.

¹⁵ Naturally the same applies to students and this therefore makes demands on the educational concept.

Ambition

Upgrading the level of education of lecturers is crucial to create a research climate at universities of applied sciences. The percentages agreed with the government (10% of staff with a doctorate and 70% with a master's degree in 2014) must therefore be set as targets and must be monitored in the interim.

3.6 International exchanges and benchmarking

The fact that Dutch Universities of Applied Sciences have officially been designated as such in English since 2008 gives expression to their broad range of tasks and the applied nature of their education and research. Within UASNET, the European Network of Universities of applied Sciences, (in which the Netherlands Association of Universities of Applied Sciences (HBO-raad) has played a pioneering role), institutions are cooperating in drawing attention to their distinctive features and positioning themselves. In addition, UASNET partners exchange good practice and set benchmarks together (see also Addendum 2).

In the Netherlands, the network organisation Evaluating Research in Context (ERiC) has been set up. Various organisations, including the Association of Universities in the Netherlands (VSNU), Royal Netherlands Academy of Arts and Sciences (KNAW), Netherlands Organisation for Scientific Research (NWO) and the Netherlands Association of Universities of Applied Sciences (HBO-raad), are cooperating within ERiC in (international) knowledge exchange and the development of methodologies with a view to more context-oriented research evaluation.¹⁶ On the initiative of ERiC, a European consortium of knowledge institutes and research institutions, named SIAMPI, has been awarded EU project funds for the development of indicators for measuring the (productive) interaction between research and society. SIAMPI's approach builds upon ERiC's Sci-quest method for the evaluation of research in the context of policy and social issues. SIAMPI's point of departure is that knowledge emerges in a continuous exchange between science and society, in which all stakeholders provide feedback, assess the results and propose improvements. This SIAMPI project must be monitored closely.

In addition, within Europe work is being done to produce a European classification of higher education institutions. The aim of this classification is to provide a counterweight for the criticised and dominant rankings such as the Shanghai Jiao Tong and the Times Higher Education rankings. These rankings have a bias towards one type of institution (the 'comprehensive research university') and elevate

¹⁶ See also: www.ERIC-project.nl

academic research achievement to the status of the ideal. The European classifications, however, are multi-dimensional. The classification offers a number of dimensions and indicators on the basis of which the profile of an individual institution can be analysed and on the basis of which groups of institutions may then be identified which are similar to each other. Within these groups, ranking may be possible. The classification offers opportunities to universities of applied sciences visible to make their diversity visible.

Finally, consideration could be given to the development of the former polytechnics in the United Kingdom, which have been recognised in law as New Universities since 1992. Polytechnics (and the Scottish Central Institutions), were characterised by a focus on their educational tasks, which were directed towards professional practice, and a poorer research tradition. The most recent RAE (Research Assessment Exercise 2008) showed that these newcomers to the area of research are able to develop on the basis of a good strategy and a more or less level playing field: "The world-leading research is found not only in the traditional research-intensive universities, but is also found in pockets of teaching-intensive former polytechnics and in some institutions that have had full university status for only two or three years"¹⁷.

Ambition

The various ambitions and indicators formulated in this discussion document require a focused foreign benchmark. To obtain this, UASNET would have to be given a concrete assignment. In addition, the accessibility and involvement of universities of applied sciences in the EC's Framework Programmes will have to be strengthened

3.7 Ensuring that the research activities are focused and have sufficient mass

Since the introduction of professors, the research profile of universities of applied sciences has developed on the basis of the objectives linked to the professorships through the Professorship Covenant. The Branch Protocol for Quality Assurance in Research (BKO) provides an open description of applied research (see Addendum 3), which assumes the diversity of research practices such as those that may be found at universities of applied sciences. The profile offers sufficient scope for considerable variety between universities of applied sciences. Depending on the mission, nature and size of the university of applied sciences, the university may place an emphasis on different areas. For instance, this applies to the extent to

¹⁷ Times Higher Education, December 2008

which the institutions have regional, national or international ambitions, but also to the extent to which the universities of applied sciences position their research in relation to education, professional practice and/or science. It should be noted in this regard that such diversity may be identified in terms of two dimensions, namely (1) the scale of the institution and (2) its context or regional setting. Small institutions outside the regions in which a concentration of knowledge institutions has occurred are in an essentially different position. This is of a different order than, for instance, the traditional separation between narrow and broad education, or creative arts and disciplines which do not belong to the creative arts.

In addition, universities of applied sciences are increasingly beginning to develop their own research profiles. They group their professorships into knowledge centres around certain themes and, by doing so, introduce a focus, which is regarded as desirable both within the SKO and SIA evaluations. However, more focus and mass are essential. In this regard, universities of applied sciences will have to make their own choices, linking up to both national research programmes and regional focuses. By doing so, the conditions may be created which are needed to arrive at an effective programme-based structure for research. In this regard, the fact that the Ministry of Education, Culture and Sciences has requested a plan for investment in knowledge circulation and applied research, which must be included in the knowledge investment agenda of a new Cabinet, instils hope.

Ambition

A strategic source of funding must be created which supports and facilitates the creation of focus and mass by universities of applied sciences.

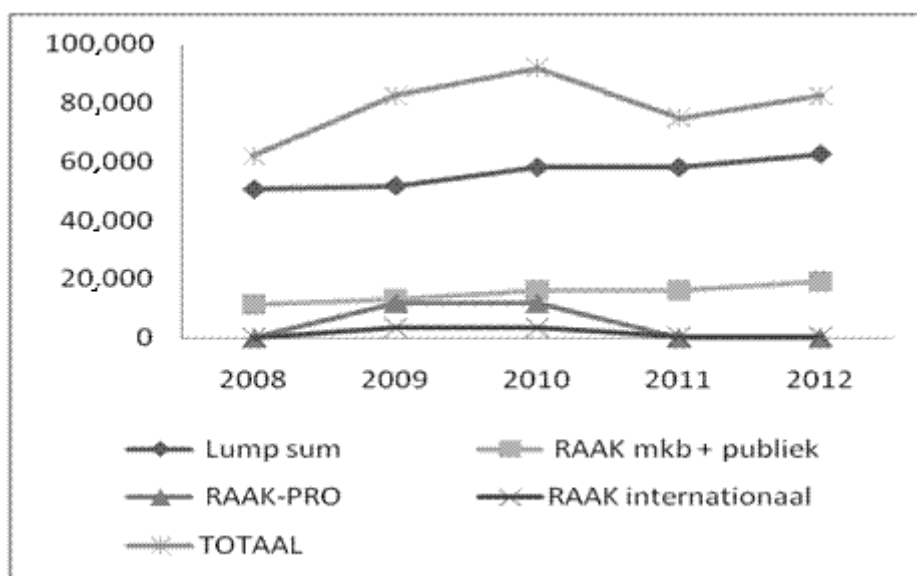
3.8 Developing solid and substantial funding

Universities of applied sciences are estimated to have spent a total of €105 million in 2008 on research. Half of this was funded from the lump sum funding provided by the Ministry of Education, Culture and Sciences, previously the SKO funds, while a tenth was generated by RAAK schemes. The remaining 40% was acquired by universities of applied sciences from other sources (see also subsection 2.2).

Increasingly universities of applied sciences are managing to acquire a broader basis for funding applied research through employers and through national and international subsidies. The evaluations of both SKO and SIA, however, emphasise strengthening the availability of funds for research. With the limited funds which universities of applied sciences have for applied research, it is impossible to set up professorships and research centres across the breadth of a university of applied sciences. More lecturers will have to participate in research centres and research in

order to connect research and education within the universities of applied sciences across the board. The professionalisation of lecturer-researchers and the upgrading of their level of education (through training and participation in doctoral research) also requires additional effort. Universities of applied sciences can hardly make funds available for this themselves because absorbing an increasing number of students requires a major additional deployment of staff. If no policy changes are made, the following government funding for research can be expected (see Figure 5):

Figure 5. Government funds available for research by universities of applied sciences



Source: Strategic agenda of the Ministry of Education, Culture and Sciences (2008-2012)

SKO refers to the desirability of doubling funding for lectureships and suggests the further development of RAAK subsidies as a source of second-stream funding. RAAK's policy evaluation refers to the continuation and further development of the RAAK schemes. In this regard, explicit attention is requested for the new RAAK-PRO programme as the temporary funding of this expires in 2010. The Netherlands Association of Universities of Applied Sciences (HBO-raad) has since sent a letter to the Minister requesting a meeting on this. The Minister's response to this has been positive and he has invited the sector to present a plan for the future of applied research.

Claims for an increase in funding must be well substantiated. Firstly, the importance of research for education and the quantitative ratio of professors/researchers and students deemed necessary for this requires an increase in base funding. In determining the desired level of this funding, it is

important to determine a realistic ratio, preferably by means of a benchmark with reference countries. In addition, it seems desirable that claims for funding should also focus on social issues and the role which universities of applied sciences may play in this regard in cooperation with private parties. The Ministry of Education, Culture and Sciences can support this because, on the one hand, it implies the further development of applied research and, on the other hand, it makes a contribution to solving concrete social issues. Public funding ('seed' funding) may be requested from the Ministry of Education, Culture and Sciences for research in relation to social themes which will result in public-private cooperation and investment also by private parties. This compels universities of applied sciences to operate in a way which is demand driven and to look for cooperation with private parties. A contribution may also be expected from the Ministry of Economic Affairs because cooperation with private parties will take place and money is also obtained from the market.

In fact, second-stream funding for research at universities of applied sciences has emerged through cooperation between SKO and SIA in relation to RAAK-PRO. It is possible to build further on the method of operation which has developed through this. The organisation which manages this second-stream funding would have to include representatives of existing research institutions, the employers and the universities of applied sciences. The RAAK programme clearly shows what the key task of the "new" second-stream funding organisation ought to be, namely developing the strategic research agendas for professional practice with a strong focus on their impact on professional practice and on education. Such a source of funding, from which funds can be made available on the basis of proven quality and competition, may have the subsidiary effect of providing a boost to applied research of good quality. Various ministries are involved in this because of the immediate importance of this source of funding, both to universities of applied sciences and to society/professional practice.

The extent to which these funds for the education and training of lecturers may be used to strengthen the research activities of universities of applied sciences will have to be explored. In this regard, universities of applied sciences are working directly at developing stronger links between research and education, and improving the quality of both the bachelor's and master's programmes.

Ambition

The gradual development of both first and second-stream funding is necessary and requires an additional investment of €120 million in first-stream funding and €100 million in second-stream funding.

4. Recommendations

The above makes it clear that in recent years the research carried out by universities of applied sciences has developed a strong profile: research *with and by* professional practitioners. Within a short period, research by universities of applied sciences has been placed on the map and not having it is inconceivable. Much has been achieved with limited funds. Improvement and innovation have taken place in education and professional practice as a result. At the same time, the extent of this research is anything but substantial. Although the benefits to society are very clear, there is room for more social recognition and acknowledgement of this. In the light of the fact that research carried out by universities of applied sciences is in a developmental phase, this is not an abnormal situation, not even within the European context.

Universities of applied sciences are making a transition from being educational institutions to knowledge institutions and part of this is a gradual movement towards a sustainable research climate. However, certain preconditions are necessary for this. These have been explained in section 3 in the form of eight success factors. Concrete ambitions have been formulated in relation to each of these success factors. These have been summarised in the table below. Between the baseline situation in 2009 and 2015, an intermediate measurement was taken and discussed within the Netherlands Association of Universities of Applied Sciences (HBO-raad).

The working group has succinctly identified the challenges which these ambitions imply as follows:

- internal and external positioning
- developing quality and making it visible
- expansion.

With regard to these challenges, the ball is now in the court of the universities of applied sciences, although the Netherlands Association of Universities of Applied Sciences is also expected to make an effort, both at the level of the Association and through the Forum, that is, through joint action by the professors.

In subsections 4.1 up to and including 4.3, recommendations were addressed to each of these parties.

Table: Ambitions corresponding to the success factors

Success factors		Ambitions for 2015 at branch level	Situation as at 2008/2009 (baseline measurement)
1	Relationship between research and education	<ul style="list-style-type: none"> • 1 FTE at professorial level to every 720 students • 20% of lecturers active in research ('active' = one day a week) 	<ul style="list-style-type: none"> • 1:1,740 • 10%
2	Creation of networks	<ul style="list-style-type: none"> • Entrepreneurs involved in research activities: 10,000 • Professionals employed by public-sector institutions involved in research activities: 5,000 	<ul style="list-style-type: none"> • Not available • Not available
3	Visibility	<ul style="list-style-type: none"> • All universities of applied sciences are included in a knowledge database in which they present high-quality knowledge products which are also accessible to professional practitioners. 	<ul style="list-style-type: none"> • 18 (knowledge database of universities of applied sciences)
4	Quality assurance	<ul style="list-style-type: none"> • Applied disciplines within each domain • Quality indicators within each discipline 	<ul style="list-style-type: none"> • Not available • Not available
5	Upgrading of staff	<ul style="list-style-type: none"> • 10% of staff has a doctorate • 70% of staff has a master's degree 	<ul style="list-style-type: none"> • 4.8% • 52%
6	Internationalisation	<ul style="list-style-type: none"> • Benchmarking within the European Network of Universities of applied Sciences • Participation in KP8 has increased 	<ul style="list-style-type: none"> • None • Not available
7	Focus and mass	<ul style="list-style-type: none"> • Greater programmatic focus (indicator currently being developed) 	<ul style="list-style-type: none"> • None
8	Expansion	<ul style="list-style-type: none"> • Gradual expansion of both first and second-stream funding by means of an additional investment of €120 million for first-stream funding and €100 million for second-stream funding. 	<ul style="list-style-type: none"> • First-stream funding: €55 million • Second-stream funding: €12 million.

4.1 Universities of applied sciences

1. For each university of applied sciences, positioning and embedding of its organisation starts with its strategic policy, based on its mission and ambitions. Research should be given the place within this which it deserves, namely that of

a function which is the equivalent of and occurs alongside education, but which serves education. This is then translated into financial and HRM policy and in turn into the organisational structure which is deemed desirable.

2. Needless to say, each university of applied sciences makes its own choices in accordance with its mission, regional environment and nature. However, each university of applied sciences will have to ensure that the relationship between education and research is guaranteed at every conceivable level within the organisation. This requires, for instance, reflection on the form given to (substantive) leadership up to the highest level within the organisation.
3. In the case of each university of applied sciences, an HRM policy must be pursued which focuses on quality and is consistent. The qualifications and expertise of the professors, lecturers and other researchers are, after all, key factors which determine quality. These various aspects will be expressed in its recruitment policy, the division of tasks, and education and training. The upgrading of the educational level of lecturers agreed with the government (10% with doctorates and 70% with master's degrees) should serve as a guideline for each university of applied sciences.¹⁸
4. In the case of many universities of applied sciences, their research activities are too limited at present for them to realise their research ambitions. An expansion in staff and funding is therefore necessary. Individual responsibility, on the one hand, and collective responsibility, on the other hand, apply to this (see subsection 4.2). The individual universities of applied sciences will have to ensure that the extent of their research activities is consistent with their ambitions.
5. The research must be made more visible to stakeholders. This can be promoted by inclusion in the knowledge database of universities of applied sciences, but also through greater effort in relation to PR and marketing.¹⁹

4.2 Netherlands Association of Universities of Applied Sciences (HBO-raad)

1. The positioning of research is also an important collective activity. This relates, in particular, to demonstrating and emphasising the added value of the research to society, both at the regional and national levels, and at the international level. In this regard, the emphasis will have to lie on its significance (both directly and through education) for knowledge circulation and innovation, with regard to the latter both in a social sense (in relation, for instance, to population ageing, sustainability and cultural tensions) and in an economic sense. From this perspective, a careful analysis must be made of the strategic partners

18 An exception is made in this regard for education in the visual and performing arts.

19 In the case of universities, it is usual for 10% of the budget for research projects to be reserved for marketing.

- (including ministries) that should be involved at the moment at which this should occur.
2. The working group recommends carrying out research into the diversity of organisational and management models with regard to the relationship between education and research. This should not be normative research, but an analysis of the advantages and disadvantages of the various models.
 3. Universities of applied sciences collectively will have to take up the task of further developing quality standards and making these explicit, also within an international perspective (see also recommendation 2 in subsection 4.3)
 4. The working group recommends that the Netherlands Association of Universities of Applied Sciences adopt the indicators (formulated in the table above under ambitions) as guidelines for joint action by the universities of applied sciences and to implement these both in the interim (2012) and in the 2015 objectives.
 5. Through improvements and the expansion of the knowledge database of universities of applied sciences, collective work can be done towards setting up a (digital) infrastructure to provide access to research-based knowledge and products.
 6. Within the context of the Association, an appeal must be made for an increase in the structural budgets in the light of the necessary interchange between research and education, the contribution to solving social issues and the importance of valorisation, innovation and the economy.
 7. An appeal must also be made for substantial second-stream funding through the expansion of the RAAK scheme and the creation of a level playing field in relation to, for instance, subsidies provided by the Netherlands Organisation for Scientific Research (NWO). However, this should also apply to the use of education and training funds for research.
 8. Minister Plasterk has already extended an official invitation to the sector to submit an investment plan for applied research. He shares the view that the further development of such research must be encouraged. At the time of writing, the working group was of the opinion that this discussion document may serve as a step towards such a plan for the future.
 9. For the future substantiation of claims, international benchmarks must be sought, as well as illustrations of ways in which prosperous economies benefit from research. A valid macro-economic multiplier must also be developed in order to calculate the added value of investments in applied research.
 10. European funds (for instance, EC Framework Programmes) ought to be made more accessible to universities of applied sciences, for instance through UASNET and/or a focused lobby in Brussels.

4.3 Forum for Applied Research

1. Analogous to the subject disciplines of traditional research-intensive universities, the applied disciplines of the universities of applied sciences should

be developed within the Forum. This will ensure that the development of theory within the disciplines is enriched by experience from professional practice. Professional practice tests theory and supplements it.

2. With the arrival of the quality assurance system for research, it will be possible to assess whether universities of applied sciences are able to guarantee quality. The quality of the research itself and the setting of quality standards is the responsibility of the universities of applied sciences and the researchers themselves. The Forum has an important task in developing quality standards within the various research domains.
3. The Forum has become an important network within which good research practices are shared. In the future, knowledge sharing will also be important within the Forum.
4. The Forum has a role in further strengthening the position of applied research within the knowledge infrastructure. This can be done, on the one hand, by providing good examples (marketing) and, on the other hand, by working together with the Association in lobbying relevant stakeholders.
5. To make the social importance of professors more visible, it is of considerable importance that initiatives be developed in relation to the social positioning of the professorships.

Addenda

Addendum I: Overview of the recommendations of stakeholders

Stichting kennisontwikkeling hbo (SKO) (Foundation for Knowledge Development at Universities of Applied Sciences)

Relationship between research and education

- A strong link between research and education is an area requiring attention.
- Professionalisation of lecturers
- HRM policy should focus on this.
- Criteria with regard to the effect of research on education should be included in the quality assurance system for research.

Orientation of research

- Demand-driven knowledge development (knowledge which the economy and society require)
- At the same time, no consultancy ("you demand, we produce")

Funding of research (second-stream funding)

- A fully-fledged second-stream funding organisation is necessary (including stimulating competition between universities of applied sciences).

Funding of the professorships (first-stream funding/lump sum)

- The Ministry of Education, Culture and Sciences must gradually double the number of professors (in the period from 2009 to 2013).
- In addition, more internal funding of professorships by the universities of applied sciences themselves is desirable.

Lecturers and HRM policy

- Creation of mixed lecturer-researcher positions

Professorships

- A lectureship should consist of at least one professor who gives leadership with an appointment of 0.5 FTE or more.

Quality assurance

- The Branch Protocol for Quality Assurance in Research (BKO) provides an adequate framework for the quality assurance systems of individual universities of applied sciences.

- The diversity of systems used by universities of applied sciences must not be too great as this will make comparisons difficult.

Stichting Innovatie Alliantie (SIA) [Innovation Alliance Foundation] (policy evaluation, 2009)

Relationship to professional practice

- Continuous improvement in the external relationships with employers must take place.

Relationship between research and education

- Strengthening the link between applied research and education

Professionalisation of lecturers/HRM policy

- The use of RAAK as a context for the professionalisation of lecturers is recommended.
- Universities of applied sciences must develop HRM instruments which provide support for the professionalisation of lecturers with a focus on applied research and the development of sustainable relationships with employers.

Network development and knowledge circulation

- Universities of applied sciences are advised to invest in the development of methodologies partly by developing best practices and making these accessible.
- It is desirable that universities of applied sciences enter into further agreements with Stichting Innovatie Alliantie (SIA), partly through the Forum for Applied Research, with the aim of making best practices accessible and sharing experience in a broader context.

Funding of research (second-stream funding)

- The further expansion of RAAK to provide a programmatic framework for simulating cooperation between universities of applied sciences and employers, focused on reinforcing the applied research of universities of applied sciences, is recommended.

'Dedicated to Policy' (Netherlands Association of Universities of Applied Sciences (HBO-raad), 2009)

Participation by lecturers

- More lecturers must participate in research centres and must themselves do research into current developments in professional practice through professorships.

Focus and mass

- A considerable increase in the number of professorships is necessary.

- A bundling of professorships into research or expertise centres around certain thematic clusters is necessary.

Research funding

- Strengthening the basic infrastructure by increasing funds for lectureships in the base funding of universities of applied sciences.
- In addition, the expansion of a second stream of funding (that is, funds obtained through competition) is an important stimulus to the development of qualitatively good applied research.

Social and Economic Council (SER) (advisory document 'Europa 2020: de nieuwe Lissabon-strategie' [Europe 2020: The New Lisbon Strategy']

European knowledge area

- Recommends making more funds available within the EU budget for the European knowledge area.
- The knowledge area may be understood to be a knowledge triangle of education, research and innovation and (higher) education must therefore be given a more prominent place in the implementation of the European knowledge area.

VNO-NCW (article by Chiel Renique in Thema No. 2, 2008)

Relationship between research and education

- Investment in the relationship between research and education

Relationship between research and professional practice

- More people from the field of professional practice should be involved in research centres.

Position within the knowledge infrastructure

- Look for more links to other institutions within the knowledge infrastructure.

Positioning of the lectureships within the institution

- The embedding of lectureships within education is an area requiring attention.

Addendum II: International comparison of research carried out by universities of applied sciences

The report published by UASNET in 2009, entitled "Research at Universities of Applied Sciences in Europe: Conditions, Achievements and Perspectives" gives a provisional indication of the performance of universities of applied sciences in comparison to a number of European counterparts in relation to:

- 1) funding
- 2) staff

Item 1) Funding

Table 4.1 Proportion of contract funds from the total university budget and the proportion of different funding sources for the contract funds (latest available year)*

	Proportion of contract funds from total UAS budget	Research council or targeted programs	Industry	Public bodies or non-profit organization	European Union and other international sources	Other
Austria	27%	48%	11%	36%	5%	
Denmark	75%	11%	6%	3%	2%	77% (multi-year agreements)
Estonia	n.a.					
Finland	12.5%	7%	8%	8%	26%	52% (from Ministries)
France	n.a.					
Germany	75%	14%	33%	30%	12%	10% (foundations, donations)
Ireland	5%	86%	11%		3%	
Lithuania	2%	10%	7%		2%	80% (consulting, publishing, conferences, short courses)
Netherlands	13.5%	12%	55%	21%	6%	6%
Portugal	n.a.					
Switzerland	8%	40%	50%	8%	3%	

* figures as estimated by the representatives of national associations of UAS

Notes: In the case of the Netherlands, the strategic agenda of the Ministry of Education, Culture and Sciences for the year 2008 is assumed. The first column, which contains percentages (for the Netherlands: 13.5%), shows the relationship between additional research funding (that is, excluding professorships and RAAK subsidies), which the universities of applied sciences obtain, relative to the total budget for universities of applied sciences (including professorships and RAAK funds which, after all, are structural). From a macro perspective, SKO and RAAK are not targeted programs in the sense that they do not have to be earned separately by the sector, but are a component of structural funding. The professorships and RAAK projects, for their part, generate additional research funds. These are included in the 13.5%. The fifth column next to this (for the Netherlands, 12%, 55%, 21%, 6% and 6% respectively) gives the percentage allocation of this additional research funding (= 100%) to the five forms of additional funding.

Analysis: the Dutch universities of applied sciences are in second place (after Austria) with regard to obtaining research funds. The relatively high contribution by companies is striking (55%). Relatively little money is obtained through second-stream funding and European funds.

Item 2) Staff

Table 8.1 Educational level of UAS academic staff (in percentages)

	PhD	Masters	BA-university	BA-UAS	Other
Austria	31	54**	1,6	0,1	13
Denmark	3	80	2	15	
Estonia*	1-2	75-80	10	10	
Finland	7	68 + 11 (licentiate)	3	3	7
France	57	43			
Germany	90	10			
Ireland*					
Lithuania	15	85			
Netherlands	4	46	7	39	4
Portugal*	15	35	12	30	8
Switzerland	34	42	0	8	15

Question: What is the educational qualification level of academic staff on average (in percentages)?

Notes: * Figures of Estonia and Portugal are rough estimates, not based on actual data. For Ireland no figures are available.

** this includes 7% masters obtained from a UAS.

Analysis: It appears clearly from the table above that Dutch universities of applied sciences are at the bottom of the European list with 4% of staff with PhDs. With regard to the percentage of staff with a master's degree, we are not in a strong position.

Addendum III: Description of applied research (Branch Protocol for Quality Assurance in Research, 2007)

1. Research at universities of applied sciences is rooted in professional practice. The problem definition of research carried out by universities of applied sciences is informed by professional practice ('real-life' situations), in both the profit and not-for-profit sectors. The research generates knowledge, insight and products, which contribute to solving the problems of professional practice and/or the development of this professional practice.
2. Research carried out at a university of applied sciences is driven by professional practice and focuses on long-term strategic issues. The object of research and the problem definition of the research have pride of place without a prior choice in favour of a specific disciplinary or methodological approach. The approach is often multidisciplinary and/or transdisciplinary.
3. The research carried out at universities of applied sciences is designed within a range of organisational relationships, including professorships and research centres. These share knowledge and insights with companies and institutions, carry out applied research and develop new knowledge, insights and products, usually in cooperation with external parties.
4. The research carried out at universities of applied sciences is methodologically sound and, in addition, is strongly linked to the context of its application. This means that when the research is assessed, both academic criteria and criteria derived from the context (professional practice) play a role.
5. The research carried out at universities of applied sciences has a strong link to the other activities of these universities. This relates, above all, to the link with education. Lecturers are linked to professorships and research centres. Through work placements, assignments and research projects, students are actively involved in the research. The research has an innovative impact on the curriculum and contributes to the further professionalisation of staff.
6. The research carried out at universities of applied sciences, knowledge creation and knowledge circulations occur within (sustainable) networks with external parties. Knowledge and insights are transferred to various target groups through a variety of channels, namely through academic publications, through contributions to professional journals, through lectures and presentations, and through a variety of media, such as Internet, newspapers, radio and TV.
7. The research carried out at universities of applied sciences is varied. The type of applied research carried out, the way in which knowledge and insights are documented and shared, the type of products to which this gives rise, and the design of the networks are consistent with what is deemed adequate in the various sectors of professional practice.