

Science means business

Research in the Netherlands should focus more on what the business world wants. That will produce more usable knowledge for which companies will dig deeper into their pockets – or so the cabinet believes. There are doubts as to whether it will really work this way. And as to whether the business world has cash to spare for fundamental research. TEXT RIK NIJLAND ILLUSTRATION RHONALD BLOMMESTIJN

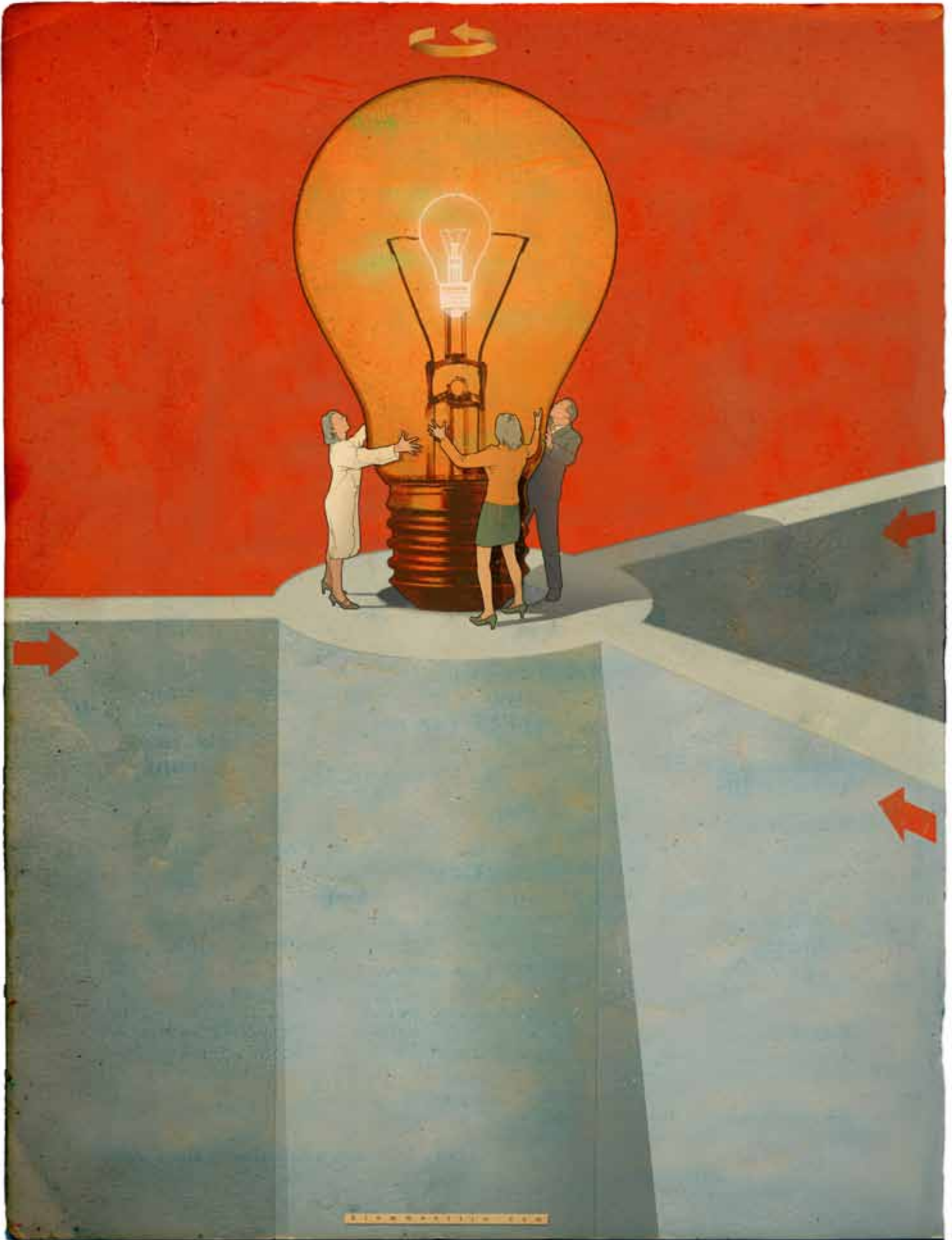
It's a match made in heaven. Science and business. At least, that is the hope of the Dutch minister of Economic Affairs, Agriculture and Innovation Maxim Verhagen. Science and the business world are to join forces to strengthen the Dutch knowledge infrastructure. New knowledge will then more quickly be put to work in innovative products and services. 'Wageningen is a shining example', said Verhagen during the opening of the academic year in September. 'The way you go about things here is actually a polder model for knowledge and innovation', said the minister, referring to the Dutch consensus-based model of collaboration thought to have evolved over centuries of land reclamation. Nowhere, said Verhagen, has the collaboration between knowledge institutions, government and business – the 'golden triangle' – flourished as it does in Wageningen. Verhagen's enthusiasm is based on the well-established and thriving public-private partnerships (PPPs) between the business world and Wageningen UR. On numerous fronts, chair groups and especially research institutes are joining forces with private parties. They have the money to spare to plug a gap in knowledge or to solve a technical problem. But the collaboration also extends to basic, precompetitive research such as the work on the genetic passport of the potato or molecular research on the tomato at the CBSG (Centre for BioSystems Genomics), a PPP and Centre of Excellence. 'In Wageningen we already know this trick, and we are used to collaborating with companies', says Ernst van den Ende, general director of the Plant Sciences Group

at Wageningen UR. 'Because of that, we are 2-0 ahead of sectors which are not familiar with the process yet.' And that is a valuable head start, because Verhagen wants to make PPPs the cornerstone of his policy. His aim for science policy is for the business world to take over the reins from the government.

MATCHING SUPPLY AND DEMAND

From now on, companies are invited to state their ambitions and the knowledge they need to achieve them; then the knowledge institutions can get to work. But those who take the lead must also dip into their pockets. Only once the business world has shown its commitment will the government follow suit. On the long term, for every 100 euros companies put on the table, the government will contribute 150 euros. The science budgets of the ministries of Economic Affairs, Agriculture and Innovation and of Education and Science, which includes the science organization NWO, have been pooled by the cabinet, and may be spent on nine 'top sectors': Agrifood, Horticulture and Propagation Materials, Water, Chemistry, Energy, the Creative Industries, Life Sciences, Logistics and High-tech.

Within each top sector a top team has set to work to match the wishes of the business world with the research on offer. In each sector, this is intended to lead to one or more innovation contracts, which should come through the ministry's letterbox in The Hague by the end of December. These contracts will make >



clear what is going to be researched in the next few years, and by which institutes and universities.

'Two of the top sectors are entirely within the green domain. Never before have we had the luxury of a Dutch government that so expressly supports our sector', says Van den Ende, member of the top team on Horticulture and Propagation Materials. 'That is a real opportunity. Of course, from the government side it is mainly a question of moving budget allocations around, but without 'our' two top sectors, we would certainly have lost some funding sources.'

FORTY THOUSAND ENTREPRENEURS

Yet Van den Ende does see the downsides too. 'This operation is being launched because it is in the government's interests to put the business world at the helm and get it to cough up 40 percent of the funding. There is a lot of tough talk about it but it remains to be seen whether the money is really forthcoming, and whether it has to be in cash or can also be a contribution in kind or in labour. This is not yet clear.' Inadequate organization on the part of companies could also throw a spanner in the works, thinks Van den Ende. 'Take Horticulture and Propagation Materials. The term 'propagation materials' covers the big plant-breeding companies, which are used to investing in research and innovation. Many of the PPPs involving them can be continued without much effort, I think.' But it won't work like that in the horticulture branch, foresees the PSG director. This sector is a conglomerate of about 40,000 small and medium entrepreneurs with a wide range of interests. Van den Ende: 'At present there is still the product board, which raises funding for innovation, but that is being severely cut. If it no longer plays that role, then I think it will be hard to create a new form of collectivism and people's own interests are going to prevail.' And that makes it difficult to reach agreements on innovative research. This will be an even bigger problem in agriculture, which comes under



the Agrifood top sector, according to Van den Ende's predictions. 'There is much less of a tradition of investing in collective innovation there than there is in horticulture.'

So what will become of the committed researchers of Wageningen UR, in research institutes for example, if little or no commitment is forthcoming from the business world in their sector? Will they be out on the street, and will their expertise be lost? 'That is just speculation', thinks Van den Ende. 'If there is no match with the business world then the superfluous research capacity will probably be used in some other way. How? That is up to the government: it has DLO's capacity at its disposal. Meanwhile, there is talk of social research questions – government questions in other words – being allowed to be part of the innovation contract after all. If the business world doesn't want to make any use of the existing research capacity, then maybe it can be used to address a problem in, say, nature policy.'

BASIC RESEARCH

Francine Govers is not sure what the new policy will bring her either. Govers is professor of Phytopathology at Wageningen University, part of Wageningen UR, and also programme director at the CBSG, the Centre for BioSystems Genomics. The current funding source, nat-

HAND IN HAND

Wageningen UR collaborates on tens of projects with companies and other partners, on a wide range of research topics. One of the many examples of this kind of public-private partnership is the *Greenhouse as energy source* project. The aim here is a massive reduction in the use of fossil fuel energy. By

2020, the Dutch greenhouse horticulture sector should become a supplier of heat and electricity.

Meanwhile, the partners in *Biobased Performance Materials* are working to develop applications for biomaterials to replace plastic produced from oil.

The *Cows with better quality milk* project

aims at making DNA solutions usable for breeding cows that produce certain types of milk, for example milk containing more unsaturated fatty acids. And then there is the *Coast Laboratory*, which studies ways of combining agriculture, sustainable fisheries, coastal conservation and beautiful nature.

ural gas revenues, is due to dry up in 2012. The CBSG, which does a lot of basic, precompetitive research with a great deal of input from Wageningen, is then supposed to slot into the new policy of minister Verhagen.

‘We have mainly potato and plant-breeding companies as partners’, explains Govers. ‘Their financial contribution is around 10 percent, much less than the 40 percent asked for in the top sectors. Are companies going to cough up that whole amount? And if not, where is the money going to come from? Not from the NWO, I am afraid, because that organization already has too little money and what it has is earmarked.’

So Govers is afraid that the CBSG may be a victim of the new policy. With a contribution of 40 percent, the business world will probably be strongly inclined to invest in research that leads quickly to solutions, she expects, and not in the fundamental research which most of her PhD students and Postdocs are working on. ‘If our funding disappears, so will the flow of new insights which applied scientists build on, for example in relation to resistance to disease, or taste in tomatoes. And our output of well-trained scientists who can go on to work for companies will also dry up’, says Govers. ‘The CBSG received a positive evaluation, both for applications and valorization, and for scientific output. It would be a great shame if we had to give that up.’

Govers is convinced that the wishes of practitioners should be carefully listened too, but that there should also be some space to steer one’s own course. ‘I myself am working on the cause of the potato disease *Phytophthora*. That has no direct connection with the work of breeding companies. Traditionally, they concentrate on the plant and on breeding resistant species, and not on the pathogen. That companies now know how to break down resistance and what to look out for in the breeding process is thanks to our fundamental research on the pathogen. But would they have wanted to finance it at the time?’

NOT ROLLING IN IT

One thing is clear: Govers need not hold her cap out to research manager Peter Bruinenberg of potato starch company Avebe. ‘The potato sector is not rolling in money. The contribution to the CBSG has sometimes been a little more than the current 10 percent, but it turned out we couldn’t keep that up, let alone provide 40 percent of the funding. Partly due to the CBSG’s results, we at Avebe have invested extra in our own laboratory, in order to do more research, but we can only spend that money once. What is more, other top sectors such as chemistry are tugging at us too’, says Bruinenberg. ‘I predict that the focus is going to shift from precompetitive to applied research,

THE CONSEQUENCES FOR WAGENINGEN UR

Minister Verhagen wants to make public-private partnerships (PPPs) the cornerstone of his policy. This emphasis particularly affects the research institutes at Wageningen UR, explains Frank Bakema, head of the strategy section at Wageningen UR. ‘A major proportion of the government funding they receive is now being tied by the ministry of Economic Affairs, Agriculture and Innovation (EL&I) to the top sectors, nine key spearheads of our national economy. That research, worth 51 million euros last year, can only be continued if money is pumped into it by the business world as well’, says Bakema.

There are exceptions, he says. These include Alterra’s research on nature, landscape and biodiversity; the statutory research assignments that RIKILT carries out on food safety and that the Central Veterinary Institute does on animal health; research at the Dutch Centre for Genetic Resources; and research on fish stocks at IMARES. The core funding of the chair groups at Wageningen University is not affected by the plans. It is however the case that many PhD students and Postdocs take part in research projects that come under the top sectors.

‘In Wageningen we already know this trick, we are used to collaborating with companies’

and I am worried about that.’

Hans Dons, director of Bioseeds BV and professor of Entrepreneurship in the Life Sciences at Wageningen University, is uneasy too. ‘I think we could contribute 40 percent to strategic and applied research, but you can’t expect us to invest heavily in fundamental research. We in the seed sector are very happy with the high standard of the Dutch knowledge infrastructure. Fundamental research driven by scientific curiosity is absolutely essential to that, but you can’t make the business world responsible for it’, says Dons.

Moreover, he reckons it will be no easy task to get the business world in the driving seat in science. ‘I would expect that the research directors in companies will want to keep their cards close to their chests, with the competition in mind. They will wait and see. But within the knowledge institutions, people are bursting with ideas they want to put into action. It will be very important to establish the research agenda together.’ ■