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It is important to note that this is the English translation of the 'beleidsbrief hoger onderwijs en wetenschap', which was originally written in Dutch. The Dutch version is leading.

A healthy and sustainable system for higher education and science is essential for the development of students, lecturers, and researchers, for scientific breakthroughs, and for taking on society's challenges. In this letter, I build on my outline letter of 1 April 2022[1], and inform your House about my specific plans for higher education and research. I have incorporated the contributions from your House to the debate on the outline letter of 11 April 2022.[2] In the introduction, I examine the ambitions of the cabinet and the three main objectives that derive from them, the most important challenges, my own considerations referred to in the outline letter, the Research and Science Fund of € 5 billion for ten years, and the international context. I then explain, for the three main objectives, the specific policy choices and investments for the forthcoming period. Finally, I address accountability, monitoring and evaluation, and describe the preannounced exploration of options for the future. This exploration of future options is a crucial next step from this policy letter, because I believe it necessary to ask a number of fundamental questions that go beyond today's policy proposals, including about the funding and position of universities of applied sciences and universities in relation to the rest of the educational chain and society in general. With regard to the plans for Higher Vocational Education (MBO), I will inform your House in a separate outline letter before the summer.

Introduction

Ambition and objectives

The Netherlands has a strong and accessible system of higher education and science, with a high level of quality throughout, combined with many centres of

[1] TK 31 288, no. 951; (hereinafter: outline letter).
[2] Through this letter, I am fulfilling Section 2.4, paragraph 2 of the Higher Education and Research Act and Section 16a of the Netherlands Organisation for Scientific Research Act.

excellence.[3] Dutch knowledge institutions have a very good reputation internationally, and the system as a whole is rated even more highly. It is precisely the combination of easy accessibility and excellence at world level that makes our system so valuable and attractive. The system enables students, lecturers, and other employees to develop their talents, while universities of applied sciences, universities, and other knowledge institutions are able to exploit their individual strengths to maximum effect – at regional, national, and international levels. It is the ambition of the cabinet to continue strengthening this system and to address a number of fundamental problem areas, as mentioned in the coalition agreement. I have set three main objectives to make the system future-proof. First, the (1) strengthening of the foundations, on which basis (2) scope for a range of talents can be created. This will allow the Netherlands to stand out yet further at the international level in a large number of fields and to work on (3) enhancing the societal impact – and public recognition – of higher education and research.

Challenges, considerations, the Research and Science Fund, and the international context

Challenges

In the outline letter, which I discussed with your House, I have set out my problem analysis. Both material needs and immaterial concerns are key aspects. An important component of this is that of the social safety of students, lecturers, and researchers and their well-being which, during the pandemic, became particularly challenging. Everyone in the higher education and research sector must have the opportunity to develop as effectively as possible; that is only possible when institutions offer a safe, accessible, and inclusive environment for students and employees. There are too many incidents and mechanisms that prevent everyone being themselves and being able to feel safe. In addition, the pandemic has made the pressure of work and the pressure to perform among students, lecturers, and researchers, which has been increasing for some time, all the more visible. In my letter about the reintroduction of the study grant, I reflected upon the concerns among the current generation of young people and the effect of the coronavirus (COVID-19) pandemic on students.[4] The importance of improving levels of accessibility and success rates for all students remains undiminished. Among researchers, there are major concerns about the increased pressure of work, the low rates of success of research grant applications, the large number of temporary contracts, and the limited number of career paths. As a result, researchers too often give up their scientific careers and no longer regard higher education as an attractive area in which to work.

An important element of the justification of the investments I am explaining in this letter is the report by PwC Strategy& (PwC), carried out in response to a motion by your House about the adequacy, effectiveness, and cost allocation in MBO, higher professional education (HBO), and research university education and research.[5] PwC emphasizes, among other things, the lack of resources for achieving the ambitions in the area of practice-oriented research. For academic

[3] This policy letter concerns higher education and research institutions that are funded by the Ministry of Education, Culture and Science. The letter also focuses on the broader system of education, research, and innovation. Reference is made in many places to sub-areas and areas of common ground, strengthening the broader system.
[4] TK 24724, no. 176.
[5] PwC (2021). *Toereikendheid, doelmatigheid en kostentoerekening in het mbo, hbo en wo&o*.

education and research, PwC notes that the current macro budget is not even adequate for current educational and research activities. This is therefore about investments that are necessary and overdue.

A strong system of higher education and research will adequately address our current societal challenges through continued good-quality links between education and regional, national, and international labour markets, and through specific attention to labour market sectors beset by shortages. Practice-oriented research is an important driver for innovation in higher professional education, which is why the volume and continuity of practice-oriented research must be strengthened. Investments in education require a focus on the balance between strategic/thematic and blue sky research, with the latter being strengthened and the likelihood of scientific breakthroughs being enhanced.

I also note that increased student numbers at universities are leading to capacity challenges, while universities of applied sciences are actually predicting a decline in student numbers. Demand in the labour market is for highly-qualified individuals with both a practical and scientific orientation. Both challenges require decisions in the short term and careful consideration for the long term. I would like to regard this as a combined matter, including in relation to regional, national, and international labour market demand.

Considerations
In my outline letter, I described on the basis of what considerations I arrived at my decisions. In summary, they are as follows:

- Prioritizing investments that address demonstrable financial deficits in higher education and science. The report by PwC is particularly relevant on this point.[6]
- Investing in the whole higher education chain, blue sky fundamental research, applied and practice-oriented research, and knowledge utilization.
- Investing in research infrastructure and European and international collaboration.
- Focusing on essential conditions needed for guaranteeing a healthy culture for students and employees, such as reducing the pressure of work and pressure to perform, stimulating the recognition and rewards programme, social safety, open science and education, and knowledge security.
- A healthy knowledge ecosystem is more than just the sum of its parts. If, during the design stage of instruments, account is taken of how they are related to other instruments in the system, the effectiveness of every instrument will be enhanced and the system will become a coherent structure. The integral advice by the Knowledge Coalition is of particular importance on this point.[7] To fully achieve the ambitions of the Knowledge

[6] PwC (2021). *Toereikendheid, doelmatigheid en kostentoerekening in het mbo, hbo en wo&o.* The Roadmap for Large-Scale Research Facilities (2021) and the 'Evaluatieonderzoek organisaties voor toegepast onderzoek' (2021) are also relevant specifically for research infrastructures and European collaboration.
[7] Knowledge Coalition (2020). *Investeringsagenda voor onderzoek en innovatie 2021-2030*. The Knowledge Coalition consists of Universities of the Netherlands (UNL), the Netherlands Association of Universities of Applied Sciences (VH), the Dutch Federation of University Medical Centres (NFU), the Royal Netherlands Academy of Arts and Sciences (KNAW), the Dutch Research Council (NWO), TO2, the

Coalition, however, other instruments will have to be involved, such as the National Growth Fund.

- Enabling institutions to make their own individual strategic choices in education and research. This will allow institutions to focus more strongly on specific disciplines and themes, and thereby excel at them. The Netherlands is capable of competing on the world stage in every field, but not everybody has to do everything. This requires greater collaboration and a division of tasks among institutions so that knowledge institutions and regions can exploit their strengths to the full.
- These choices involve making a distinction between incidental investments with a more urgent function (from the Research and Science Fund) and structural investments.
- Other considerations when using the instruments include a healthy level of competition – and therefore excellence and impact – to ensure that the resources for research and research infrastructure are allocated to the most suitable people, teams, and organizations; making as much use as possible of existing instruments that have proved themselves in practice; the use of European collaborative partnerships, and where possible the deployment of non-financial instruments (such as administrative agreements).
- When making agreements on methods of accountability, monitoring, and evaluation, these should be based on finding a suitable balance between trust and accountability.

In this letter, I am placing the emphasis on investments that the cabinet will make in order to improve the entire higher education and research system, to offer a calm environment that provides sufficient room, and to increase its impact. These investments are made on top of all existing policies and the statutory guarantees that ensure a high-quality education and research system. Of course, other ministries and other funds are helping towards our goals, including the National Growth Fund. The joint investments being made specifically in research – thematic or blue sky – will move the Netherlands closer to the objectives in the Lisbon Strategy.[8]

The Research and Science Fund

The investments in the higher education and research system will be financed in part from the Research and Science Fund (an investment of a total of € 5 billion for the next ten years) and in part from the structural budget for advanced programmes and research (eventually, € 700 million per year on a structural basis).[9] Both the structural and temporary investments were announced in the coalition agreement.[10] In our system, there are a number of problem areas that require a structural investment in institutions' basic needs. These are financed

Netherlands Organisation for Health Research and Development (ZonMw), the Confederation of Netherlands Industry and Employers (VNO-NCW), and MKB-Nederland.

[8] The task in the coalition agreement is to move towards a knowledge economy in which, in line with the Lisbon Strategy, we invest in research and development.

[9] Regarding the relationship between existing and future funds, and their progress, the Minister of Finance will be informing your House by letter. This will state, among other things, how the fund is to be presented and justified, explicitly and as a whole, in the budget and the Ministry of Education, Culture and Science (OCW) annual report, for the 2022-2031 period.

[10] In addition, the resources for creating areas of focus and for profiling, which already form part of the OCW budget, are currently partly being used for the objectives in this letter.

from the structural budget. Problem areas of a temporary nature are being addressed with the incidental resources from the fund. In Appendix 1 you will find the financial allocation for each instrument, with a limited number of instruments having both a structural and a temporary component. Moreover, many of the investments involve a first investment in 2022, after which the full amount will be used from 2023 onwards.

The purpose of the instruments from the Research and Science Fund being proposed in this letter is to focus on incidental investments that will continue to be effective even after ten years. These effects include the development of talent, the creation of networks, research facilities, and the driving of transitions. This means, for example, that talented researchers who have furthered their development thanks to open competition or starters and incentive grants will continue to contribute towards improving the quality and impact of higher education and research long after the financial boost they received. Networks that receive a boost are also important for the long term. Examples include consortia in open competition, practice-oriented research and European projects (facilitated by matching Horizon Europe and European partnerships). Research facilities for fundamental and applied research, which are also being boosted by the fund, are often a magnet for talent and for new collaborative partnerships. These research facilities almost always last longer than ten years, with the research institutions committing themselves to the operational costs once the initial boost for the development and construction phase has passed. In ensuring that the fund will be effective for both the short and long term and in order to optimize cohesiveness between the instruments, effectiveness, efficiency, monitoring, evaluation, and adjustments are important factors. This is explained in Appendix 2.[11]

International context

Many of the challenges mentioned in the coalition agreement extend beyond international boundaries. The Netherlands is an international knowledge hub *par excellence*. More often than not, researchers form part of international collaborative partnerships. In finding and implementing solutions, the Netherlands looks to work in partnership with other countries, both inside and outside the European Union.[12] European research policy, shaped in part by Horizon Europe, is a shared responsibility between the European Union and the member states. In today's geopolitical landscape, close understandings between countries with shared values and objectives are important. As well as European and bilateral relationships,[13] the work of the Organisation for Economic Co-operation and Development (OECD) and of UNESCO, which often set the tone internationally, is valuable.[14] For example, the OECD produces initiatives not just for exploring problem areas in education and science, but also for structurally monitoring them, such as Education at a Glance.

[11] These aspects are explained in more detail in the section on accountability, monitoring, and evaluation. The policy choices are also explained in Appendix 2, with a substantiation of their effectiveness, efficiency, and evaluation.
[12] See also in this context the European Commission Global Approach to Research and Innovation, as a framework for international collaboration in research and innovation: TK 35875, no. A.
[13] See also in this context the 'Internationale Kennis- en Talentstrategie' (IKT): TK 31288, no. 893; and: TK 31288, no. 943.
[14] For more information, see for example: https://www.oecd.org/sti/inno/; https://www.oecd.org/education/; https://www.unesco.org/en/natural-sciences/open-science; and: https://www.unesco.org/en/education.

Objective 1: Strong and healthy foundations

It is only with strong and healthy foundations that our higher education and science system can continue to provide society with groundbreaking research, high-quality education, a good understanding of societal solutions, and broad-based sustainable prosperity.[15] These societal tasks are closely interrelated: in a well-balanced, well-equipped and well-financed system, groundbreaking research ensures relevant education, highly qualified employees, the stimulation of knowledge transfer, a contribution towards a resilient society and a boost for economic activity and private investment.

A strong and healthy basis for the system of higher education and science that gives the space to students, researchers, and lecturers to operate in a calm environment that provides sufficient room, and that enables institutions to profile themselves effectively, is a translation of the specific challenges for education and research in the coalition agreement. With regard to research, I will focus on strengthening blue sky and practice-oriented research, on reducing the pressure of work, on strengthening research infrastructure, on investments in the quality of higher education and science, and a better balance between primary and secondary funding. The investments proposed below will, in many cases, strengthen the foundations in multiple ways. For example, sector plans will improve the quality of higher education and science while reducing the pressure of work, partly because the number of permanent contracts will increase.

With regard to education, I will ensure a calmer environment that provides sufficient room, focusing on both the concerns and needs of students and lecturers alike. I will achieve this, once the quality agreements have ended, by continuing to provide the resources for the institutions for the quality of their education, by keeping a close eye on student success rates, by offering greater control to institutions and study programmes in the quality assurance system, and by making manageable the flows of international students. Thirdly, I discuss the position of higher professional education as an essential part of a strong and healthy foundation.

1.1 Investing in the foundations

1.1.1 Starters grants and incentive grants

A number of instruments have a key role in putting the foundations in order and in creating a calm environment that provides sufficient room. As such, I will be investing € 300 million per year in fixed and flexible starters grants and incentive grants, in the form of personal working capital for young researchers.[16] Of this € 300 million, € 156 million is structurally available for starters grants, and € 144 million is available for incentive grants. The incentive grants will be financed from the temporary Research and Science Fund, which runs for ten years.[17]

[15] Royal Netherlands Academy of Arts and Sciences (2013). *Publieke Kennisinvesteringen en de waarde van wetenschap.*

[16] The starters grants and incentive grants are based on the 'rolling grant' concept, developed in two Royal Netherlands Academy of Arts and Sciences recommendations: Royal Netherlands Academy of Arts and Sciences (2019). *Evenwicht in het wetenschapssysteem. De verhouding tussen ongebonden en strategisch onderzoek* and KNAW (2020). *Het rolling grant-fonds: kloppend hart voor ongebonden onderzoek*.

[17] The distribution of the resources across universities will be mostly in proportion to the number of students. The three 'young' universities (Erasmus University Rotterdam, Maastricht University, and

Researchers will be able to use the grant for up to six years, for research time for themselves and their team members, new colleagues, and for the purchase and use of small-scale research facilities. This will lighten their current pressure of work, their dependence on external research funding (such as from the Dutch Research Council (NWO) and European programmes), and increase the scope for researchers to carry out blue sky research. The starting point of the starters grants is that recipients will not make any applications to the Dutch Research Council, as they will have sufficient working capital. This will reduce the pressure on them that is associated with making applications and will also result in a greater proportion of those researchers not in possession of a starters grant being successful in their applications for grants elsewhere. Given the range of objectives of the Dutch Research Council's instruments, I am also asking the Dutch Research Council to produce a proposal that includes at least the following: the period in which a researcher in receipt of a starters grant is not eligible for a simultaneous Dutch Research Council grant, and the Dutch Research Council instruments to which an exception would be desirable.

The starters grants will be allocated by institutions to researchers/lecturers in every academic field who are given a permanent appointment as an assistant professor. These grants may not be used for any other purpose. The level of the starters grant is €300,000, and the first starters grants will be awarded in 2022 (to assistant professors who took up their positions on or after 1 January this year). The starters grants are for researchers who both conduct research and teach: this will help guarantee the interdependence between the two. I would also like to stimulate team science by awarding an extra amount (top-up). In setting the minimum level of appointment for eligibility for a starters grant, account will be taken of gender and other forms of inclusivity. The effect of this and other preconditions will be harmonized with the universities, represented by Universities of the Netherlands, and with the involvement of researchers and lecturers.

In addition, executive boards, in coordination with deans and co-determination bodies, will have the opportunity from 2023 onwards to award incentive grants to existing or newly appointed assistant professors, associate professors, and full professors in places in organizations where the pressure of work is greatest. It is here that this stimulus, financed by the Research and Science Fund, will have the strongest effect on blue sky research and the pressure of work. There is also scope here for awarding incentive grants of less than €300,000. An incentive grant working group will be set up in mid-2022 to assess the practical effects of incentive grants, in order to be able to advise the universities in their choice of policies. The perspectives of researchers and lecturers, personnel departments, deans, and the executive boards will be represented on the working group. As is the case with the starters grants, the starting point is that recipients of incentive grants will not make any applications to the Dutch Research Council, as they will have sufficient working capital. Given the range of objectives of the Dutch Research Council's instruments, I am asking it, as in the case of the starters grants, to produce a proposal stating the period during which a researcher with an incentive grant is not eligible for a simultaneous Dutch Research Council grant,

Tilburg University) will receive an additional contribution. This will alleviate in part the fixed-base problems.

and the Dutch Research Council instruments to which an exception would be desirable.

1.1.2 Sector plans

For good-quality university education and research, extra investments are needed to enable the appointment of new lecturers and researchers. Complementary to the investments in blue sky research, especially for starters grants and incentive grants, I am therefore investing in the tested instrument sector plans. The purpose of this is to strengthen the basis for university education and research in a targeted and sustainable manner from an overall national perspective.[18] I will be making €200 million of structural investments in sector plans, intended for sector plans in all four domains: social sciences and humanities, applied and engineering sciences, science, and medical sciences. This investment will lead to an increase in the quality of education and research because there will be more permanent contracts, a reduction in the pressure of work, and greater scope for attracting, training, and retaining academic talent. Sector plans will also help improve the interrelationship between education and research and address the joint decisions regarding the allocation of tasks and profiling between and of universities. This will enable universities to opt for a clear profile that is relevant to their own research priority areas, societal orientation, and regional integration. As a result, universities will become more attractive to high-level international talent and will be able to occupy a distinctive position in Europe and beyond as one virtual 'university of the Netherlands'.

I would like to balance the deployment of the instrument between research and education and in the process use it for collaboration in the sector curriculum. In allocating the structural resources across and inside the domains, my reasoning will continue to be based on content, with sound analyses of the problem areas and opportunities in sectors for profiling and collaboration. An important aspect here is that relevant stakeholders such as deans and executive boards are closely involved with every phase – prioritizing, producing, and implementing sector plans.

Much hard work has recently been carried out in the domains on sector descriptions in which the problem areas and opportunities within the sectors have been jointly identified. In almost every domain, these analyses have been translated into specific sector plans in which choices are being made and in which profiling can be coordinated. The next step is a substantive and independent weighting in the prioritization of relevant sectors that are eligible for the financing of a sector plan, with the starting point being the strengthening of the four science domains. I am placing this process in the hands of an external committee who will be advising me on the allocation of the resources. I will give the committee a number of preconditions, with regard to profiling for example, the link between education and research, and increasing the number of permanent contracts. As well as lecturers and researchers, the committee will consult with executive boards, one reason being to ensure safeguards for the interrelationship between sector plans and the profiles of institutions. In line with the coalition agreement, I will also request, as part of the preconditions, that particular attention be paid to small-scale studies in the social sciences and humanities – especially modern languages and Dutch language and culture. Because of the

[18] See also TK 29338, no. 206 and TK 31288, no. 904.

societal relevance and the shortage of lecturers in these areas, greater collaboration for achieving an all-encompassing and macro-efficient curriculum is very important. I will also ask that attention be paid to universities based on religious or philosophical principles ('levensbeschouwelijke universiteiten'). I am currently in discussions on this matter with the relevant institutions and I will invest €5 million per year in these universities on a structural basis.

As we move towards more detailed development in the sector plans, consideration will be given to how the plans help strengthen the sustainable basis for teaching and research and other priority policy areas such as societal impact, employment shortages, talent, permanent contracts, open science, inclusiveness, macro-efficiency, and how this relates to and encourages the inflow of academics into teacher training programmes. On this matter too, I will take my decision based on independent advice.

At the same time, I believe it essential that in deploying this instrument, we get off to a flying start and begin making the investments quickly. That is why in the summer, after an independent assessment, I will be making a structural award of €60 million, from the total amount of €200 million, for the tackling of problem areas in sectors that have been identified as priorities by all relevant parties.

For the education sector specifically, and in line with the evaluation of the agreement on the flexibilization of teacher training programmes, I will be entering into discussions with teacher training programmes (in both higher professional education and university education) about the possibility of a sector plan for strengthening and coordinating the curriculum. This will be accommodated within existing financial frameworks.

1.1.3 Practice-oriented research

Practice-oriented research has evolved rapidly in recent decades into an essential form of research in the Dutch knowledge infrastructure. Now is the time to realize the ambitions for practice-oriented research and to strengthen further the capacity and continuity of universities of applied sciences. This will require additional investment.[19] I am therefore investing an annual sum of €100 million in the continued development of practice-oriented research, of which €50 million will be structural and €50 million will be for the next ten years. With a boost from the Research and Science Fund, this will enable universities of applied sciences to continue to expand their roles as knowledge institutions during the next ten years. They will then be able to further strengthen, in a structural manner, the link between their practice-oriented research and their education as well as the professional field (regionally and beyond). Practice-oriented research strengthens the power of innovation of higher professional education and ensures that the research is more closely relevant to the labour market and societal issues that affect the local region and elsewhere. This way, practice-oriented research will be helping ensure innovative and high-quality education. The aforementioned investment will be translated into a greater contribution towards Dutch knowledge development, earning capacity, and broad-based prosperity. Also, by specifically investing in a pilot programme for the professional doctorate, the continued development of practice-oriented research will be further enhanced. The professional doctorate is a research-intensive collaborative partnership between

[19] PwC (2021). *Toereikendheid, doelmatigheid en kostentoerekening in het mbo, hbo en wo&o*.

professionals from the private sector and knowledge institutions for practice-oriented research. The programme produces highly-qualified professionals with knowledge of practice-oriented research and research skills that enable them to contribute towards solving complex societal issues.

Of the total investment, €85 million will be added to the primary funding for universities of applied sciences and distributed pro rata to the education component in accordance with the funding system laid down in the Higher Education and Research Act. This will enable the appointment of extra research employees, among other things. In addition, €15 million will be invested in the next ten years in secondary funding via the Taskforce for Applied Research (Regieorgaan SIA), part of the Dutch Research Council. Of this amount, €10 million is intended for themed programmes in order to connect university of applied sciences research groups to national efforts at achieving the desired societal effects. The remaining €5 million is intended for the professional doctorate pilot.

The coalition agreement states that the fixed base ('vaste voet') in the budget will be increased and reviewed. One possibility is to introduce a fixed base in the research component of the funding of universities of applied sciences. This will require careful deliberation, which cannot be carried out in the short term. It has therefore been decided that resources will be distributed in the next few years according to the current system, but that a process will be launched for the purpose of reviewing the funding system. This will form an important part of the future exploration, which will start after the summer.

1.1.4 Large-scale scientific infrastructure and facilities for applied research
With an investment from the Research and Science Fund, the development of scientific infrastructure will be accelerated and brought more up to date. Due to new high-quality research infrastructures, the upgrading of existing infrastructures, and access to international infrastructures, Dutch researchers will continue to be able to carry out top-level research. This will make the Netherlands more attractive to highly talented individuals and the country will acquire a stronger position in Europe and the rest of the world. In the next ten years, I will be increasing the annual budget for the National Roadmap for Large-Scale Research Facilities by € 40 million. By making € 10 million from the fund available every year from 2023 for the purpose of creating a national portfolio of memberships of large-scale international infrastructures, I am assisting our national knowledge institutions in linking up with international infrastructures. In 2022, I plan to use this funding of memberships on a one-off basis in order to improve access for Dutch researchers to the computing power on EuroHPC supercomputers. This will help contribute towards the European objective of investing strategically in the development of supercomputers.

For the next ten years, I am also making it possible for an average of € 50 million per year to be invested from the Research and Science Fund in updating and modernizing research infrastructure for applied research (including digitization). To this end, I am seeking the collaboration of the Minister of Economic Affairs and Climate and other ministerial departments for the setting up of a new strategic agenda. With high-quality, modern, and future-proof research infrastructure, the

applied research institutions (TO2) and National Knowledge Institutions will be able to develop knowledge and applications for societal solutions and transitions, upscale key technology for economic market opportunities, and contribute towards policy challenges and statutory tasks. Through this boost to applied research infrastructure, the research of the TO2 and the National Knowledge Institutions will be strengthened for the long term. With future-proof infrastructure, the TO2 and National Knowledge Institutions will be able to further expand their international collaborative partnerships.

1.1.5 Matching Horizon Europe

Horizon Europe, which is running from 2021 to 2027, is the European programme for research and innovation. Its starting points are excellence and societal impact. Horizon Europe has a significantly higher budget than the previous programme: at €95.5 billion, this is an increase of almost 30%. Dutch knowledge institutions are working jointly in Europe in order to make an important contribution towards solving society's challenges and to carry out groundbreaking fundamental research. Collaborating in Europe puts knowledge institutions in a position to compete among the world's leaders. The Netherlands is a very successful participant in European programmes. In order to encourage publicly funded knowledge institutions to take part in Horizon Europe, I will offer them a contribution towards the matching costs. I am making €75 million a year available for this purpose, for a period of seven years, from the Research and Science Fund. The investment will promote participation in Horizon Europe, as a result of which knowledge institutions will derive long-term benefit from their position in European partnerships. The amount to be paid for each institution will be based on Horizon Europe project contracts that they have concluded. This investment, which institutions will be free to use as they wish, will not only help give the Netherlands a strong starting position in Horizon Europe, but also achieves a better balance between the various funding sources. This is because participation in Horizon Europe currently places disproportionate pressure on the spare funds of universities, universities of applied sciences, Royal Netherlands Academy of Arts and Sciences and Dutch Research Council institutions, National Knowledge Institutions, institutions for applied research (TO2s), university medical centres, and other knowledge institutions. This pressure to match budgets reduces the scope available for, for example, blue sky research, profiling in specific disciplines and themes, and research infrastructure.

1.2 A calm educational environment that provides sufficient room

As well as the aforementioned investments in the basis of our system, I would like to create a calmer environment in education. For students, it is important that they are not harried by the system but instead are able to explore their own paths and thereby shape their own success. Educational institutions have a need for predictability and proportionate reporting requirements. I explore these points in greater depth in the next sections.

1.2.1 Student success rates

Like my predecessor, I emphasize the importance of student success rates. I would like to offer students the opportunity to develop as much as possible without counterproductive pressure being exerted on them. As well as the reintroduction of the study grant, about which I have informed you separately, we

will be exploring in the near future, together with the relevant parties, the implementation of the measure contained in the coalition agreement on the binding recommendations given to students on whether they should continue with their studies. In this context, we are mindful of the differences between groups of students and equality of opportunity. After the summer recess, I will be informing your House about progress in this matter. In 2022, the Inspectorate will be carrying out an investigation into maximizing selection criteria. The main question in the investigation will be: What is the justification for the number and type of selection criteria, and how is equality of opportunity factored into the criteria?

1.2.2 Quality of education

Until 2024, the use of revenues from the student loan system is subject to the quality agreements, which involve the revenues being earmarked in the budget and the institutions' plans being assessed by the Accreditation Organisation of the Netherlands and Flanders (NVAO). From 2025, these investments from the student loan system (an amount of around €625 million a year) will continue, and be awarded on a structural basis to the institutions via the budget, in order to maintain the current level of quality. This will enable them to continue providing small-scale teaching, improving the professional qualities of lecturers, and giving effective supervision to students. The result will be a calm environment that provides sufficient room, including in the area of the costs and implementation of regulations. The institutions will continue to use these resources for improving the quality of higher education, and the involvement of co-determination bodies (and other stakeholders) in how the resources are allocated will be safeguarded. Like your House, as stated by MP van der Laan in the Memorandum consultation of 11 April 2022, I attach much value to the involvement of students, including in this area. The form the involvement takes will be discussed with the Dutch National Student Association (ISO), the Dutch Student Union (LSVb), the Netherlands Association of Universities of Applied Sciences (VH), and Universities of the Netherlands (UNL).

The investments I will be making via the sector plans will also have a positive effect on education, through the integrated deployment of this instrument in both research and teaching, and the contribution made by the sector plans towards reducing lecturers' pressure of work.

1.2.3 Taking charge of quality assurance

In the Letter to Parliament dated 11 February 2021, my predecessor announced a desire to work towards a system of institutional accreditation.[20] I am pursuing this proposal, within existing financial frameworks. A new system will offer many opportunities for institutions to take charge of their quality assurance system and to align this with their vision on education. By putting programme accreditation in the hands of the institutions themselves, in tandem with assessments at the institutional level, it will be easier to safeguard quality that is compatible with the vision of the programme or institution itself. This will give educational institutions the scope to make their own choices in terms of the form and content of their programme assessments, thereby giving greater meaning to the assessment process. This will help alleviate the administrative burden. Moreover, the new

[20] TK 31288 no. 901.

system will be a form of encouragement for the development of types of quality assurance that extend to teaching beyond the degree programmes. This system of the future will be in keeping with the diversity of higher education and with the flexibilization that is needed in order to move lifelong learning a step further forward. Together with the umbrella organizations and other stakeholders, I will be working towards a broadly supported system of institutional accreditation. I will incorporate the lessons learned by several universities of applied sciences during the 'institutional accreditation with lighter programme accreditation' experiment into the design of the new system.[21]

1.2.4 Student flows

Quality, accessibility, and efficiency (including having a connection between education and the labour market) are the three pillars of our higher-education system. Partly because of the quality of our higher education and research, the Netherlands is very attractive to students from inside and outside the country. As well as the intrinsic value of internationalization, the intake of international students is important for sectors with shortages (such as technology) in order to better meet labour market demand. However, large numbers of students (international or otherwise) also put the quality of the study programmes under pressure, while control measures, such as a numerus fixus, are not consistent with the notion of accessibility. These dilemmas require a fundamental reassessment of our system: What will demand for talent be like in the next few decades? How can universities of applied sciences and research universities respond effectively to this societal demand? How do we achieve more easily predictable and stable student populations in order to safeguard the quality of study programmes? What is the role of internationalization? These questions form part of the future exploration that I will be addressing at the end of this letter.

However, the attractiveness of our higher education for international students is already leading to problems: the limits to accommodation in towns and cities and limits to facilities and the availability of employees are being reached. To make student flows manageable, I am therefore in discussions with the research universities on restricting the recruitment of international students. In the implementation of the coalition agreement, I am looking at the extent to which new instruments will be needed in order to control the shocks in student numbers (international students or otherwise). I will inform your House on this matter in the short term.

1.2.5 Long-term coronavirus (COVID-19) policies

Dealing with the coronavirus (COVID-19) pandemic has shown that our system is robust and capable of dealing with external shocks. I am proud of the flexibility and resilience displayed by students, staff, and institutions during the extremely difficult circumstances of the past two years. This was also the conclusion of the Inspectorate of Education and the NVAO in their joint analysis: "through their exceptional dedication and collaboration, the institutions of higher education have succeeded in maintaining their teaching and existing internal structures at a good level during the coronavirus pandemic." The Inspectorate and the NVAO therefore have every confidence that, should a similar crisis recur in the future, the higher-

[21] https://www.nvao.net/nl/procedures/nederland/experiment-instellingsaccreditatie-met-lichtere-opleidingsaccreditatie

education institutions will be well placed to deal with it, in collaboration with other relevant parties.[22]

To create greater predictability for the education sector, I am working closely with the relevant bodies and the Ministry of Health, Welfare and Sport on the development of a medium to long-term approach to tackling COVID-19.[23] This is focused on what is needed for organizing face-to-face teaching in a safe and responsible manner. The approach is aimed at plans and scenarios for enabling educational institutions to prepare for different COVID-19 scenarios. Your House will shortly be receiving the higher-education sector plan for tackling COVID-19.

1.2.6 Nominal funding

In the debate of 11 April 2022 concerning the outline letter, I promised to address the deferred motion by MP Westerveld in this letter.[24] It questioned a move away from the emphasis in the budget on the nominal study time frame. The motion stated that this increases the pressure on students. For the setting of the macro budget for funding, the nominal study time frame is not a parameter. However, the nominal study time frame *is* a factor in the *distribution* of the macro budget via the funding model. Institutions in turn are free to spend the government grant as they please. They may decide for themselves how they distribute the funds between the faculties, departments, and strategic objectives. Some institutions factor in the nominal study time frame for their own internal allocations, and some do not.

It is not clear whether the current funding model, which incorporates the nominal study time frame, increases the pressure on students to complete their studies within that time frame or not. Nor is it clear, therefore, whether abandoning nominal funding would reduce the pressure on students. Measures specifically aimed at improving student well-being may therefore be more effective. For this reason, I believe it undesirable to abandon nominal funding at present, and also because the redistribution effect would be considerable. Depending on the exact change, the effect would be €25 million or €66 million, structurally. I will consider the question of whether nominal funding is a factor in pressure on students during the in-depth investigation into pressure to perform and stress among students, which will be launched this autumn.

1.3 Positioning of higher professional education (HBO)

With almost 500,000 students (around 60% of all students in higher education), professional education makes a significant contribution – through its study programmes and learning pathways for lifelong learning – to the labour market in every region. The emancipatory role of higher professional education is important too, because of the options available for progressing from higher vocational education (MBO) to higher professional education (HBO). In my working visits to Twente, Groningen, Maastricht, and elsewhere, I have seen the great extent to which universities of applied sciences fulfil a crucial connecting role between knowledge institutions, the private sector, and other regional societal parties. I believe it important that higher professional education is able to continue to evolve and position itself in the region, so that it can exploit its pivotal position

[22] TK 31288, no. 949.
[23] Parliamentary papers 2022D15353.
[24] TK 31288, no. 954.

more strategically. In the near future, I will commit to that end with investments. These will go towards, for example, improving the link between MBO and HBO, and strengthening links between education and the labour market in HBO programmes for professions in those sectors where there are shortages: healthcare, education, and science and engineering. I will also be investing in practice-oriented research carried out by universities of applied sciences. Practice-oriented research makes an important contribution to our knowledge ecosystem and adds significant value to society and education.[25]

However, the positioning of HBO also requires further consideration. In our higher-education system, HBO fulfils a wide-ranging and important task, by teaching from the associate degree to the professional doctorate level, and with practice-oriented research. At the same time, opportunities remain unused because few VWO [pre-university education] students opt for HBO, and because the professional field is not always entirely familiar with study programmes at, for example, the associate degree or professional masters. This makes it necessary to focus more attention on the strategic positioning of HBO in our knowledge system and on the direction in which the binary system should evolve. These challenges will be an important part of the exploration for future options ('toekomstverkenning').

Objective 2: Creating scope for a wide range of talent

On the basis of strong and healthy foundations, talented students, lecturers, and researchers must be given free rein – from young to experienced, from different backgrounds, and with different perspectives and career paths. This is about attracting and retaining international top-level talent.[26] The objective for increasing the scope for a range of talents is derived from the task in the coalition agreement to improve student well-being, to reduce the pressure of work, and to strengthen blue sky research. The coalition agreement also calls for attention to be paid to equality of opportunity, discrimination in internships, and social safety and security. With an extra focus on the well-being and development of talent, the Netherlands is becoming an attractive destination, enabling us to maintain and strengthen our leading position. Below, I will first address the immaterial issues of safety and well-being, and then a number of financial instruments for enhancing the scope for talent.

2.1 Safety and well-being

2.1.1 Social safety

It is important that everyone is able to develop to the maximum extent, but this is only possible if educational institutions are safe and secure, accessible, and inclusive for all students and all employees.[27] Institutions are actively committed to tackling discrimination, racism, sexual harassment and sexual violence, exclusion, stereotyping, and prejudice against students and employees. Threats against scientists and forms of inappropriate interference warrant attention too,

[25] The above completes my undertaking to address the position of higher professionaleducation. In the autumn, your House will receive a letter about higher vocational education (MBO).
[26] The Rathenau Instituut describes the Netherlands as a 'brain exchange-land.' *Doorstroom en mobiliteit van wetenschappers* is one of the memoranda drawn up by the Rathenau Instituut as input for the higher education and science policy letter and the Dutch Research Council strategy (to be published in July 2022).
[27] Ministry of Education, Culture and Science (2020). *Nationaal actieplan voor meer diversiteit en inclusie in onderwijs en onderzoek*. https://www.rijksoverheid.nl/actueel/nieuws/2020/09/01/nieuw-nationaal-actieplan-voor-diversiteit-en-inclusie

as this can lead to censorship (including self-censorship), which undermines academic core values. Despite the efforts of the institutions in these areas, various incidents and education and research reports show that improvements to levels of social safety and inclusion are still needed. I am therefore proposing to make €4 million a year available from 2023 from the temporary Research and Science Fund for an instructive approach with three action lines: research and monitoring, interventions and knowledge sharing, and awareness and culture change.

Later this year, I will bring forth a more detailed integrated approach that will contain both new and current initiatives. My approach will be in line with the agenda against discrimination and racism, which I will also be publishing this year. The agenda will state how the Ministry of Education, Culture and Science intends to tackle discrimination and racism in all our policy areas during the next four years. In anticipation of the integrated approach and the agenda against discrimination and racism, administrative agreements will be made with the Netherlands Association of Universities of Applied Sciences and Universities of the Netherlands.[28] These agreements will be about monitoring safety and security and rules of conduct.

2.1.2 Equal opportunities for everyone

Together with the sector, I continue to work on improving diversity and inclusion in higher education and research, based on the ambitions formulated in the national action plan to promote diversity and inclusivity.[29] Data – on the intake, outflow, and relocation of employees, for example – are important for this purpose, as they make it possible to monitor changes in the composition of the academic professional community and identify any obstacles. This is the only way we can promote equality of opportunity effectively. With the institutions, I would like to work on gaining a clear picture from these data, taking into account privacy issues, administrative burden, and the points for attention that your House raised previously during debates and motions. The Dutch Research Council strategy, to be published in July 2022, will also focus on diversity and inclusion. This concerns, among other things, the inclusivity of research consortia.

With the 'Expertise Centrum Diversiteitsbeleid' ('diversity policy expertise centre', ECHO), the education umbrella organizations, and the Ministry of Social Affairs and Employment, I am working on a manifesto against discrimination in internships in higher education. I will inform your House about the progress of this manifesto at a later time. I will also be carrying out the Westerveld and Wassenberg motion with the help of an investigation for identifying discrimination in internships against students with disabilities.[30] The results are expected in April 2023.

It is sometimes necessary to give extra support to specific groups of scientists. The war in Ukraine has again made clear the importance of scientists being able to do their research in freedom and safety. Many institutions are affiliated to the

[28] As representatives of universities of applied sciences or research universities respectively.
[29] Ministry of Education, Culture and Science (2020). *Nationaal actieplan voor meer diversiteit en inclusie in onderwijs en onderzoek*. https://www.rijksoverheid.nl/actueel/nieuws/2020/09/01/nieuw-nationaal-actieplan-voor-diversiteit-en-inclusie
[30] See: TK 35570-VIII, no. 271. The investigation will be carried out by a consortium of the Expertise Centre for Professional Education (ECBO), the Knowledge Centre for Vocational Training and Labour Market (KBA), and ResearchNed.

international Scholars at Risk network. I regard this involvement as greatly important. I am therefore very pleased to support initiatives that offer opportunities to scientists who, because of war or other threatening situations, are unable to pursue their academic careers in their home country. In the Netherlands, there are already various programmes that provide this support, such as the Dutch Research Council's Hestia programme. Within the existing financial frameworks, I will discuss with the Dutch Research Council whether the current resources for Hestia are adequate.

2.1.3 Student well-being

Research has shown that students in higher education are experiencing serious mental health difficulties.[31] Feelings of gloom and motivational and concentration problems among students have increased, for example, as has the use of substances, and students are worried about the future. These signals trouble me greatly. In many ways, the stress of our performance-based society feeds through unhindered to young people, with an adverse effect on their well-being and ultimately their success as students. I would like to encourage institutions to make the mental health of their students their priority. They already do a great deal, but more needs to be done. With an investment of €15 million a year, I am providing an extra boost in this area. The investment is intended for the development of an integrated approach to student well-being, aimed at prevention, early warning signs, and supervision. Institutions often function as the first point of contact for students and therefore play a primary role in prevention and early warning signs of mental health problems among students. Educational institutions will develop this integrated approach in partnership with student unions and with the support of the Ministry of Education, Culture and Science, and with experts in this area. An in-depth investigation into the causes and solutions relating to the pressure to achieve and to stress is also starting this year.

2.1.4 Pressure of work

From a pressure-of-work survey held by ICTU in 2020, it appears that 64% of employees in higher education experience heavy, or very heavy, pressure of work.[32] I regard this as a matter of grave concern. Reducing the pressure of work most certainly helps to create a more healthy environment, but also – to a significant degree – to the development of talent. My attention is aimed specifically at vulnerable groups, especially young researchers (PhD students, postdocs, and temporary lecturers). The investments that I am announcing in this letter, such as starters and incentive grants, sector plans and the increase in the budget for open competition, will help bring about a major reduction in the pressure of work for these groups in particular.[33]

[31] National Institute for Public Health and the Environment (2021) *Monitor Mentale Gezondheid en Middelengebruik in het hoger onderwijs.* This report gives a good picture of the general developments and trends at national level with regard to this theme.
[32] See also: https://www.universiteitenvannederland.nl/2020-werkdruk-ictu.html
[33] When devising my plans, I held consultations with employers, employees representative organizations, and trade unions. This is putting into effect the motion by MPs Kerstens and van den Hul, which requested the government to enter into consultations with trade unions and employers in order to examine how an action plan to tackle the pressure of work and structural overtime can be realized. TK 35 570 VIII, no. 120.

At the same time, there are other factors behind the pressure of work. I would like to explore how we could reduce bureaucracy as much as possible. The research universities and universities of applied sciences, as employers, also have an important role to play here. I am speaking with them about their role in reducing the pressure of work and would like to make agreements on how we will monitor this. The Dutch Research Council and Universities of the Netherlands are working to reduce the pressures on the system, including the pressure to make applications, through the Integrated Plan on System Pressure.[34]

2.2 Encouraging and funding the development of talent

As well as the aforementioned action, I will be strengthening the development of researchers' talent with targeted boosts. This means, for example, that researchers will be able to use the starters grants and incentive grants referred to previously as they see fit, in a way that suits their career, development, and line of research. In the sector plans, too, there is ample opportunity for bringing talent from specific disciplines together, thereby raising the overall level even higher. In this section, I will be addressing the instruments of open competition, top-level research, and recognition and rewards, which are also important elements when it comes to enabling talent in the Netherlands to further its development.

2.2.1 Open competition and top-level research

The open competition of the Dutch Research Council is an important existing and proven instrument for outstanding blue sky research that responds to highly promising scientific developments. Thanks to the increase of the open competition by € 60 million annually from the Research and Science Fund, it will be possible to honour more high-quality proposals for the next ten years. When combined with the starters grants and incentive grants, this will reduce the pressure associated with applications. The open competition is one of the links in a set of interrelated instruments that are financed from the fund. This temporary investment will also strengthen research capacity for the long term. Together with the Dutch Research Council, I will be monitoring whether the acceptance rates are indeed rising. This open competition increase will benefit every Dutch Research Council domain, including the Netherlands Organisation for Health Research and Development.

As well as the blue sky research in the open competition, I am enabling the Dutch Research Council to give a targeted boost to a range of scientific fields in which the Netherlands ranks among the world's leaders or has the potential to do so. This boost will help profile the Dutch system and promote excellence. With an annual budget of €20 million for the next ten years, the Dutch Research Council will identify a limited number of research fields, for each of which it will enable a proven consortium to become (or remain) world class. Because of this funding, these scientific fields will continue to play a prominent role internationally, while the position of Dutch science will be strengthened in the long term.

2.2.2 Recognition and rewards

In any balanced and future-proof system of higher education and research, there is a balance between the various tasks of academics. Maintaining a view across the whole width of academic work means that talented individuals are appreciated

[34] See also: https://www.nwo.nl/nieuws/voortgang-maatregelen-om-druk-op-het-wetenschapssysteem-te-verlagen

for the value they bring and that there is scope for rewarding achievements in such domains as education, impact, patient care, public involvement (including scientific communication), entrepreneurship, and academic leadership. This does not mean that every lecturer and researcher has to do everything. Indeed, it is precisely a certain degree of specialization that increases quality, reduces the pressure of work, and enhances diversity and inclusion. This transition in the recognition and rewards of career paths is in close keeping with my vision for a balanced and future-proof system. I will therefore continue to give financial support to the 'Erkennen en Waarderen' ('recognition and rewards') programme of the Universities of the Netherlands, Dutch Federation of University Medical Centres, Dutch Research Council, Netherlands Organisation for Health Research and Development, and Royal Netherlands Academy of Arts and Sciences[35] for the next few years (2022-2026), within existing financial frameworks.

Embarking on this transition will be a carefully considered process. I will continue to discuss recognition and rewards with employees at research universities, research institutions, and international partners. I believe it to be important that we do not lose sight of the complexity of this subject and the wider international context. We would like to be in the vanguard of this reappraisal, but also to maintain our strong connections to the international professional field and to properly position top-level research. The grant programme will therefore provide annual progress reports and a culture barometer, with a view to maintaining a support base. I will also be entering into discussions with initiators of the national programme on what form independent evaluation should take, as requested by MPs van der Woude and van der Molen.[36]

I will also talk to the initiators of the national programme about an appropriate strategic personnel policy, with a focus on varied teams and career paths for teaching, social impact, and open science. To ensure that the carrying out of research at universities of applied sciences also remains strongly connected to education and to the generation of social impact, I will also be asking them to think about what form the recognition and rewards of various talented individuals will be taking.

The development of a range of talents will also help researchers to be better prepared for their future careers. For example, the majority of PhD students and postdocs (more than 70% and 50% respectively) do not continue their careers in academia, but go on to contribute to society in other ways. I think it is important for research universities and research institutes, as good employers, to be more closely aware, during the PhD phase and postdoc programmes, of the various talented individuals concerned and of labour market orientation both inside and outside academia.

Objective 3: Increasing the societal impact of higher education and research

Both the societal impact of our system of higher education and research, and the public recognition of it, must continue to grow. What this certainly involves is the major societal challenges of today, such as climate change, energy, nitrogen, housing, healthcare, security, equality of opportunity, the labour market, and all

[35] See also: https://www.universiteitenvannederland.nl/Erkennen-en-waarderen-van-wetenschappers.html
[36] TK 31288, no. 953.

the other challenges mentioned in the Coalition Agreement. Higher education turns young people into skilled professionals who make an essential contribution to tackling these societal challenges. It is also about identifying and understanding the challenges that will face society in the future, including the ethical and moral aspects of new technologies, the specific applications of which currently still seem a long way off. This will help Europe, the Netherlands, and specific regions to take on these challenges in good time. One specific task mentioned in the coalition agreement is the stimulation of professional degree programmes that are relevant to the labour market. Below, I address the question of improving the links between educationand the changing labour market, the importance of sharing knowledge and of utilizing the knowledge chain and ecosystems (nationally and internationally).

3.1 Aligning education with the changing labour market

3.1.1 Strategic, regionally oriented deployment of professional education

Strengthening vocational and higher professional education through regional collaboration

I am committed to strengthening the VMBO-MBO-HBO education column. The aim is to achieve greater flows from one to the next and to enhance the chances of success of students seeking to move from an MBO study programme to HBO. I am aiming for an increase in student satisfaction regarding the connection between the MBO and HBO and, once routes have been developed, reducing dropout rates and study switches by at least 10%. We are strengthening the vocational and higher professional education column by stimulating regional collaboration, aimed at the creation of joint teaching and examination programmes of existing study programmes, with a grant of up to € 20 million a year. Offering institutions the possibility of jointly shaping continuous learning routes from VMBO to MBO and to HBO, including continuous career orientation and advise, will help – in addition to reducing dropout rates and study switches – towards achieving greater flexibility in the education of professionals in a rapidly changing and innovative labour market. Collaboration with existing initiatives, such as Regional Ambition Plans, will also be possible. Together with partners from the three sectors – institutions and student organizations alike – this will be taken further so that regions that so wish can start redesigning study programmes.

As well as strengthening the progression from VMBO to MBO, progression from higher professional education (HBO) to university education (WO) is also an object of my focus. I believe it important that research university Master programmes are easily accessible to HBO Bachelor's graduates, with pre-Master's or bridging courses being available where necessary, and that institutions work together in promoting students' progression. A report by the Inspectorate about progression from HBO to WO (2019) indicated that the legislation regarding pre-Master programmes created an ambiguity in practice and that as a result, certain groups found themselves wrongly excluded from joining WO Master programmes. Thanks to the Varia Act, which took effect on 1 September 2021, this ambiguity has now been eliminated. It is too early to draw any conclusions about the effects of this law on the availability of pre-Master programmes.

Investing in degree programmes for professions in sectors with shortages

The Dutch labour market is experiencing significant and increasing shortages. Vacancies at the MBO and HBO levels in particular are proving hard to fill. The Letter to Parliament on tackling labour market shortages, which will be sent before the summer, will give more detail about the cabinet's overall approach to tackling labour shortages. It will include measures in a range of policy areas and different sectors.

Higher education too can help address labour shortages. HBO has an important role to play in this, by training qualified personnel in the sectors where shortages exist: healthcare, education, and science and engineering (important too for climate-related jobs).

The HBO programmes in these three 'shortage sectors' will receive amounts of up to €30 million a year, allocated according to student numbers and, in the case of education, in line with the agreements on teachers' work agenda. Universities of applied sciences can use these resources to (1) increase student intake into study programmes in the healthcare, science and engineering, and education sectors,[37] (2) limit unnecessary dropping out and study switching in these sectors, and (3) improve links between the institution and the professional field in order to reduce dropping out of the professional field after graduation. Because the challenges facing every university of applied sciences and region are different, I would like to give the universities of applied sciences the possibility to use the resources for the four purposes mentioned as they see fit. Each university of applied sciences will determine – in strategic consultation with the region – how the resources are to be used in a way that is relevant to the regional labour market demand and the economic and social developments there. Clearly-defined choices can be made by investing in targeted, effective, and – where possible – proven measures. Universities of applied sciences can prioritize the 'shortage sectors', thereby linking up more closely to the strategic ambitions and specific issues in their region. An interim evaluation will be held in 2025, and a final evaluation in 2029.

As mentioned above, work is also underway on strengthening the vocational and higher professional education column by stimulating regional collaboration. In practice, the two measures will mutually reinforce each other, and it is important that this interrelationship is monitored.

As well as strong links between education and the labour market, it is important that students decide upon their choice of study with great care. I believe it to be important that students are able to obtain information about deciding on the right study programme more easily. To achieve this, I am making €1 million available every year for Studiekeuze123, for the purpose of improving relevant information and making it more useful to students deciding what programme to choose. Choosing the right study programme reduces the likelihood of students dropping out or switching studies. The starting point remains that students (including prospective students) have the freedom to decide on their study programmes themselves, in line with their own intrinsic interests. However, it is very important that they are given clear descriptions of the relevant future prospects, including expected developments on the labour market.

[37] Except the HBO programmes subject to intake recommendations of the Advisory Committee on Medical Manpower Planning.

Boost for higher professional education for vitalizing regions whose populations are declining

We are expecting a nationwide fall in the number of HBO students in due course. Because demographic developments in each region differ, the impact on each institution will vary from one to the next. Growth is forecast in some regions, while in others institutions are expecting problems retaining a wide range of study programmes for strategic sectors or the specific demands of the labour market in the region in question.

To tackle these problems, I will invest € 90 million in regions whose populations are shrinking. I would eventually like to arrive at a vision for the future, in which efficiency and capacity will be key aspects of managing HBO programmes in areas of population decline. My intention is that study programmes that are crucial for the vitality of these regions do not disappear, but actually help create employment and economic activity in the regions. Investments will be made where necessary, and where they can lead to structural results. Important starting points, I believe, are regional profiling and close alignment to local labour market demand (including the basic infrastructure needed in a particular region). During my working visits to Groningen, Twente, and Maastricht, I saw that the regions are very confident about their profiling and are excellently placed to make strategic decisions that help increase the vitality of their regions. I intend that universities of applied sciences will be better enabled to take up their key connecting role.

In the meantime, I will be holding discussions with universities of applied sciences about long-term solutions in which the role of the fixed base ('vaste voet') in the funding of higher professional education should be looked at. This will take place in conjunction with discussions about the positioning of higher professional education in the knowledge chain and about student flows in higher (professional) education. Each of these elements will feature in my exploration of the future.

3.1.2 Macro-efficient range of programmes

Universities of applied science and research universities turn young people into professionals able to think and look critically and across boundaries, and who can make a substantial contribution towards resolving the problems facing society. It is important in this context that the offering of degree programmes in higher education is relevant, qualitatively and quantitatively, to demand in the labour market, society, and academia, and that the range of programmes available nationally is efficient, comprehensive, and varied. At a time of shortages on the labour market, this is as important as ever. This requires of institutions that they modernize not just their own curricula, but that they work jointly in determining the range of programmes for different sectors.

I have every confidence that the research universities and universities of applied sciences will actively rise to the task of controlling and readjusting their curricula, inside the institutions themselves, but also in the sectors and nationally. I am therefore calling upon sectors and institutions to take active charge of a macro-efficient offering, to reflect on it regularly, to make the results of their reflections clear, and to embed management based on macro-efficiency in the policies of the institution concerned. I am making available €2 million a year to help the higher education institutions achieve this. I would also like to hold discussions with the field, thereby fulfilling the proposals contained in the Letter to Parliament about

macro-efficiency by my predecessor, in order to bring about an improvement and further development of data, information, and insights about macro-efficiency.[38]

In this process of shaping and retaining a macro-efficient range of programmes, there are two points that I regard as particularly important. The first is more intensive collaboration between institutions in relation to curricula. Second, I believe that renewal in education should be shaped as much as possible within existing study programmes. This can help in the process of anticipating developments, thereby keeping programmes oriented towards the future. In cases where the launch of entirely new programmes is necessary, it is important that regulations on macro-efficiency and accreditation offer sufficient scope to do so, and that there is clarity regarding the exact possibilities.[39] Collaboration and stimulating renewal within the existing curricula form the pillars for reviewing the assessment framework for new study programmes. This is also in keeping with the direction towards a stable educational environment, and I believe it to be important to encourage and, where possible, to facilitate this by means of effective regulations. I am in discussion on this matter with Universities of the Netherlands, the Netherlands Association of Universities of Applied Sciences, the Committee for Efficiency in Higher Education, and the Accreditation Organisation of the Netherlands and Flanders, in the context of the revision of the 'Regeling Macrodoelmatigheid' ('macro-efficiency regulation), which was announced in the 'Strategische Agenda Hoger Onderwijs en Onderzoek' ('higher education and research strategic agenda'). I will ensure that a new 'Regeling macrodoelmatigheid' for higher education will enter into effect in early 2023. I am also working with the NVAO on making the explanations of the accreditation framework more explicit when it comes to scope for modernizing existing study programmes.

3.1.3 More flexible education: personalized and suitable learning routes

It is important that education is as relevant as possible to the characteristics, needs, and situation of the diverse student population, and to the needs of the (regional) labour market.

One significant step towards this is the National Growth Fund 'Digitaliseringsimpuls onderwijs' proposal ('digital boost for education'). The proposal will help create an improved and standardized ICT infrastructure for all higher vocational education (MBO), higher professional education (HBO) and research university (WO) institutions. This will make the organization of collaboration between educational institutions efficient. This in turn will provide the scope to organize education more flexibly, making it easier to create personalized learning routes. I am aware that flexibilization and digitization will have an impact on the system of higher education, and for that reason I would like to explore with the education sector what consequences these developments will have for the future of the system and how exactly it should be structured. This is therefore part of the exploration of future options ('toekomstverkenning').

[38] TK 31288, no. 896.

[39] The 'Ruimte in regels' brochure by the Ministry of Education, Culture and Science explains that study programmes have extensive scope for responding to developments without having to launch a new study programme. It gives a guideline to the effect that that scope be exercised responsibly; in the Ministry's view, no more than 50% of the exit qualifications for the whole study programme (including all variants) should be changed over a period of six years. However, 50% is a suggestion, not a hard and fast figure. Institutions may deviate from the figure if this is in keeping with their profile and study programmes, and if they are able to justify doing so.

Of course, people in employment make an important contribution towards overcoming society's challenges. That is why skills needed in the labour market of the future are being identified in the 'Nationale Katalysator Leven Lang Ontwikkelen' proposal being funded by the National Growth Fund, in order to help those in employment to continue learning, and why the development of learning options is being encouraged. My fellow minister, Wiersma, will address this in more detail in the letter on Lifelong Learning, together with our colleagues from Economic Affairs, and Social Affairs and Employment.

3.2 Knowledge chain and ecosystems

3.2.1 Collaboration within the knowledge chain

Investment in the complete knowledge chain, one of my considerations in strengthening higher education and science, is also a key aspect of increasing societal impact. Innovations in the public sector, the private sector, or the social domain often require a combination of blue sky fundamental research, applied and practice-oriented research, and innovation – sometimes successively and sometimes simultaneously, and sometimes within a discipline and sometimes between disciplines. It is not just researchers who play a role in this process, but also current and potential users, like lecturers and students. During my working visits, I have been much impressed by the education projects in which societal challenges and major transitions are, to an increasing degree, key elements, and which involve work that goes beyond the boundaries of disciplines and educational sectors (MBO, HBO and WO). The cabinet strategy for research and innovation ecosystems describes how different types of actors collaborate.[40] As explained above, I would like to strengthen the research infrastructure for all types of research, and I would like to support every type of knowledge institution in their participation in collaborative European research and innovation endeavours. It is precisely in the development and use of research infrastructures that many parties work in partnership, just as in many Horizon Europe projects, in which different types of organization work jointly on research, innovation, and societal challenges. This European research collaboration also helps strengthen the cabinet's policy on societal challenges, referred to in the coalition agreement.

3.2.2 *European partnerships*

To strengthen collaboration between leading researchers, knowledge development, and facilities in Europe and beyond, I will be investing €50 million per year between 2023 and 2029 from the Research and Science Fund. This will strengthen Dutch participation in European partnerships in Horizon Europe and related EU research and innovation programmes during the period of operation of Horizon Europe.[41] Among those to benefit will be research universities, universities of applied sciences, national knowledge institutions, TO2s, and businesses that collaborate at European level. This will boost excellence and collaboration in Europe in strategic research and innovation themes that have a significant contribution to make in addressing the major societal and technological challenges of our time, such as in the area of microchip and quantum technology and climate. As a result, it will give long-term help in preventing undesirable

[40] TK 33009, no. 96.

[41] It will still be possible to conclude contracts even after the final year of Horizon Europe. That is why the scheme must run until at least 2029.

crucial dependencies and contribute toward the competitive and earning capacity of the Dutch economy.

3.2.3 Knowledge security

For world-class higher education and science, internationalization and the open exchange of results, data, and researchers are essential. At the same time, important geopolitical shifts are underway and the Netherlands is increasingly facing threats from state actors. Dutch knowledge institutions are targets too, which makes measures aimed at protecting our knowledge essential. In the cabinet, I am therefore developing a government-wide approach on increasing knowledge security in higher education and science.[42] This involves increasing awareness and resilience inside the knowledge institutions, including in the area of cyber security. This is taking place through continuous dialogue with the Dutch knowledge community, the government-wide Knowledge Security helpdesk, the assessment framework for researchers from third countries, and by putting this theme on the agenda at European and international level. Below, I explain these instruments from the government-wide approach.

At the start of this year, the government and the Dutch knowledge community published National Knowledge Security Guidelines. It offers institutions guidelines on recognizing threats and risks and for taking measures aimed at mitigating them. In a letter, I have recently called upon the institutions to implement these guidelines, by carrying out integrated risk analyses, for example, and by appointing, in each institution, a knowledge security portfolio holder at the management level.[43]

To ensure that institutions have the relevant information (including about threats) and advice at their disposal when assessing opportunities and risks associated with international collaboration, I opened the government-wide Knowledge Security helpdesk in late January. The helpdesk will be further expanded in the near future.

In knowledge fields where the risks to national security are greatest, researchers from third countries will have to undergo an assessment before being able to work for any Dutch knowledge institution. To that end, I am developing an assessment framework designed to prevent the deleterious transfer of knowledge and technology. The House will receive the proposals for this assessment framework at the end of this year.

With a subject like security, it is particularly important that the Netherlands acts in harmony with partners inside and outside the EU. At the EU level as well as bilaterally, I am committed to getting knowledge security higher up on the agenda. The Dutch Research Council strategy, to be published in July 2022, will also focus on collaboration in the area of knowledge security.

3.2.4 Research agendas with societal challenges

Through several stimuli, the cabinet is enhancing the contribution made by higher education and research to tackling societal challenges. As set out by the Advisory

[42] TK 31288, no. 948
[43] TK 31288, no. 950

Council for Science, Technology and Innovation (AWTI), this is a two-track process, via bottom-up research and by linking targeted funding to certain societal challenges.[44] The purpose of the extra investment in the National Growth Fund is to strengthen the Netherlands' sustainable revenue model. This concerns both pillars of the National Growth Fund: Knowledge development (including education and lifelong learning), and R&D and innovation. From the third round, which starts in 2022, the assessment committee will devote extra attention to the thematic cohesiveness of its portfolio, for example by treating the mission-driven top-sector and innovation policy more emphatically as a starting point, and by formulating specific challenges in areas of focus. The cabinet will also continue to invest in the National Research Agenda in which researchers work on scientific and societal breakthroughs, together with citizens, social organizations, and businesses on an interdisciplinary basis. Societal challenges also have a prominent position in the research agenda for scientific disciplines and intersecting domains like artificial intelligence.

The Dutch Research Council is involved with most research agendas in the Netherlands that are relevant to at least one Dutch Research Council instrument. During the next few years, the council will put extra focus on the way in which the various research agendas and the various instruments complement each other.[45]

3.3 Sharing and utilizing knowledge

3.3.1 Open science and open education

Open science and open education should become the norm in higher education and research, as stated in the coalition agreement. Academic work must be easily accessible and dialogue between researchers, lecturers, and citizens should be encouraged. This is because the open and safe exchange of ideas between researchers and societal parties is essential for excellent scientific practice and helps improve the quality of scientific knowledge. The objectives converge in the transitions to open science and open education, which are currently at different stages. To give an extra boost to the transition to open science, which got underway in the previous decade, the Dutch Research Council and I are exploring the possibility of setting up an organisation to coordinate open science, for which I will hold discussions with the field. This organisation will make it possible to harmonize, pool, and coordinate efforts at a national level more effectively. The organisation will manage a sum of € 20 million a year to help boost the transition, for the duration of the Research and Science Fund. Open science should then be the norm and should be incorporated entirely by universities and other knowledge institutions.

I will also be encouraging open education. This involves institutions working individually and jointly, via SURF, on developing and sharing open learning materials. The 'Digitaliseringsimpuls onderwijs NL' proposal, which is being funded by the National Growth Fund, will enable higher education to develop open learning materials. At the same time, we see that open education currently comes

[44] AWTI (2022). *Grenzeloos onderzoek. Stimuleer interdisciplinariteit met twee onderscheidende overheidsrollen.* In response to a letter from the Standing Committee for Education, Culture and Science (reference number: 2022D15053) with a request to include the AWTI recommendation in the policy letter.

[45] This way, and also in the way described above for the sector plans, various instruments will be examined to see how profiling and collaboration are encouraged. As promised to MP van der Woude to address the instruments for profiling and collaboration in the policy letter, during the Memorandum consultation on the outline letter on higher education and science.

in many forms, such as in terms of the accessibility of education, the freedom to choose learning paths and teaching methods, and the active involvement of society (examples that come to mind include community engaged learning in the 'City Deal Kennis Maken'). In the near future, I would like to explore with the research and education community what further steps we should take in order to stimulate open education. In this context, I am mindful of the interrelationship between open science and open education, the broader significance of openness in education, and of the interrelationship with challenges associated with knowledge security.

3.3.2 Knowledge utilization

The Ministry of Education, Culture and Science contributes towards knowledge transfer and societal impact, the third core task of research universities and universities of applied sciences. The aim is to strengthen this task. At the request of the motion by MPs van der Woude and van der Graaf, I will produce a clear vision – in collaboration with the Minister for Economic Affairs and Climate Policy, universities and other knowledge institutions, societal organizations, start-ups, and the private sector – on societal impact, including valorization.[46] I am counting on the necessary input in the near future from the universities of applied sciences and research universities to assist with the creation of the vision in terms of formulating useful and realistic objectives for knowledge transfer. I am favourably disposed to the further possible involvement of the AWTI in preparing for such a vision for better knowledge transfer and more opportunities for societal impact, of the kind that your House is considering initiating. Some steps have been taken in recent years, such as the teaching of entrepreneurship, the Faculty of Impact, the Themed Technology Transfer Scheme, and in the National Research Agenda.

An important event took place on 14 April 2022, when the Biotech Booster programme submitted by the Ministry of Education, Culture and Science was awarded funding in the second round of the National Growth Fund. With an award of €49.6 million and a provisional award of €196.4 million, the public-private consortium can accelerate the utilization of Dutch knowledge of biotechnology. In the third round of the National Growth Fund too, the ministry, together with research universities and others, will submit an application aimed at knowledge utilization and valorization. In more general terms, the National Growth Fund gives a significant boost to knowledge utilization in a broader sense and valorization in particular. Public and private parties work together on knowledge accumulation and valorization in almost every proposal awarded funding in the R&D and Innovation pillar.

At the same time, action still needs to be taken, for example by focusing more on impact in the transition towards broader recognition and rewards, including an entrepreneurial attitude and entrepreneurship. At the request of the Minister of Economic Affairs and Climate Change and myself, the Knowledge Transfer Working Group of knowledge institutions will look, together with Techleap.nl, at whether intellectual property licences of the knowledge institutions would be more appropriate to their role of entrepreneurial researchers, while retaining confidence

[46] TK 31288, no. 952. In the debate about the outline letter, I promised your House that this would take place before the summer. This motion will be dealt with in conjunction with the motion by MP van Strien *et al.* (TK 35925, no. 24) in the Standing Committee on Economic Affairs and Climate Change. As a result, it is expected that it will not be dealt with until autumn this year.

in the science.[47] If the working group suggests improvements that are also supported by the managements of the Dutch Research Council and the Dutch Federation of University Medical Centres, my fellow minister at Economic Affairs and Climate Change and I would like to agree with these two bodies that we will monitor the improvements, issuing periodical progress reports.

A focus on knowledge utilization is also important with blue sky fundamental research, in order to identify new societal challenges in good time, for example, and to analyse and hopefully anticipate them. As the details of the sector plans are worked out, I will ask that attention be paid to this aspect. The Theory of Change approach recommended by the Royal Netherlands Academy of Arts and Sciences can serve as a source of inspiration. The approach explains the steps needed for new knowledge to lead to societal impact. I am also much enthused about how the Dutch Research Council challenges researchers to think about the possible societal impact of research and to support this with modules for knowledge utilization.

3.3.3 Science communication

Science communication is greatly important in encouraging dialogue between science and society. It makes citizens participants in the scientific process and helps increase confidence in science, including practice-oriented research. Sharing science in its broadest sense with specific groups can enhance its societal impact. I am using here the broad definition of science communication: one the on hand, scientists have the important task of informing, explaining what are often complex scientific matters in a way people can readily understand, but it is also about public involvement, in which citizens are part of the scientific process and are involved with the choices that researchers make. The difference between the working methods of researchers and – as in the case of climate policy and tackling COVID-19 – the decisions taken by policymakers and politicians should also be made clear.[48]

In the Netherlands, there are many outstanding initiatives in the area of science communication, and it is pleasing that researchers increasingly regard science communication as an essential part of their work and that action is being taken to safeguard it in the recognition and rewards programme. For example, there are numerous scientists who are entering into discussions with citizens about the questions, structure, outcomes, and implications of their research. This takes place in the initiatives of researchers and institutions themselves as well as in programmes of the National Research Agenda, with universities of applied sciences, research universities, and other knowledge institutions collaborating with citizens and societal organizations.

I would therefore like to direct efforts designed to encourage and strengthen science communication through the sharing of expertise and the expansion of capacity, via a new centre based around science communication. I am making a total of € 10 million available in the next ten years for this purpose, within the

[47] This is a follow-up to the recommendation of the AWTI (2020). *Beter van Start; de sleutel tot doorgroei van kennisintensieve start ups.*

[48] The importance of a clear distinction between the roles of researchers and policymakers – and its influence on confidence in science – is underlined by the Rathenau Instituut. *Onafhankelijke, betrouwbare en veilige wetenschap* ('independent, reliable, and safe science') is one of the memoranda drawn up by the Rathenau Instituut as input for the higher education and science policy letter and the Dutch Research Council strategy (to be published in July 2022).www.rathenau.nl

existing financial frameworks.[49] The centre will be able to use experiences from abroad, such as Wissenschaft im Dialog in Germany, and the National Coordinating Centre for Public Engagement in the United Kingdom. It is important to collaborate more effectively and to ensure that the knowledge that scientists who carry out research into science communication, into what does and does not work, and into how to shape it, finds its way to the people who are engaged with science communications in practice. I will shortly be entering into discussions about the development of the new centre with experts and the field at large.

Accountability, monitoring, and evaluation

For the overall aims and the three main objectives, a number of interrelated instruments have been introduced in this policy letter. Accountability for and the monitoring and evaluation of these resources and instruments are necessary to have a clear view of the results (envisaged and actual), and in order to continually improve policies and their implementation. The details of this are being worked out in the administrative agreement with the Netherlands Association of Universities of Applied Sciences and Universities of the Netherlands. This will enable us to periodically monitor and discuss progress. To avoid unnecessary costs associated with the regulatory burden, existing databases will be used as much as possible.

The progress made on the most important indicators for the objectives at the system level will be available online and in the budget and annual report of the Ministry of Education, Culture and Science from 2023.[50] In a letter to your House in mid-2023, I will take stock of the progress with regard to the three main objectives.

With the investments from the coalition agreement, we are taking a significant step towards the Lisbon Strategy, which involves the investment of 2.5 to 3% of GDP in research and development. With the university of applied sciences and university sectors, I would like to continue developing future-proof funding. A joint factual basis through a clearer understanding of expenditure among the institutions is an essential part of this.

Knowledge about envisaged and actual results does not in itself lead to improvements in education, research or policy decisions. If the data do not show unambiguous outcomes and if there is too wide a range of various perspectives (within and between disciplines, regions, and types of education), then discussions on these matters are crucial. For that reason I will conduct – as part of my working visits – a strategic dialogue with the institutions about progress in the three main objectives and the overall ambition: what is going well, and what is not going well? What is working, and what is not? How can the strategies of educational institutions and the policies of the government strengthen each other?

In this context, I will be organizing a working conference with the sector every year, from 2023, on the progress of the three main objectives. Students, researchers, lecturers, and managers will be able to share their experiences and

[49] In doing so, and with the section about open science and open education (3.3.1), I am fulfilling the undertaking in the letter of 26 May 2021 to inform your House during the first six months of 2022 about the progress on how the recommendations of the Rathenau Instituut in the 'Samen verder met open science. Op weg naar betekenisvolle publieke betrokkenheid bij onderzoek' report can be implemented in order to further embed public involvement with science.
[50] For information on the progress, see the https://www.ocwincijfers.nl/ website.

lessons at the conference, which will also look at specific efforts and results. The broader knowledge community and society generally are warmly invited to attend and to contribute their critical input to the conference.

The above approach ties in with the Strategic Evaluation Agenda, a government-wide instrument intended to gain a greater understanding of the effectiveness and efficiency of policy. To that end, I will be publishing a system report in 2023, setting out the current position vis-à-vis the quality, accessibility, and efficiency of the system. The periodical publications by the Rathenau Instituut and others are relevant to science specifically, especially the 'Balans van de Wetenschap' ('science in figures'). Whereas the system report and the publications by the Rathenau Instituut monitor the system across the board, I would like to apply closer focus by including the three main objectives and a number of secondary themes in the Strategic Evaluation Agenda 2022-2026:

a. Strong and healthy foundations: scope for blue sky research, profiling, and collaboration, and the reintroduction of the study grant;
b. Creating scope for a wide range of talent: social safety, student well-being, and the pressure of work facing employees;
c. Increasing the societal impact of higher education and research: in relation to sectors with shortages and vital regions.

I will also set out the details of a separate strategic evaluation agenda for the Research and Science Fund, in order to gain a clearer picture of the efficiency and effectiveness of the fund. The line of thinking is as follows: in ensuring that the fund is effective for both the short and long term and in order to optimize cohesiveness between the instruments, monitoring, evaluation, and adjustments are very important. It will be necessary to make very clear which instruments help towards which objectives and aims of the fund ('objective tree'). By making the policy theory explicit in advance, it will be possible to test and improve the plausibility of effectiveness. The question here is: by what mechanisms do input and activity lead to output and outcomes for the relevant parties and to a broader-based impact? In many cases, undesirable side-effects enter into the picture. Additionally, these ex ante analyses mean that definitions and indicators can be determined in advance (for the quality of science, for example), with clarity for and a support base among those involved, rather than halfway through or at the end.

The details of the investments that have been announced are currently being worked on. This means that it is not yet possible to identify specific indicators (for monitoring and evaluation) at the instrument level. Before the Ministry of Education, Culture and Science budget debate for 2023, I will update your House regarding the indicators that will be related to the three main objectives, and specifically too, the fund indicators for the strategic evaluation agenda.

Further consideration of the major issues in the exploration of the future ('toekomstverkenning')

This policy letter comes at the start of the government term in order to set out the main outlines of the policy at an early stage, together with the investments and policy decisions that they will entail. A number of issues and decisions require further consideration.

Labour market demand is strong but rapidly fluctuating, while jobs are more complex and require different skills and the ongoing training of employees. Links between institutions of higher education and society require careful thought about their roles in their regions and the international position of institutions. Worldwide demand for higher education is growing, and mobility is increasing. At the same time, demographic developments in the Netherlands are indicating that the number of young people entering higher education is falling. How do we maintain our leading international position while ensuring that higher education and research are firmly embedded in the regions? Regarding these questions, is the role of universities of applied sciences and research universities different when it comes to their regional function, for example?

The Netherlands Association of Universities of Applied Sciences and Universities of the Netherlands have also urged me to review the structure of the system. They have already produced ideas and announced the development of their own vision. I will therefore launch an exploration of the future with both bodies immediately after the summer. I will of course also be involving students, lecturers, and researchers in this process. The aim is for us to reflect on how future-proof the system is in this rapidly changing world and, related to this, to look at a number of major issues, and to make sure that the strategies of educational institutions and the policies of the government strengthen each other as much as possible.

Mutually-related issues to be looked at:

- How can Dutch universities of applied sciences and research universities jointly meet demand for human capital until 2030, and the years thereafter, up to 2050?
- How do we achieve more easily predictable and stable student flows? In the process, how do we combine the 'student at the right place' principle and broad-based accessibility with regional population decline scenarios, maximum use of the educational infrastructure, and international positioning?
- How can we profile and position HBO and university education more clearly in order that the strengths of each can be used and to achieve maximum complementarity, including in relation to the rest of the education chain? How do we ensure that students make the choices that are most suitable for them? And how do we make sure that institutions collaborate as effectively as possible and heighten their profiles in order to be relevant to strategic regional ambitions and to the national and international interests of the Netherlands?
- How do we use the binary system as effectively as possible and to what extent is a more fundamental review of the system desirable, even for the purpose of offering sufficient scope for flexible higher education? There is a need for short retraining and refresher courses (lifelong development), and there is also demand for personalizing education in terms of time, form, and content. Are these developments taking place in, alongside, or instead of regular diploma-based education? What does this require of legislators?
- To what extent is the funding system still suitable for and helpful to the challenges faced by the higher education institutions? To what extent could an adjustment to the fixed base help towards long-term solutions to issues relating to declining populations?

In conclusion

Our reference

In this letter, I have set out my three main objectives and specific policy choices for the near future. I will be seeking to work on strengthening the foundations of our higher education and science system and on that basis create scope for a range of talents. With a cohesive package of instruments, financed from the Research and Science Fund, and the structural budget for advanced programmes and research, the Netherlands can stand out on the international stage and work on increasing its societal impact. In addition to the specific investments I will be making to achieve this, which I have referred to in this letter, I am also careful not to lose sight of the importance of the well-being and security of students, lecturers, researchers, and other employees. This is because I am aware of the pressure of work and the uncertainties they face and of the need to bring calm and sufficient room into the system. The proposed investments are a good start in making the system future proof.

I will of course remain in discussion with students, lecturers, and researchers during the time when the aforementioned plans are being carried out, to enable them to share their experiences with me; I can learn from them and incorporate what I have learned into my policies. I hope this letter leads to a constructive dialogue within institutions. I will report to your House in mid-2023 about the progress with regard to the three main objectives.

The Minister of Education, Culture and Science,

Robbert Dijkgraaf

Appendix 1: Coalition agreement resources for the main objectives for higher education and science (in Dutch)

Bedragen x € miljoen	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	
Doelstelling 1 - Een gezond en sterk fundament											
Starters- en stimuleringsbeurzen (structureel)	50	156	156	156	156	156	156	156	156	156	R
Starters- en stimuleringsbeurzen (10 jaar)	50	144	144	144	144	144	144	144	144	144	F
Sectorplannen voor onderzoek en onderwijs	60	200	200	200	200	200	200	200	200	200	R
Praktijkgericht onderzoek (structureel)	30	50	50	50	50	50	50	50	50	50	R
Praktijkgericht onderzoek (10 jaar)	15	50	50	50	50	50	50	50	50	50	F
Roadmap grootschalige wetenschappelijke infrastructuur	50	50	50	50	50	50	50	50	50	50	F
Strategische agenda toegepast onderzoek faciliteiten	3	87	31	86	40	92	40	70	34	21	F
Matching Horizon Europe	0	75	75	75	75	75	75	75	0	0	F
Levensbeschouwelijke universiteiten	0	5	5	5	5	5	5	5	5	5	R
Doelstelling 2 - Ruimte geven aan talent											
Open Competitie	60	60	60	60	60	60	60	60	60	60	F
Toponderzoek	20	20	20	20	20	20	20	20	20	20	F
Kennisveilgheid en sociale veiligheid	4	11	9	9	9	9	9	9	9	9	F
Studentenwelzijn	1	15	15	15	15	15	15	15	15	15	R
Starters- en stimuleringsbeurzen											*
Sectorplannen voor onderzoek en onderwijs											*
Doelstelling 3 - Bijdragen aan de maatschappelijke uitdagingen van nu en de toekomst											
Europese Partnerschappen	15	50	58	50	50	50	50	50	0	0	F
Open Science	4	20	20	20	20	20	20	20	20	20	F
Aansluiting onderwijs-arbeidsmarkt	1	31	31	31	31	31	31	31	31	31	R
Doorstroom beroepskolom	0	10	18	20	20	20	20	20	20	20	R
Macrodoelmatigheid opleidingsaanbod	2	2	2	2	2	2	2	2	2	2	R
Vitalisering krimpregio's	0	12	10	4	0	0	0	0	0	0	R
Vitalisering krimpregio's (OCW begroting)	15	13	15	21	0	0	0	0	0	0	B
Praktijkgericht onderzoek											*
Strategische agenda toegepast onderzoek faciliteiten											*
Matching Horizon Europe											*
Open Competitie											*
Toponderzoek											*
Kennisveilgheid en sociale veiligheid											*
Uit te werken voorstellen voor o.a. kennisbenutting/impact, vitale regio, aansluiting Europese onderzoeksprogramma's voor beleid en	0	18	18	18	18	18	18	18	18	19	F
Uit te werken voorstellen voor o.a. BSA, cybersecurity, dekkend aanbod en Scholars at Risk	0	25	19	24	27	27	27	27	27	27	R
Uitvoering, monitoring, verantwoording, evaluatie	9	9	10	10	10	10	10	10	10	10	F/R
Totaal	**389**	**1.113**	**1.066**	**1.120**	**1.052**	**1.104**	**1.052**	**1.082**	**921**	**909**	
w.v. Fonds Onderzoek en wetenschap	227	590	541	588	541	593	541	571	410	398	
w.v. Reeks Vervolgopleidingen/onderzoek	147	510	510	511	511	511	511	511	511	511	
w.v. Begroting OCW	15	13	15	21	0	0	0	0	0	0	

F = Fonds Onderzoek en wetenschap
R = Reeks Vervolgopleidingen/onderzoek
B = Begroting OCW
* = Deze instrumenten dragen bij aan meerdere doelstellingen, maar zijn in de tabel eenmaal voor het volledige bedrag opgenomen

Appendix 2: Policy decisions explained

Substantiation of effectiveness, efficiency, and evaluation (CW 3.1)

Component	Explanation
Goals	The purpose of the Research and Science Fund is to continue strengthening the higher education and science system and to resolve a number of fundamental problem areas, as mentioned in the coalition agreement. This is closely related to the challenges that go with the structural budget for advanced programmes and research contained in the coalition agreement. The temporary and structural investments will make the system future proof. The three main objectives in this context are, as mentioned previously in the letter: (1) strong and healthy foundations (2) creating scope for a wide range of talent (3) increasing the societal impact of higher education and research. These three main objectives are set out separately in detail in Chapters 1, 2, and 3, with reference also made to the policy instruments.
Policy instruments	For the Research and Science Fund, this concerns – for each main objective – the following policy instruments: • Main objective 1: starters and incentive grants (section 1.1.1), practice-oriented research (1.1.3), large-scale scientific infrastructure and facilities for applied research (1.1.4), and Matching Horizon Europe (1.1.5). • Main objective 2: Knowledge security and social safety (sections 2.1.1 and 3.2.3) and open competition and top-level research (2.2.1). • Main objective 3: European partnerships (section 3.2.2) and open science (3.3.1). The instruments for the resources in the coalition agreement for advanced programmes /research are mostly the sector plans for education and science (section 1.1.2) and a structural contribution for practice-oriented research (1.1.3). It also concerns instruments for student well-being (2.1.3), the link between education and the labour market, and the movement of students within the vocational column (3.1).
Financial consequences for the government	The investments involve the continued use of the resources from the coalition agreement that were made available earlier. Between 2022 and 2031, it involves a total of €5 billion for the Research and

	Science Fund. The investments from the advanced programmes /research budget involve €147 million for 2022, €508 million for 2023, and from 2024, €510 million per year on a structural basis. For the annual amounts, see Appendix 1 - 'Coalition agreement resources for the main objectives for higher education and science'.
Financial consequences for societal sectors	Strong and healthy foundations (objective 1) will be achieved by strengthening the capacity for scientific research and higher education (starters grants and incentive grants, sector plans, and top-level research). Such strengthening is good for the knowledge economy and especially for companies and knowledge-intensive societal partners. Instruments like European partnerships and open science also help bring about the innovative solutions to societal challenges that are needed. RaboResearch has recently calculated that each additional euro that is invested in knowledge yields added value to the economy that exceeds that amount many times over.[51] Research therefore benefits every sector. In addition, the main objective of contributing towards addressing the societal challenges of today and the future (objective 3) can be attained through the contribution made by practice-oriented research to applied societal issues and to innovation by various parties, such as small-to-medium size enterprises and public-sector institutions. Also, the private sector will receive orders for the construction and maintenance of some parts of the scientific and applied research infrastructures.
Effectiveness	With the Research and Science Fund, objectives will be reached by means of a boost and by urging changes whose effects will continue to be felt even after ten years. • Thanks to starters grants and incentive grants the Netherlands, as a knowledge-based country, will be in a position to give a boost to Dutch science due to the construction of stable and long-term lines of research (objective 1) and to remain a haven for scientific talent (objective 2), while the likelihood of making an impact will be even greater (objective 3). With the investment in practice-oriented research, universities of applied sciences will be able to further expand their roles as knowledge institutions (objective 1), contribute towards innovative and high-quality vocational education

[51] RaboResearch (2021). *Nut en noodzaak van (publieke) kennisinvesteringen*.

	(objective 2), and help towards regional and other societal issues (objective 3). • Strengthening large-scale scientific infrastructures and applied research infrastructure means that researchers in the Netherlands can conduct excellent research (objective 1), that the country will become more attractive to highly talented individuals (objective 2), and that research contributes towards meeting societal challenges (objective 3). • Matching Horizon Europe and European partnerships enable knowledge institutions to be among the world leaders (objective 1) and, at the European level, to contribute towards addressing the major societal and technological challenges of our time (objective 3). • Top-level research and open competition will increase the capacity of excellent research and strengthen the profiling of the scientific landscape (objective 1). • The investments in open science will hasten the transition and make open science the norm (objectives 1 and 3).
Efficiency	For strong and healthy foundations (objective 1), use will be made of existing instruments (practice-oriented research), procedures (roadmap calls for large-scale scientific infrastructure and applied research facilities), and schemes (Matching Horizon Europe). This is more efficient than setting up new organizations, procedures, or schemes that would exist in parallel to existing and familiar methods. The new instrument – starters grants and incentive grants – is in keeping with the methods and wishes of the academic world and involves a fair and simple allocation system. This allocation method prevents a lot of time being lost to writing and assessing the detailed content in applications for research grants. The result is an efficient use of resources. The objective for giving scope to talent (objective 2) involves the use of existing instruments, such as open competition, which sees the selection of the best research proposals. In the case of the new top-level research instrument, the decision on which top-level research fields should be eligible is based on a selection process coordinated with the community. This means that the fields that are selected fit well in the existing landscape of universities and other knowledge institutions.

	Existing schemes (such as European partnerships) are also used to help tackle societal challenges of today and the future (objective 3). The implementation of this scheme is in line with the existing procedure and is therefore efficient. The open science instrument and organisation to coordinate is to be brought under the purview of the Dutch Research Council.
Evaluation section	Via the budget cycle, the Ministry of Education, Culture and Science reports in the strategic evaluation agenda about the scheduling of programme evaluations and evaluations that have a major budgetary or political and administrative significance, or that have a great impact on the development of the field. Specific current themes may be included. The evaluations are scheduled to fit in with knowledge needs and pre-existing decision moments in the policy cycle. The strategic evaluation agenda is updated every year. In the previous chapter, I informed you about accountability, monitoring, and evaluation. In the letter, I informed you about accountability, monitoring, and evaluation on pages 28-30.