

Advisory report on the relationship between national and international science and technology policy

Summary of advisory report 7

Major changes are under way internationally in politics, in society and in the economic field. These developments are having a major impact on the Netherlands. At the request of the Minister of Education and Science and the Minister for Economic Affairs, the AWT (Advisory Council for Science and Technology Policy) has examined the changing relationship between national and international science and technology policy. The key question that the AWT asks in this advisory report is how can the Netherlands survive economically in a drastically changing Europe and what is the role of the science and technology system?

The Council creates the setting for answering this question by analysing ten international developments which have an impact or will have an impact on the science and technology system. From the synthesis of these developments it emerges that to survive economically the Netherlands is highly dependent on what the science and technology system produces i.e. highly qualified people and knowledge. As a result of disappearing frontiers and the shrinking world, international competition in this system will become even fiercer. It would be a good thing to ensure that the science and technology system in the Netherlands responds well to developments thus creating a sound base for a sustainable economic order.

In the opinion of the Council the science and technology system as a whole is still not sufficiently geared to coping effectively with the international competitive battle. Government funds are still not sufficiently being allocated on the basis of superior international quality and relevance, and the upshot is too much fragmentation and a failure to opt for the Netherlands' strengths.

National government tasks versus EC

The blurring of (European) frontiers and the growing activities of the EC demand a rethinking of the goals and tasks of national science and technology policy. The Council clearly sees different tasks for the EC and national governments. The EC's main tasks are:

- To encourage those new (general) technologies for which (international) cooperation is necessary to ensure a (permanent) place among the international front runners;
- To promote research in fields requiring a community approach such as the environment, food security, harmonisation of standards etc.;
- To develop ambitious innovative cross-border projects (transport, telecommunications etc.)

National governments have their own independent tasks which are complementary to those of the EC, namely:

- To maintain a scientific and technological infrastructure (universities, TNO (Netherlands Organisation for Applied Scientific Research), gti's (major technological institutes), DLO (Agricultural Research Department of the Ministry of Agriculture, Nature Management

- and Fisheries), etc.
- To promote the dissemination and the application of knowledge;
 - To maintain a healthy, national economic structure;
 - To stimulate the science and technology system and encourage companies to participate in international cooperative ventures.

These tasks belong primarily to the work of the Ministers of Education and Science and for Economic Affairs. Where the policy areas of other ministries are involved both ministers have a task in their post as coordinating ministers for science policy and for technology policy respectively.

The Council has further elaborated these tasks distinguishing between science and technology. The guiding principle in both cases is to participate internationally. But the way this principle is worked out for science and technology differs. Scientific results are public; superior quality is a prerequisite to participate internationally. Technological knowledge is often protected and not automatically accessible to everyone. Government policy in this case must primarily be geared to ensuring access to knowledge relevant to the Netherlands.

Role of the Ministry of Education and Science; sharper profile The Council is of the opinion that in the science and research field scarce resources are still being allocated too much on the basis of history and distributive justice, while what is desperately needed is distinctions based on superior quality and social relevance. The government's prime role here is not to make the distinctions, that is up to the science and research world itself, but to provide for suitable structures, clear responsibilities and effective procedures.

The most important place for basic research in the Netherlands is the university. In the Council's view the current university system is not sufficiently capable of coping with the new international challenges; the governing structure is inadequate and there is no guarantee that the sum of the parts offers the best scientific profile for the Netherlands. Specifically, the Council advises the Minister of Education and Science to take the following steps:

- To take directional initiatives to strengthen the university governing structure, so that universities are better placed among the international competition as regards funds and good students.
- To make it compulsory for universities to publish regularly a strategic plan listing their proposals for new disciplines and chairs, research schools and major investments; and to check these plans in conjunction for their effectiveness at macro level (nation-wide coordination and concentration) and their national/social relevance.

The Minister of Education and Science, alongside the aforementioned tasks, is also responsible for (funding) international scientific research institutes and programmes. Participating in programmes of this kind only has any point if there is a qualitatively advanced home-base for this in the Netherlands. A long-term commitment from the science world is therefore necessary. The Council sees a responsibility here for the Netherlands Organisation for Scientific Research (NWO). It is of the opinion that the minister, before deciding to participate, must ask the NWO for a public recommendation on the desirability of participating, the amount of the Dutch contribution and the funding of the home-base. The NWO would also be required to publish a report at regular intervals on all current participations in international scientific research institutes and programmes.

The role of the Ministry for Economic Affairs: facilitating The open frontiers and the growing size and ambition of EC activities are having a major impact on economic activity in the Netherlands. The Council thinks the Minister for Economic Affairs primarily has a facilitating task: to do everything he can to enable Dutch business and industry to hold its own and to become

stronger in the growing international competitive battle.

The growing importance of EC policy in the Netherlands' economic development underlines the need to exert an influence on this policy wherever possible to the country's benefit. This requires an active stance and a coordinated effort towards Brussels. The presence of major multinationals in our country is of vital importance. They ensure that the Netherlands is not readily side-stepped internationally and they are in an excellent position to influence EC policy (to the benefit of the Netherlands).

The Ministry for Economic Affairs should, in the opinion of the Council, object as a matter of principle to specific measures to support businesses in Europe. Notwithstanding this, if unfair competition occurs in practice, the government should do its best to compensate for this. In this connection the Council emphasises that technology policy and industry policy are mutually reliant on each other and mutually reinforcing.

The Minister for Economic Affairs must see to an infrastructure which meets business and industry's demand for technological knowledge. The infrastructure has to be arranged in such a way as to allow access to relevant knowledge and to allow help to be given in applying that knowledge and know-how. If the Netherlands Organisation for Applied Scientific Research (TNO) and the major technological institutes (gti's) are to keep up and to be one step ahead in a number of fields, sufficient basic and specific purpose subsidies have to be provided to acquire a sound point of departure for exchanging knowledge and know-how with institutes elsewhere in the world.

Access to technological knowledge for businesses can also be acquired through participating in international cooperative ventures. It is the Ministry for Economic Affairs' job to promote the participation of businesses in these. The current set of instruments (among other things the EC liaison bureau and the EUREKA programme) is adequate for this purpose. But the ministry needs to enlarge the involvement of the scientific field in policy on European technology programmes.

A great deal of (technological) knowledge is available in government institutes, such as the institutes of the Ministry of Public Works and the RIVM (National Institute of Public Health and Environmental Protection), that can be put to economic use, thus strengthening the international competitive position of the Netherlands. It is not the task of these institutes, but the task of industry to use this knowledge. The Council recommends that the Minister for Economic Affairs should promote the interaction between industry and the aforementioned institutes.

The Council concludes in its report that a more powerful national science and technology policy is desirable to keep up with the international (economic) competition. An automatic cut in the national science and technology budget equivalent to the funds provided by Brussels is consequently not appropriate, certainly not now that there is a plan to drastically increase EC science and technology funds. First of all we are mainly talking here about complementary tasks and secondly, the EC funds can only be put to good use if national efforts continue unabated. The AWT strongly advises the Finance Minister not to go ahead with his plan to introduce an automatic cut of this kind.

