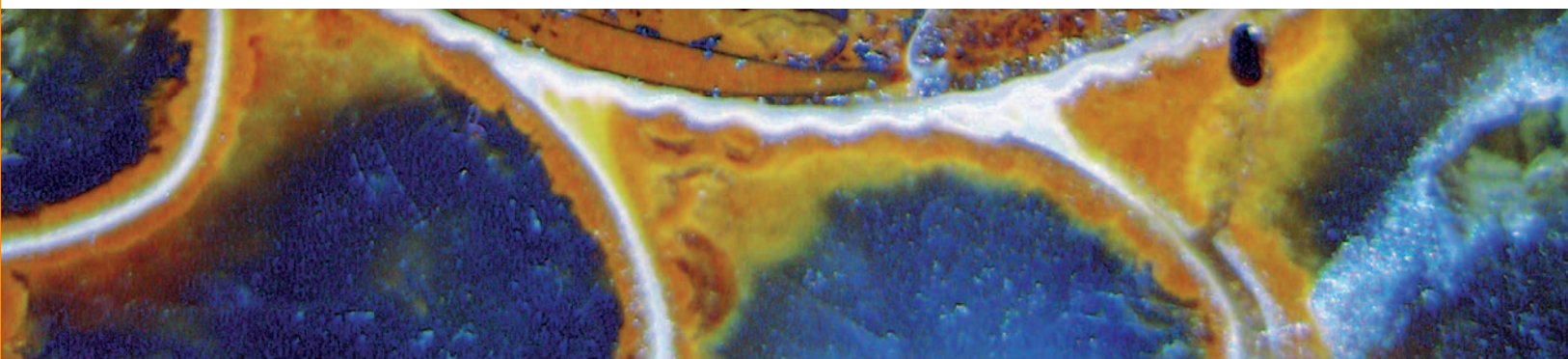


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## Strategic agenda for higher education, research and science policy

November 2007



# Introduction

We live in a complex society that requires people who are able to deal with this complexity. Progress is achieved particularly by the results of scientific breakthroughs and innovative activity introduced by people performing at a high level. A well-educated population, an enterprising attitude and high-quality services and products are therefore conditions for a vigorous society which is both competitive and successful in tackling social problems.

Education and science are more than just the drivers of the knowledge economy. Money is not the only point at issue. Considerations such as an understanding of personal identity, historical backgrounds, nature and the environment, social relationships, culture and art, are also involved. In short: these are decisive factors for the quality of life. In this respect, the educational and scientific establishment has an important role to play. For this reason, I drew up this strategic agenda for higher education, research and science policy only after close consultations with colleges of higher professional education, universities, research institutes and students.

This agenda includes common objectives with a particular focus on the most important problems highlighted in, for instance, the recent OECD review of Dutch higher education and research. However, in addition to common objectives, there must also be scope for the personal ambitions of students and for the individual profiles of institutions. After all, real enthusiasm is the powerhouse behind innovation and progress. In order to generate and stimulate that enthusiasm, an ambitious learning culture and an excellent research climate are necessary.

Just like the other members of the cabinet, I used the first few months of this term of office to acquaint myself with current issues relating to the policy areas for which I am responsible. Part of this orientation is reflected in the Government policy programme 'Working together, living together 2007-2011' [Samen werken, samen leven 2007-2011]. In this strategic agenda, we examine the ambitions of that policy programme using three questions that form the basis of every joint undertaking:

- ⋮ Where do we stand?
- ⋮ Where are we going?
- ⋮ How are we going to handle the organisation?

# Content

	<b>Introduction</b> . . . . .	<b>1</b>
<b>1</b>	<b>Where do we stand</b> . . . . .	<b>3</b>
<b>2</b>	<b>Where we are intending to go</b> . . . . .	<b>8</b>
2.1	An ambitious learning culture . . . . .	8
2.2	An excellent research climate . . . . .	9
<b>3</b>	<b>Handling the organisation</b> . . . . .	<b>11</b>
3.1	How do we achieve an excellent learning culture? . . . . .	11
3.2	How do we achieve an excellent research climate? . . . . .	14
3.3	Supplementary resources . . . . .	18
	<b>Endnotes</b> . . . . .	<b>19</b>

# 1 Where do we stand

## A survey of the situation

### Fragile social success

From the founding of our first university in Leiden in 1614, shortly before the advent of the Golden Age, education, knowledge and science were the factors supporting the development of the Netherlands. More than 430 years later, our country is again one of the ten most competitive economies in the world. The Netherlands is one of the leading countries from a scientific point of view<sup>1</sup> and is home to knowledge-intensive businesses and worldwide market leaders such as Shell, Philips, Unilever, Akzo-Nobel, Corus and TomTom NV. Every Dutch university has at least one research area that belongs to the world's best. Graduates of our colleges of music and design schools include some of the leading international figures in their field. In short, our knowledge institutions play a central role in the success of the Netherlands.

However, that success is fragile. Many changes are taking place in the Netherlands and there is still a great deal that needs to be done. Safety, clean energy, medical care and sound education all require our attention. Moreover, social problems are acquiring an increasingly international dimension. Changes in society, on the labour market and in international relations result in uncertainty. Those failing to innovate will be swept aside by the competition, because relationships in the global economy are shifting. Asian countries are increasing in might with China being the most extreme example. From 1980, the Chinese economy grew by an average of 10% per year. In China, approximately 15% of young people participate in higher education, while this figure is almost 10% in Europe and the US. But that percentage is levelling off in Western countries, while the growth potential in China is enormous.<sup>2</sup> This is not a direct threat to the Dutch economy, as long as the Netherlands can maintain and strengthen its advantages with respect to these countries. Our strength lies in the high level of Dutch labour productivity. Recent research has shown that in the Netherlands, extra knowledge at the highest level is required in order to extend productivity limits even further.

It is striking that our labour productivity growth is lagging behind countries such as the US and Germany. This slower growth is related to a lack of innovation in important industrial activities and the public sector. The link between education and knowledge institutions, businesses and civil organisations must therefore be reinforced. In addition, the number of start-up companies in the Netherlands is too low. In the progression towards a more knowledge-driven economy, start-ups and enterprising employees, in particular, have a positive influence on economic growth and innovative power.

### **An international playing field**

The international context determines our playing field and will continue to do so even more in the future. This is evident from various facts. Firstly, students are becoming more mobile internationally. At present, approximately two million students worldwide are studying abroad. This figure is expected to be six million in 2020.<sup>3</sup> Three countries attract half of those two million students: the United States, the United Kingdom and Australia. Moreover, the US attracts a great many scientists and students studying for doctorates from all corners of the globe and American universities dominate the world rankings. The mobility of students, tutors and researchers – or brain drain and brain gain – has been the subject of much discussion, particularly as the knowledge economy has now become a leading model for economic growth in OECD countries and in emerging economies.<sup>4</sup>

Secondly, within the European Union, the Netherlands and the group of countries taking part in the Bologna process<sup>fi</sup> are striving for a European Higher Education Area (EHEA). This process involves topics such as quality, excellence, life-long learning and internationalisation. By means of intensive cooperation, Europe wishes to characterise itself as an attractive place for international students. In this way, Europe can compete with Asia, America or Australia. But in addition to cooperation, there is increasing competition in Europe to attract both these students and the financial resources that are required.

Thirdly, the labour market and society are rapidly becoming more international. Many Dutch businesses, including those long associated with the Netherlands, are being acquired by foreign investors. As a result, employees are suddenly entering the service of American, Swiss or Indian employers. Conversely, Dutch companies are acquiring foreign businesses. Higher education must therefore prepare Dutch students for the international labour market. After all, the labour market requires people who have a more international outlook and who can adjust to cultural diversity.

Fortunately, higher education and science have a solid international basis for dealing with these changes. This is evident, for instance, from the sixth report of the Netherlands Observatory of Science and Technology: “Science and Technology Indicators 200fi”.<sup>6</sup> As regards research, most Dutch universities are listed in the rankings of the leading 200 universities worldwide, and one university is listed in the top fi0.<sup>7</sup> Our educational institutions succeed in attracting many foreign students. The percentage of foreign students in the period 200fi/2006 amounts to 8.6%, which is above the OECD average.<sup>8</sup> Those students are offered a wide range of courses given entirely or in part in English,<sup>9</sup> a total of almost 1,200 courses. Apart from Finland, the Netherlands is the non-English-speaking country offering most courses in the English language. Opportunities for the international mobility of students have been further increased by, for instance, the introduction of portable student grants.

The approach to internationalisation, which is related to this strategic agenda, focuses largely on positioning both institutions and students on the international education and labour market. Students must have the opportunity to prepare themselves thoroughly for an international career. Institutions must have space for projecting an identity and establishing partnerships across national borders. In line with this strategic agenda, I will be issuing an internationalisation agenda for higher education in the spring of 2008.

### **A well-educated working population**

The basis of a sound knowledge society is a well-educated working population. If we wish to ensure prosperity and well-being for the future, as many people as possible must be able to perform work at a high knowledge level. However, the Netherlands lacks well-trained personnel. The percentage of people with a higher level of education is increasing in the Netherlands, but in order to meet the demands of the labour market, more students will have to participate in higher professional [HBO] and university [WO] education. Fortunately, the percentage of pupils gaining a senior general secondary education [HAVO], pre-university education [VWO] or senior secondary vocational education level 4 [MBO-4] diploma is still increasing. A large proportion of these pupils proceed to higher education. However, there are concerns about the quality of the intake, particularly as regards the command of the Dutch language and arithmetic and maths skills. There is also concern (expressed, for instance, by the OECD) regarding the opportunities for progression within the education system for pupils from vulnerable groups from a socio-economic point of view. In addition to satisfactory progression within the education system, reducing the drop-out rate in higher education will increase the percentage of people with a higher level of education.

### **Average is not enough**

Prosperity and well-being are becoming increasingly dependent on the production of knowledge and new, innovative insights. For this reason, Dutch scientific research must be able to compete with the best in the world. It is therefore necessary to strengthen the global position of Dutch universities and autonomous institutes with a university affiliation. The starting position for achieving this is good, partly due to a satisfactory quality care system that results in a high average quality. But a high average level is not enough; innovation demands the very best. After all, you can be the first to make a discovery only once. Innovative researchers, working individually or in groups, are responsible for huge breakthroughs and for setting the worldwide research agenda. Research groups including leading researchers act as magnets for young talent, hotspots for the creation of new economic activities and the growth of existing businesses. But they also act as centres for an innovative approach to social problems.

In the first place, the current challenges in higher education require an ambitious learning culture, in the sense of motivation, effort, attitude and challenge. At the same time, the demand for more highly educated people means that participation, yield and the number of diplomas awarded will have to increase. This presents a dilemma with regard to quality and quantity: can increasing participation in higher education go hand in hand with improving the learning culture and quality? Up to now, universities and colleges of higher professional education have succeeded in combining increasing participation with an educational quality that is fundamentally sound. In view of the diversity of the student population, particularly in higher professional education, it may be concluded that this is a considerable achievement on the part of higher education. However, if we take the tasks of the knowledge society seriously as well as the responsible role that graduates will have to play in that

respect, far more time and effort will have to be devoted to an ambitious learning culture. The fact that such a culture is still lacking is evident from the following data.

- ⋮ Many students feel that they are not being challenged (37% in university education and more than 50% in higher professional education), they are critical of the quality of education and desire a higher service level.<sup>10</sup>
- ⋮ Compared to other EU countries, the commitment of Dutch students leaves a great deal to be desired. Too few students seem willing to make a real effort.
- ⋮ Research has shown that we can get more out of our best students.
- ⋮ The student drop-out percentage is excessive: 30–40% have no final diploma after seven years.
- ⋮ The success (in the sense of yield) of immigrant students is considerably lower (almost 20%) than that of native students.
- ⋮ The professional culture among tutors in higher professional education needs improvement: assessment reports contain many comments relating to a lack of depth and theoretical knowledge in educational courses.
- ⋮ In general, universities give priority to excellence in research performance. This is often at the expense of their bachelor courses.

These problems occur particularly in the case of bachelor courses. Quality will have to be improved substantially in this respect. We must dispense with a culture in which six out of ten is good enough. This will require efforts on the part of students, but it will also require education presenting a challenge.

Universities and colleges of higher professional education have responded to this trend and are enthusiastically working to improve performance, quality of education and differentiation. This was confirmed by the Accreditation Organisation of the Netherlands and Flanders (NVAO) in its 2006 annual report. Institutions have focused greater attention on contacts and assessment quality. This also applies to supervision and the transfer of knowledge by the tutor. There is also a greater focus on diversity, as regards both courses and students. A growing number of institutions are aware of the difference in talents of students and are prepared to take account of this fact in education. The creation of talent clusters, master classes and honours programmes is also evidence of increased attention for the quality of staff. We must encourage this trend.

### Shared enthusiasm

I notice an eagerness to improve education among all those involved in higher education and science. For instance, the higher education sector has drawn up its own agenda to improve the learning culture and the quality of personnel in education. The Association of Universities in the Netherlands (VSNU) wishes to increase student performance and launched a series of meetings for universities in which good practices concerning the improvement of student performance can be exchanged. The Higher Professional Education Council (HBO-raad) is working with the trade unions on a collective agreement geared to investing in the professionalism of higher professional education tutors. And as has already been pointed out, students have indicated that they desire greater quality of education and a higher service level.

We must harness this shared enthusiasm in order to take decisive action. In consultation with universities, colleges of higher professional education and students, we have drawn up this strategic agenda to tackle the problems posed in the coming years both jointly and effectively. However, institutions must have scope to take their own decisions regarding their social task. Our universities and colleges of higher professional education are among the best and most dynamic in Europe and this is partly because they are autonomous institutions with effective management. Success will depend on their efforts and their ability to establish priorities. We must exploit this advantage. At the same time, our considerable ambitions require clear agreements between the Government and the education sector regarding the yields of higher education and the Government will have to provide targeted incentives in a number of areas.



## 2 Where we are intending to go

### 2.1 An ambitious learning culture

The central *challenge* in our higher education system is *to create an ambitious learning culture*. Important considerations in this respect are:

⌘ *Intensity of education*

The quality agendas of university and higher professional education are intended to encourage more enthusiasm among students, to challenge them and to increase the bond between them and their educational surroundings, so as to improve their performance. Small-scale educational surroundings and intensive study supervision (as evident from the number of contact hours and the staff/student ratio) are prerequisites in this respect. Conversely, institutions must make clear agreements with students concerning effort and progress. In this way, students become more motivated and less likely to drop out. Students will have better possibilities to make more effective choices regarding their studies and to be critical of the quality of education.

⌘ *The lecturer in the lightspot*

It goes without saying that it is not just the *number* of contact hours that are important, but rather the *quality* of those hours. An inspiring and inspired tutor makes a great deal of difference in this case. In the first place, this requires good tutor training courses and more interest in the profession of tutor. In line with the advice of the Rinnooy Kan committee, more higher professional education tutors should have followed a master course, including a greater number of tutors with doctorates. University tutors should be greatly appreciated and well-trained for the subjects they teach and not just for their research. Action must be taken in cases where bureaucracy inhibits the primary process of education and research.

⌘ *Differentiation*

Many students wish for a greater challenge. In addition to the percentages already referred to, 25–30% of students desire excellent education. More differentiation is therefore required between and within courses: demanding for excellent students, inspiring for good students and providing structure for those students who are now dropping out. In addition to excellence in education and research, a broad quality basis is required.

⌘ *International mobility*

The international mobility of students and tutors contributes not only to an international learning environment, but also to an excellent learning culture. The presence of foreign students often has a positive effect on the learning behaviour of Dutch students. Portable student grants and Huygens Scholarships are instruments in this respect.

## STRATEGIC AGENDA

- ⌘ *Good links within the education system*

An excellent learning culture must not be restricted to higher education. In secondary and vocational education too, pupils should be given more encouragement to perform to best effect. Pupils progressing from senior secondary vocational education and secondary education must be well prepared to continue their studies in higher education. After all, the quality of higher education partly depends on the quality of the intake.
- ⌘ *More people trained to a higher level*

More people should be trained to a higher level. In addition to a reduction of the drop-out rate, this increase will have to be achieved by a greater progression of pupils from senior secondary vocational education and by upgrading the working population. The colleges of higher professional education in particular can make a substantial contribution in this respect. Even more than universities, they are faced by the challenge of attracting more students and supervising their progress towards a diploma, without concessions being made to the level and quality of education. For this purpose, government policy must provide support.
- ⌘ *Bridges between knowledge and practice*

Links between educational courses and employers must be strengthened. Excellent cooperation between courses and employers can improve education and make it more enjoyable. In addition, this cooperation facilitates the application of high-quality knowledge and increases the innovative capacity of the various professional sectors. People with a higher level of education must build bridges between knowledge and practice. It is therefore necessary to strengthen the enterprise and research capacity of students.

### 2.2 An excellent research climate

Science has to extend boundaries, as a basis for innovation, for a competitive economy, prosperity and well-being and as an important item of cultural significance. For this reason, Dutch scientific research must be able to compete with the best in the world. An excellent research climate is understood to be:

- ⌘ *An ambitious climate*

The great breakthroughs in science are made by innovative researchers. The research groups in which they work act as magnets for young talent, hotspots for the creation of economic activities and new approaches to social problems. We should be at the forefront of interesting developments, with the broadest impact on specific applications. In addition, we should continue to excel in areas where we have a reputation to uphold.
- ⌘ *Self-management within scientific disciplines*

In order to extend boundaries, I wish to strengthen the leading role of independent and pure scientific research. I will therefore provide targeted incentives for university research. But I particularly wish a talented researcher to have a more central role. I will achieve this

## STRATEGIC AGENDA

by strengthening research funds provided by institutions, which are relatively limited in the Netherlands, and, even more than is the case at present, by distributing resources in competition.

In order to perform scientific studies at a high level, choices will have to be made. Those choices will not be determined in the first instance by Government policy, but by scientific developments. To some extent, science determines its own direction by means of the choices made by researchers. Researchers focus on the most favourable research and are aware of where their best colleagues are working and where in their particular field an excellent research climate exists. They ensure that centres of excellent and ground-breaking research occur of their own accord.

### ⋮ *Focus on talent and development*

Universities and research institutes contribute to the creation of those centres of excellence by attracting scientific talent and offering facilities for the best research. The basis for such lies in research funds provided by the government, which facilitate long-term choices due to their secure nature. This approach may be encouraged even further by a stricter selection of researchers at a national level. In this context, leading researchers – in accordance with the American model – are allowed to opt for the places with the most stimulating research climate. This approach also encourages powerful choice and selection processes within the institutes. All this is in line with the decision of the cabinet to strengthen the leading role of independent and pure scientific research by distributing funds to the best researchers.

### ⋮ *Emphasis on scientific disciplines*

The management mechanism of the researchers themselves works only within scientific disciplines. Other mechanisms are required for the choice between scientific disciplines. We must establish priorities in the financing in order to bring research into line with social and economic needs, also in an international context. These choices must be in line with short and long-term agendas of government authorities, businesses and civil organisations. This is not easy in a strongly decentralised research system. For this reason, a number of mechanisms have been developed that will be detailed and strengthened in the coming period. These mechanisms will be discussed in the explanatory section.

### ⋮ *Research with a practical focus*

Relationships between knowledge institutes and professional practice must be intensified. This will facilitate a greater exchange of knowledge and specific cooperation in the development of new insights and products. Colleges of higher professional education and lecturers play an important role in this process. They perform research with a practical focus and cooperate closely in the region with small and medium-sized enterprises and with public sector institutions. I wish to strengthen this practical research of colleges of higher professional education.

## 3 Handling the organisation

### 3.1 How do we achieve an excellent learning culture?

Many of those involved in higher education and science are enthusiastic about improving education. The cabinet is using this strategic agenda to support initiatives intended to increase quality and academic success. We wish to create an excellent learning culture by making extra investments in academic success, quality and excellence and by introducing new systems of funding and assessment. The intended approach is as follows:

- 1 **extra investments on the basis of long-term agreements concerning academic success (drop-out reduction) in the bachelor phase, greater quality and excellence;**
- 2 **extra quality incentives in the system;**
- 3 **a transparent management philosophy.**

#### Extra investments

I wish to make extra investments in:

- ⋮ *Greater academic success for students.* My aim is to greatly reduce the student drop-out rate in the bachelor phase: a 10% reduction in 2014. This aim is not related to students who switch to another course, but to those who drop out of higher education and do not return. An interim assessment will be made in 2011, when the drop-out reduction must be 30%. The success rates of immigrant students must also be improved.
- ⋮ *Greater quality and excellence.* The basic quality must be maintained, but I wish to challenge universities and colleges of higher professional education to provide more than that basic quality. In addition, more students should study more than just the basic programme. Differentiation in education and intensive supervision are very important in this respect. An important consideration in the case of quality improvement is the training level of tutors. In line with the policy response to the advisory report of the Rinnooy Kan committee, I am taking as a basis target values for the number of higher professional education tutors with at least a masters level (90%, of which 10% should have doctorates).
- ⋮ *The link between education, research and the labour market.* Proper interaction between courses, research and employers improves the quality of education and professional practice. This interaction can be improved, but it will mean that colleges of higher professional education must acquaint their students with design and development, as well as with types of applied research. Consequently, the research activities of colleges of higher professional education must be given form and content in close association with regular educational practice. In addition, it will remain important to ease the transition from learning to working and to encourage life-long learning.

## STRATEGIC AGENDA

I wish to do this as follows:

- ⌘ The Association of Universities in the Netherlands, the Higher Professional Education Council and the cabinet conclude long-term agreements about increasing academic success and quality in the bachelor phase. The ambitions in this agenda are targets. The precise targets are still being discussed with the umbrella organisations. When making long-term agreements about reducing drop-out rates, account will have to be taken of the selection and referral function of the foundation course, given the extraordinary varied intake in higher education, particularly in higher professional education, and of the various positions of universities and colleges of higher professional education.
- ⌘ Indicators are included in the explanation to this agenda. These are reviewed annually. Taken as a whole, they present a satisfactory picture of how the quality of education and academic performance are developing. Intensity of education, quality of tutors and performance of immigrant students are given special attention in this respect. I am making extra resources available that colleges of higher professional education and universities will have to use in line with these objectives. This will be in addition to the existing government grant and the resources already made available last year: € 11 million in 2008, rising to € 7 million from 2011. These funds will be added to the institutions' government grant. If the indicators show that the development of the ambitions lags behind the possibilities, the cabinet will act. For instance, the addition of extra funds to the government grant may be halted.
- ⌘ On top of the above amounts, extra funds will be available for the academic success of immigrant students: € 4 million in 2008, rising to € 20 million per year from 2011. I will conclude agreements with each institution that receives these resources (in the first instance the multi-sectoral colleges of higher professional education in the four large cities – Amsterdam, Rotterdam, The Hague and Utrecht).
- ⌘ There will be extra funds for excellent students and excellent education. The budget for Huygens Scholarship Programmes (for talented students in the Netherlands and elsewhere) will be increased to € 10 million per year. In addition, selective extra funds will be used from 2008 to achieve greater excellence in higher education and to investigate what obstacles will have to be removed to achieve that goal. A total of € 10 million will be available for this purpose up to and including 2011.
- ⌘ I will provide more finance for the design and development function of colleges of higher professional education (practice-based investigation) in phases (see further page 17).
- ⌘ I wish to finance new higher professional education master courses on a temporary basis, provided that they meet the criteria stated in the explanation. For this purpose, € 10 million has been made available in 2008, rising to € 20 million from 2011.
- ⌘ In this term of office, too, life-long learning will be actively encouraged. The Learning and Working [*Leren & Werken*] project will be extended to 2011. This year, a new plan of approach for the project will be issued for the next three years. A central place will in any event be given to encouraging learning and working in the care and technology sectors, where there is a risk of long-term staff shortages.
- ⌘ Entrepreneurship in education is being encouraged via Centres of Entrepreneurship. However, this will require investments in primary and secondary education, so that young pupils learn the basics of entrepreneurship. In the period 2008-2011, € 30 million will be available for this purpose.

### Extra quality incentives

Various advisory reports and investigations have revealed that quality incentives in higher education need to be improved. In addition to investments and agreements relating to results, there is therefore reason to introduce more incentives into the system that focus on improving the quality of education:

- ⌘ *New system of financing higher education/educational supplement.* In consultation with educational institutions and students, the cabinet is proposing a new, overall system for financing higher education. This initiative focuses on encouraging the participation of students, as well as quality and diversity in the courses on offer. The funding is based on the number of students registered per year for recognised bachelor and master courses, the number of bachelor and master degrees awarded to students and an institution-specific educational financial supplement [*onderwijsopslag*]. The government funding will be reduced to one bachelor and one master course. The size of the institution-specific educational supplement will partly depend on extra quality and other exceptional performances of institutions, whether or not by means of extra investments. In the coming period, we will hold extensive consultations with the relevant parties concerning these proposals.
- ⌘ *Renewal of assessment.* Optimal quality demands strict quality monitoring. The Accreditation Organisation of the Netherlands and Flanders assesses the basic quality of existing courses in higher education. However, the professionals in the institutions have been dissatisfied for some time about the bureaucratic level of the assessment, and at the same time, the social disquiet regarding the quality of education was not always evident in the assessment reports. For this reason, new starting points are formulated in this agenda for arranging the next assessment round (from 2009), and for more effective supervision that simultaneously creates space for learning capacity and reduces the administrative burdens. A central aspect in this respect is the institution audit (used, for instance in the UK), which institutions may have performed. As a result, the course professional can be called to account particularly regarding the quality details of the course and be less burdened with questions concerning underlying matters such as the quality care system. A bureaucracy meter at institution level may provide an understanding of the relationship between primary and secondary tasks. In structuring the second assessment round, the European Standards and Guidelines are normative. In addition, in the context of transparency and on the basis of regulations relating to open government, the results of both the institution audit and the course assessments will have to be made public, so that interested parties (students, employers) can gain an understanding of the quality of higher education. Finally, it is vital that the visiting panels act independently. For this reason, the Accreditation Organisation of the Netherlands and Flanders will draw up strict guidelines with which a panel must comply and during the assessment, the independence and expertise of the panel will be important considerations. In detailing the adjustment of the assessment system, both the transparency and the comparability, as well as the independence of the panels are elements that deserve extra attention. These aspects will be expressly assessed in the case of the planned pilots.
- ⌘ *Margin thanks to experiments and encouragement subsidies.* The previous cabinet started experiments relating to the selection of students, tuition fee differentiation and an open system. This agenda cannot anticipate the conclusions of that evaluation. Nevertheless, I can already deduce from the experiences gained from the experiments concerning selection and tuition fee differentiation that the institutions are making good use of the margin to experiment and are learning a great deal from such experiments.

The support of university talent clusters and honours programmes has resulted in new concepts and has yielded a great many learning effects for differentiation in education. This margin is therefore an incentive to develop and innovate, and for this reason I will create scope in the years ahead for experiments and incentives for increasing quality and excellence.

### A transparent management philosophy

Finally, I wish to get to grips with higher education on the basis of *a transparent management philosophy*. In the coming years, the independence of institutions will remain the starting point in this respect. At the same time, our great ambitions require intensive involvement from the Government. On the basis of that involvement, I wish to focus the efforts of the Government on:

- ⋮ *Agreements concerning yields.* The Government wishes to have a clearer picture of the performance of institutions and wishes to make specific agreements in this respect.
- ⋮ *Active participation of interested parties.* The independence of institutions means that the presence of active and assertive students, tutors and employers is all the more important. The plans in this agenda increase participation by students. The extra investments facilitate a better position for tutors. That also applies to the contribution of professional parties, which can be strengthened as a result of extra investments in, for instance, practice-based research.
- ⋮ *Proportional supervision.* External supervision is necessary, but it must be well-balanced. There must therefore be less supervision where possible ('earned trust') and more supervision where it is needed. This starting point also applies to the renewal of the assessment system. The roles of the various supervisors will be more clearly defined.

### 3.2 How do we achieve an excellent research climate?

We wish to achieve an excellent research climate by means of the following measures:

- 1 strengthening the leading role of independent and pure scientific research**
- 2 a greater focus on national research priorities**
- 3 solid social embedding of scientific research**
- 4 independence and proper quality assessment**

#### The leading role of independent and pure scientific research

I wish to strengthen the leading role of *independent and pure scientific research*.

- ⋮ We will do so by increasing research funds provided by institutions and by distributing resources on the basis of competition, with excellence as the criterion. In this respect, the cabinet has chosen not to impose plans. The researchers know best where opportunities are likely to arise. Young people must be able to determine their own research plans early in their scientific career. The renewal incentive will be extended considerably. For this purpose, resources released by the cancellation of

## STRATEGIC AGENDA

- the performance-related small energisation [*kleine dynamisering*] (€ 100 million) measure will be used, as will the part of the smart mix subsidy programme provided by the Ministry of Education, Culture and Science, which is also being discontinued (€ 10 million). In order to increase the options for young people even further, the one-third contribution of the institutions will be cancelled. Agreements have been made with the universities regarding the phasing of these plans. The extensive renewal incentive will – in consultation with the Netherlands Organisation for Scientific Research [NWO] – be adjusted from 2009 on the basis of evaluation carried out at that time.
- ⋮ We wish to bring the training of researchers more into line with the American model. In other words: a fixed time of entry, a strong focus on training and an orientation within the research school, followed by the choice of a doctorate subject. For this reason, we are working together with the institutions on an approach in which the Netherlands Organisation for Scientific Research allocates training grants on the basis of open competition. In order to expand the possibilities of students studying for doctorates, a sum of € 1 million will be available in 2008, rising to € 1.5 million from 2011.
  - ⋮ We will ensure that the emphases in research policy are closely in line with European developments. National and European research policies may strengthen one another, e.g. in the case of encouraging the mobility of researchers and in career policy. The creation of the European Research Council means that European research funds too will be distributed more in competition and with a greater personal focus. With the exception of the China and Indonesian programmes, the bilateral cooperation programmes will be phased out.
  - ⋮ The European target figure for female professors is 25 percent, while the Netherlands has adopted a target of 15 percent. Opportunities for women are increasing, but progress is still too slow. In order to encourage progression to leading positions, including that of professor, a sum of € 1 million (rising to € 2 million from 2011) will be added to the Aspasia programme.
  - ⋮ The Mozaïek programme focusing on immigrant research talent will be evaluated in 2008. In the event of a positive evaluation, the programme will be continued. The Netherlands Organisation for Scientific Research and the Ministry of Education, Culture and Science will both contribute € 2 million for this purpose.
  - ⋮ A national roadmap committee is involved in mapping out priorities for large research facilities at universities and institutes with a university affiliation, as a supplement to the European Strategy Forum on Research Infrastructures (ESFRI) roadmap. As a first initiative, € 10 million is being added for this purpose to the budget of the Netherlands Organisation for Scientific Research, rising to € 20 million in 2011. The Netherlands Organisation for Scientific Research selects and assesses the proposals on the basis of quality.
  - ⋮ We wish to use targeted incentives to help solve a number of problems and plug a number of gaps in the arts and social sciences.
  - ⋮ A *humanities committee* will be asked to develop a plan. This plan will put forward proposals to create greater stability in the research relating to these disciplines and to ensure that important parts of the research are secured. Moreover, the plan will help to deal with the question of which courses deserve government protection.
  - ⋮ I will produce a separate policy document concerning the provision of scientific information. In this document, I will deal with subjects such as open access, accessibility of databases and the long-term retention of paper and digital scientific information.



### National research priorities

Choices relating to research priorities are left as far as possible to those involved. But sometimes the Government cannot avoid setting priorities, such as the designation of the genomics, ICT and nanotechnologies as *national research priorities*. These are in line with economic developments and social problems. In addition to these national research priorities, scientific and social developments may occur during the Government's term of office that necessitate extra attention and resources. Apart from social topics, these developments may include subjects such as biodiversity.

- ⋮ An amount of € 24fi million has been made available from the Economic Structure Enhancing Fund (FES) for a second period of the genomics programme. This is required, among other reasons, to achieve the best possible economic and social return. Together with resources already made available, the subsidy for the Netherlands Genomics Initiative amounts to € 271 million.
- ⋮ A mid-term review (2007) and a final evaluation that has been brought forward (2008) must provide an answer to the continuity question and to the organisation and organisational structure of ICTRegie (an organisation set up by the Dutch government to stimulate innovation by means of ICT research). The evaluation will also deal with the relationship between ICTRegie and the Netherlands Institute for Research on ICT, in which the three technical universities have formed centres of competence and centres of excellence. Work is also being carried out on a proposal to integrate ICT facilities for the world of research (supercomputers, grids, Surfnet, etc.). Extra resources may also be needed for these developments during the Government's term of office.
- ⋮ The cabinet's outlook on *nanotechnologies* (2006) will be detailed in an action plan. The 7th Framework Programme of the European Union involves a great deal of nanotechnology and work is being carried out in an OECD context on the risks of nanotechnologies and on outreach and communication.

### Social embedding of research

In order to preserve social support for science and in order to encourage young people to opt for a career in science, *research must be firmly embedded in society*. Active communication regarding science will ensure that the public shows an interest in this topic. In addition, knowledge should be used more effectively by businesses and civil-society organisations, and researchers should be able to share in the profits of their intellectual property rights. In meetings with the boards of universities and research institutes, I will continue to ask parties to focus on communication and dialogue about science, and particularly with regard to young people.

- ⋮ I will maintain the continuity subsidy for the National Centre for Science and Technology, which manages the Nemo science centre and also subsidises a number of smaller regional science centres. The same also applies to subsidy for specific purposes such as Science and Technology Week.
- ⋮ The programmes relating to communication about science and technology in primary and secondary education, such as *Talentenkracht*, will be continued.
- ⋮ In 2010, demand-driven education [*vraagsturing*] must have been fully introduced at TNO and the large technological institutes (LTIs). In line with this development, and also in the light of the reorga-

## STRATEGIC AGENDA

- nisation at TNO, I will investigate in consultation with TNO whether the quality of applied research at TNO is satisfactory and whether further steps are necessary in order to achieve excellence.
- ⋮ Further work will be carried out in the coming years regarding the federation of the three technical universities. In the course of 2007, the federation developed an outlook on its role and function in 2010, as a basis for the coming long-term plans.
  - ⋮ In the past years, the NWO/STW Technology Foundation – in addition to a generic and facilitating policy – has developed a more programmatic policy focused on practical applications and spin-offs. This policy is also directed towards the key areas of innovation policy. As a result, NWO/STW resources are being used more programmatically. This policy will be continued.
  - ⋮ The cabinet considers it important to increase the innovative power of small and medium-sized enterprises. Practice-based research activities in areas such as design and development at higher professional education institutes can play an important role in this respect. For this reason, the cabinet wishes to strengthen these activities even more. A quality care system for practice-based research will be developed and we will designate indicators that make clear the influence of this research on education and innovation. From 2010, I will increase the budget for practice-based research in higher professional education by € 12.5 million and from 2012 by € 20 million per year. I will tailor the use of extra resources to the results of evaluation and monitoring.
  - ⋮ More unequivocal rules must be introduced for the extent to which researchers can profit from the yields of intellectual property. I wish to investigate whether it is desirable and possible to adjust current legislation for higher education and research regarding this point.
  - ⋮ Apart from innovation in businesses, the new innovation platform will focus on innovation in social sectors, within government and in entrepreneurship. I will request the innovation platform to ensure that the themes (energy, water, care and education) are properly related to the themes for the demand-driven education at TNO and the LTIs.
  - ⋮ With the aid of the new Knowledge and Innovation programme department, this cabinet is working on an overall, inter-departmental strategy to strengthen the relationship between knowledge (education and research), innovation and entrepreneurship.

### Independence and proper quality assessment

- At administrative level, an excellent research climate particularly requires *independence, transparent accountability and a satisfactory quality assessment*. Independence is a condition for universities (including institutes with a university affiliation) and the research institutes of the Netherlands Organisation for Scientific Research and the Royal Netherlands Academy of Arts and Sciences in order to be able to perform pioneering and pure scientific research. The cabinet has opted to leave the details to the institutions in question. However, these institutions must account for their actions in a transparent manner and ensure that the quality of the research is clearly visible.
- ⋮ In line with the report of the energisation committee [*commissie dynamisering*], we will reach agreements with the Association of Universities in the Netherlands and the universities about giving a transparent account. The cabinet wishes to be able to gain a proper picture of the quality, efficiency and the effectiveness of the result evaluations put in place by the universities. The cabinet

## STRATEGIC AGENDA

also wishes to discover how the universities handle evaluations. Those evaluations cannot be used to make a comparison per discipline. However, I am currently consulting with the Association of Universities in the Netherlands, the Netherlands Organisation for Scientific Research and the Royal Netherlands Academy of Arts and Sciences regarding the possibilities for deriving information from the evaluations.

- ⋮ Consultations will be held with the Association of Universities in the Netherlands, the Netherlands Organisation for Scientific Research and the Royal Netherlands Academy of Arts and Sciences regarding the possibilities of deriving a national picture per discipline from the result evaluations.
- ⋮ The evaluations of the Netherlands Organisation for Scientific Research and the Royal Netherlands Academy of Arts and Sciences will yield a summarised evaluatory advice in late 2007/early 2008 concerning the role of the organisations referred to above in the scientific system.

### 3.3 Supplementary resources

The increase in supplementary resources for higher education, research and science will be earmarked from 2009 as a provisional amount on the supplementary item of the State. Each year, decisions will be taken in the form of a policy document or spring memorandum concerning the distribution per tranche of these resources.

## Endnotes

- <sup>1</sup> This is evident from, for instance, the citation impact of our investigation, which is 26% above the world average.
- <sup>2</sup> In his speech '*Higher Education's Perfect Storm*' during the UNU/UNESCO conference Tokyo (29 August 2007), Maastricht University President Jo Ritzen predicted dramatic shifts in higher education worldwide as a consequence of demographic developments. In developed countries, the number of young people is not increasing, while the proportion of young people from minority groups is growing all the time. As a result, participation in higher education will decrease, while the demand from the labour market for people with a higher level of education is continuing to increase. On the other hand, the number of young people aged between 18 and 24 in developing countries is growing. In the future, international student mobility will not automatically be one-way traffic from rich to poor countries. Jo Ritzen warned of a shift of the knowledge-intensive sector to developing countries, which are in the process of catching up. According to Mr Ritzen, measures are needed in order to combat this 'Perfect Storm': an increase in participation in higher education, control of international student migration ('brain circulation' instead of 'brain drain') and innovation on the basis of Government policy that will allow universities to introduce drastic reforms.
- <sup>3</sup> Lambert & Butler, *The future of European universities, renaissance or decay*, June 2006.
- <sup>4</sup> As quoted from the article by Marijk van der Wende, *Globalisering en het hoger onderwijs*: in ESB file, *Globaliseren in Nederland*, July 2007.
- <sup>fi</sup> The Bologna Declaration of June 1999 is an agreement between 46 European countries to reform their higher education systems. The aim is to achieve a common and open European higher education system with comparable degrees and recognised diplomas. The following objectives are included in the Declaration:
  - ⋮ Adoption of a system based on two main cycles, undergraduate and graduate
  - ⋮ Establishment of a system of credits – such as in the European Credit Transfer System (ECTS), as a proper means of promoting the most widespread student mobility.
  - ⋮ Promotion of mobility by overcoming obstacles to the effective exercise of free movement for students, teachers, researchers and administrative staff.
  - ⋮ Adoption of a system of easily readable and comparable degrees, also through the implementation of the Diploma Supplement.
  - ⋮ Promotion of European cooperation in quality assurance with a view to developing comparable criteria and methodologies.
- <sup>6</sup> Parliamentary document 29338 no. 4fi.
- <sup>7</sup> Shanghai Jiao Tong University, *Academic Ranking of World Universities (Shanghai Jao Tong ranking)*, 2006
- <sup>8</sup> Nuffic (The Netherlands Organisation for Cooperation in Higher Education), *Internationale mobiliteit in het onderwijs in Nederland 2005*, 2006.
- <sup>9</sup> Ditto note fi and Maiworm-Wachter, 2002, *English Language Taught Degree Programmes in European Higher Education*, Bonn.
- <sup>10</sup> See also the letter from the Ministry of Education, Culture and Science to the Lower House of the Dutch Parliament of 31 May 2007, further to complaints from student organisations.

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