Funding conditions for research and transparency, some experiences in the Netherlands

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External funding is an important topic in the Netherlands. In the financial field, some experience has been gained in the sphere of regulations, accounting and quality control. Measures are inspired by the desire to simplify financial transactions and to reduce red tape. In this paper some insight is given in the prevailing funding techniques in the Netherlands: how government funds are allocated to universities, and what rules govern the funding process. The importance of an efficient control mechanism is also discussed, giving attention to the measures implemented to guarantee the quality of the funded (research) output. The paper concludes with some recommendations, so that the Dutch experience might be used by other countries as an example of good practice.

1 Funding universities in the Netherlands

The higher education system in the Netherlands is based on a three-cycle degree system, consisting of a bachelor, master and doctoral degree. The three-cycle system was officially introduced in the Netherlands in 2002-2003. In addition, the Netherlands have a binary system of higher education, which means that there are two types of providers: universities traditionally deliver research-oriented education, while professional higher education is offered by universities of applied sciences or institutions for higher vocational education.

The Netherlands count 13 research-universities (RU) and forty universities of applied sciences (UAS), which together educate well over 600,000 students, to the ratio of one-third for research universities and two-thirds for universities of applied sciences. Together, they constitute the Higher Education Institutes (HEI). Yearly they deliver some 90,000 diplomas, half of these awarded by UAS (mainly at bachelor level) and the other half awarded by research-universities (Bachelor and Master level). On the research end, they produce 2,8 per cent of publication output in the world (108.000) and 3200 Doctorates. The quality of this output is expressed in a high citation-impact: In the Netherlands the impact is 1,33, which means 33 per cent above world-average.[1]

[1] Science and technology indicators 2010, Netherlands observatory of science and technology NOWT.

Funding modalities for universities in the Netherlands are characterised by an increasing diversity of funding sources, which requires more control on the expenses and therefore demands much from the administrative organisation of government and university administration. At the same time, universities and research institutions must be accountable to funders and society at large by demonstrating quality and showing how they have used the funding (both public and private). In this regard, full costing is one of the key pillars of accountability because it is an instrument which also shows funders how their funding has been spent.

The Dutch higher education institutions are largely publicly funded. This can be illustrated by the following public income streams:

- First income stream: substantial (direct) government contribution, which makes up 60 per cent of all HEI money (RU: 3,2 billion Euro and UAS: 2,3 billion Euro).
- Second income stream: government money which is distributed by some (public) science organisations such as the Netherlands Organisation for Scientific Research NWO and Royal Netherlands Academy of Arts and Sciences KNAW for projects on the basis of competition. Only research-universities are eligible for this flow of funds. These funds have stabilised in the last few years (0,37 billion Euro).
- The third income stream, which also increased in the last few years, can be identified as project-money for which universities compete with other types of entities such as companies. This includes project-based funding from the European Union and from the national authorities (0,98 billion Euro);
- The fourth income stream are tuition- and examination-fees (0,4 billion Euro).

One should note that the first income stream is comparable for both types of universities (60 per cent). However, the role of second/third income streams and income by student tuition is different: UAS are dependent on a relatively large part of tuition-money (18 per cent and a relatively small part from the third income stream – they are not eligible for the second income stream made of competitive research funds), while for the research universities the opposite can be stated.

The system of (public) funding of HEI can be summarised as a system of redistributing government money. The amount of the total available public funding is adjusted by the ministry of finance on the basis of reference estimates about the number of expected new students (increase/decrease of future student numbers). These funds are then divided into two fixed budgets for UAS and RU. The RU budget is furthermore divided into an education and research compartment.

The UAS receive the lump sum in one whole. The money is as a matter of principle intended for education. Furthermore, UAS receive funds for applied research activities.

This is in particular used for lecturers or teachers who give professional lessons, in which they link academic theory with business-knowledge they acquire from experiences in the business community. These lecturers have a kind of bridge-function between academia and business.

The research universities receive an amount comparable to the UAS education money, and are also granted funds that are formally labeled for research. However, since the universities are autonomous, it can be used for all activities stipulated in the Higher Education and Research Act: education, research and knowledge dissemination. Some research universities also get specific funds for special academic purposes such as academic hospitals (0,5 billion Euro).

The lump sum money is divided over the institutions on the basis of a number of allocation keys, which include a number of performance figures. The largest of these are based on education figures such as the number of students and degrees. It is completed with a fixed 'education-part', which is distributed to the universities on the basis of fixed percentages.

Like the education part, the research part is also divided between the universities on the basis of indicators: number of awarded first Master diplomas, number of awarded Doctorates, a fixed amount of money for research and also some money for doctoral schools.

2 Autonomous universities and the need for transparency

Universities in the Netherlands have a high degree of autonomy in many areas. The ability to act as independent financial entities is one of the key drivers for universities and research institutions towards achieving their strategic goals. As seen above, universities are free to spend their public money on all tasks related to education, research and knowledge dissemination. Institutional autonomy also enables universities and research institutions to meet the challenges (new roles and tasks) of an increasingly complex global environment. This requires them to increase and diversify funding sources. That includes funding from a variety of public sources.

From the perspective of the different funders, one of the issues is that it is not clear who funds what. This naturally creates tension. On the one hand, lump sums provided to universities mean that they can spend this money according to their own priorities; on the other hand, the different funders need to have a clearer picture of which elements are already funded by this lump sum. To further complicate the picture, it should be taken into account that applied- and fundamental research activities also make use of facilities such as buildings (and therefore trigger indirect costs) so that

project-money (second and third flows of money) need to be complemented by government money (first-stream money) through co-financing mechanisms.

The core of the problem consists in identifying who has the responsibility to pay the indirect costs for facilities for research. In other words, there is a need for financial transparency. What exactly is the total income, and which part of that income will be used for which activity, or is responsible for which outcome?

Currently, higher education institutes provide financial information regarding income (through annual reports) and the overall spending, including staff expense and material costs. However, it remains unclear how the funds are distributed internally to education, research and knowledge transfer activities. Government and institutions might have different aims, which can lead to tensions. On the one hand, the government has a special interest in uniform quality information about output and outcomes, which are related to political goals and public interest. Whereas, on the other hand, HEIs and other autonomous research institutes choose their own strategies, which do not necessarily coincide with government aims.

To improve the relationship between funders and researchers, some adjustments have already been made by the Dutch authorities in the fields of definition, administration and communication. However, although there is overall appreciation for the improvements made, the only way to really cut red tape is to move to a trust-based approach. In addition, continuous attention should be given to the uniform application of rules and to the further improvement of the single registration facility as well as the development of full costing methodologies to ensure a level playing field.

3 Examples from the Netherlands

The following section details some important measures taken by the public authorities in the Netherlands to simplify public funding, which in turn is an important factor to improve diversification of income streams.

3.1 Uniform subsidy framework

Some experience has been gained with common guidelines for regulations, accounting and quality control. The measures are inspired by the desire to simplify financial transactions, to reduce red tape and to increase transparency by applying common definitions for costing. A first step to diminish the administrative burden is the cross-sectoral framework developed in 2010 by the Department of Finance regarding management and control of public grants. All Ministry departments are due to adopt the principles of this framework for all government subsidies, including research by

2012. This notably includes proportional accountability requirements in relation to the size of the government grants with three arrangements. For grants up to 25.000 Euro, the principle is that efforts for both the beneficiary and the funder are kept to a minimum in terms of financial administration; grants between 25.000 and 125.000 Euro do not require an audit; grants exceeding 125.000 Euro do require an auditor's statement but financial modalities have also been simplified with a view to reduce administrative costs.

3.2 Agreement about funding rules

Funding organisations and agencies play an important role not only because they provide external funding, but also due to the funding requirements and conditions that are linked to this funding and which have obvious steering effects on universities. They offer a broad spectrum of funding opportunities at national level, with the various agencies developing their specific profiles, e.g. focusing on basic or applied research, innovation or specific structures of research projects (cooperation with industry, centers of competence, etc.). However, these opportunities are often linked to a substantial diversity in funding models and mechanisms.

Universities are thus confronted with very heterogeneous sets of requirements depending on the different types and roles of national and European funders. Some funders fund only part of the costs wherelse some others moved towards funding the full costs of an activity. It is clear that, in these conditions, it is a challenge for universities to develop their own coherent systems, as these heterogeneous requirements often force them to develop and maintain multiple systems based on different approaches and cultures.

To overcome these challenges, and in addition to the uniform subsidy framework, all stakeholders such as universities, the government and intermediary funding bodies are working together to establish a transparent system, which should allow funders and beneficiaries to better identify who is paying which part of an educational or scientific activity. The new agreement was concluded in 2010 and the intention is that it should facilitate the transition towards funding on a full cost basis. This specifies which (direct) costs incurred in the framework of an externally funded research activity are reimbursed. Another important element of this agreement are transparent and clear definitions of funding. The parties involved are: the Netherlands Organization for Scientific Research (NWO); the Association of Universities in the Netherlands (VSNU); the Royal Netherlands Academy of Arts and Sciences (KNAW); the Netherlands Organization for Health Research and Development (ZonMw) and the Dutch association of Charity funds VFI.

3.3 Development of full costing

It is the responsibility of the autonomous universities to develop strategies and spend the funds made available to them in a transparent manner, in a way that contributes to achieving the goals they have set. Full costing is of paramount importance to that end. For the government, on the other hand, it is important to know that government money is efficiently spent for agreed government goals. In the Netherlands, it can be seen that funding for universities is shifting from significant core funding, providing 'internal' resources which universities are able to allocate according to their own strategic goals, to a model dependent on competing for funds and thus increasingly influenced by research priorities set by funders. The government helps to develop this process, but still takes into account that the government goals will be maintained.

Autonomous, accountable universities have to deal with this situation while preserving the sustainable funding of their activities and diversify their funding streams. As a consequence, universities develop an increased awareness of the real costs or full costs of their activities as a basis for informed decision-making with respect to their activities and the funding streams relevant for them. They also develop a more strategic approach to research management and the internal allocation of resources to support their research. Full cost awareness as well as pro-active management are seen as two essential principles on the way to achieve sustainability of university-based research.

This can be illustrated with the example of the University of Amsterdam (Aartsen, 2008), which has developed an elaborate full costing system. However, this situation is not representative, since the administration of research funds is still heterogeneous in the Netherlands. In the case of the University of Amsterdam, (financial) transparency is strongly supported by the board and senior management team. In this environment, an appropriate climate for cost-(recovery) related decisions could be established. A further step was to delegate full financial responsibility to faculty deans, so that synergies between financial and academic policies could be better exploited. Under these conditions, it was possible to rationalise the internal budget allocation by relating (cost-informed) budgets to performances and by automizing preferred behaviour. However the implementation of a time allocation system (hours spent for academic tasks) to take account of time as the primary cost driver is challenging, due to a resistance towards time recording mechanisms.

Institutions are wary of increased administrative burden, which cannot be avoided in the beginning of large accounting/funding changes. In the long run, however, full costing could be identified as a necessary precondition for sustainability. The ability to identify one's full costs comes with a responsibility to manage them strategically,

which can only be achieved if all actors involved, including funders of research (whether for core funding or competitive funding), understand and accept the principles involved and recognize the need for universities to recover the full costs of their activities. Whether or not funders then cover those costs is the second part of the issue. It is important, in this context, to recognize that costing and pricing are two separate but interrelated activities. Full costing also puts the university in a better position to establish collaborations with industry and with other partners and to price its research competitively or at a level which matches the expectations of non-industrial sponsors.

Excellent research needs excellent management: it needs to be recognized that, as well as the ability to identify the full costs of their research, it is important that universities have the management and administrative infrastructure necessary to manage their internal resources so as to support the strategic co-financing of their research in a sustainable way. In other words, the move towards full costing is not an end in itself: it simply provides an essential tool which universities need for identifying and understanding their full costs and through which they can move towards financial sustainability.

3.4 Single Information Single Audit (SISA)

SISA is another illustration of a successful adaptation of the accounting requirements, enabling easier and more efficient auditing. In 2007, the Dutch authorities introduced the so-called "single information single audit" system, SISA, to reduce the multiple audit declarations and other administrative red tape. This system enables universities to account for the use of all kinds of financial instruments (subsidies, commissioned work, etc.) with one financial accounting document, one audit and one audit declaration. The system is based on a single accounting protocol (standard definition of eligible costs and other conditions) and a single authority (desk/mailbox) distributing the information among the other authorities concerned. It aims at reducing the redundancy of the system (avoiding duplication of accounting information and audits) and seeks to enhance the uniformity of applying rules. It also aims at harmonizing Dutch and EU accounting basics as much as possible.

SISA results from an agreement between the government and universities through the National Rectors' Conference VSNU. By concentrating audit and financial accounting requirements in one single document, it has significantly reduced red tape and increased transparency in the system since it came into force in 2009.

4 Quality control as a condition for funding HEI

Universities and external funders have agreed on a uniform protocol for research assessment. The aim is to improve research quality based on external peer review, and accountability to the board of the research organisation and to the funding agencies.

Systems of quality assurance are applied for education and research separately.

- For research activities, universities make use of a Standard Evaluation Protocol (SEP). On the basis of (external) peer-review, connected institutions judge the quality of their output under the supervision of the Royal Academy of Arts and Sciences KNAW. This is done every six years.
- For educational activities, Dutch and Flemish universities share a common accreditation institute, NVAO, which role is to guarantee the quality of the HEI. This accreditation is important, since it is seen as a condition for the right to get (public) funding. This is done every six years.

4.1 Guaranteeing quality of research

The Standard Evaluation Protocol (SEP) was developed to guarantee research quality in the Netherlands. The SEP for 2009-2015 aims at two objectives with regard to the evaluation of research (including doctoral training) and research management:

- Improvement of research quality based on an external peer review, including scientific and societal relevance of research, research policy and research management;
- Accountability to the board of the research organisation, and towards funding agencies, government and society at large.

The rhythm of the SEP consists of a self-evaluation and an external review, including a site visit once every six years, and an internal mid-term review in between two external reviews. In the SEP, guidelines regarding assessment criteria, minimum information requirements and the procedure of the external review are formulated.

After the site visit, the evaluation committee will report its findings to the board of the research organisation. The board will publish the report after internal discussions with the assessed research unit and will make public its position regarding the evaluation outcomes. The evaluation report and the position of the board together constitute the results of the evaluation.

External evaluations are of great value to the institute and its researchers, since international experts in the field formulate recommendations regarding the research includ-

ing the strategy and policies which direct and provide the conditions for the conduct of research.

With the external evaluation, the institute and its research groups account for their research activities to the board of the university, KNAW or NWO. In a broader sense the external evaluations inform funding agencies, government and society at large of the quality and relevance of research activities, thus accounting for the public investments made in scientific research.

4.2 Guaranteeing quality of higher education

A high quality standard of higher education is maintained through a national system of legal regulation and quality assurance. The Ministry of Education, Culture and Science is responsible for legislation in the area of education. As of 2002, responsibility for accreditation lies with the Netherlands-Flemish Accreditation Organization (NVAO). According to the section of the Dutch Higher Education Act dealing with the accreditation of higher education, all degree programmes offered by research universities and universities of applied sciences will be evaluated according to established criteria, and programmes that meet those criteria will be accredited, i.e. recognized for a period of six years. Only accredited programmes will be eligible for government funding, and students will receive financial aid and graduate with a recognized degree only when enrolled in, or after having completed, an accredited degree programme. Accredited programmes will be listed in the Central Register of Higher Education Study Programmes (*CROHO*) and the information will of course be available to the public.

5 Conclusion

The role of the government is to bolster a good tertiary education and research system. Conditions need to be created that serve to maintain, but also to improve a sustainable, well-functioning research system. To meet such conditions the government provides resources through core funding for the performance of three tasks: education, research and knowledge transfer in order to: a) allow young researchers to enter the research system; b) reward excellent research performances; c) allow for long-term risky research.

Additional sources have their own terms and conditions (funding schemes, rules for accountability, etc.). Even within one organization these rules might differ. In addition, funding programmes at European and international levels work according to other specific rules. This situation calls for simplification and coordination at the national, European and international levels.

The Dutch legislation and regulations have been amended and strict frameworks have been enforced in order to reduce the enormous jungle of regulations. Thus, we have managed to cut down the requirements for public research subsidies to a single comprehensive scheme. The Ministry of Finance provided a framework, while the Ministry of Economic Affairs and the Ministry of Education, Research and Science have adapted their regulations accordingly. The goal and the result of the accounting measures are the improvement of financial transparency and the reduction of red tape.

Full costing systems are another important instrument to university management in this context, as a strategic tool and for the conduct of research itself, increasing the financial sustainability of universities. It is important that universities have the management and administrative infrastructure necessary to manage their internal resources, so as to support the strategic co-financing of their research in a sustainable way.

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