Basic plant research is essential for the future

At a global level, seeds and young plants produced by Dutch companies play an important role in improving the sustainability of agriculture and horticulture and ensuring the supply of appealing food products for consumers. More than 250 breeding and propagation companies are involved in products such as vegetable seeds, tubers and ornamental plant cuttings. In addition to being the biggest exporter of seeds and young plants, the Netherlands is also leading the way in the development of new varieties; more than 30% of all European applications for plant breeders' rights are made by Dutch companies.

A thorough understanding of plants and their growing environments is indispensable in order to continuously further improve varieties. That is why breeding companies invest an average of 15% of their revenue in research and development – and even as much as 30% in the case of vegetable seed breeders. Knowledge institutions also conduct a lot of important plant research. For instance, there are 30 research groups and 400 PhD candidates working day in, day out, within Dutch universities to learn more about plants. Plantum is committed to supporting the further expansion of such research activities within knowledge institutions, universities and companies alike.

The development of improved varieties can make an important contribution to tackling societal challenges such as population growth, climate change and urbanisation. Progress can be made by developing plants that are resistant against new diseases and pests, for example, as well as plants that can cope with silted, dry or wet conditions, plants that are more suitable for mechanical processing or varieties that stay fresher for longer after harvesting.

Plants and their growing conditions

Because plants are natural products, they challenge plant researchers with many complex questions. How can genes for drought resistance be successfully combined with genes for disease resistance? Can lessons learned from plant genetics be used to improve human health? And what role do environmental factors play in the outbreak of a fungal disease, for example? This kind of knowledge about plants and their growing conditions can help breeders to take a more targeted approach to developing improved varieties. Thorough research helps to speed up the breeding process and offers extra opportunities for introducing 'complex' traits into plants.

Advanced plant research also plays an important role in the training of the sector's current and future workforce. The industry currently employs around 12,000 people – one third of whom are highly qualified professionals – and the number of jobs in the sector is still growing. Pioneering and basic research is necessary in order to educate researchers in preparation for industry and academia.

Basic and strategic research

The Netherlands' strong position on the global market cannot be taken for granted. Although companies are continuing to invest heavily in research, the government is lagging behind in its support. There have been sustained cutbacks in basic and strategic research since 2012.

Plantum's calculations reveal the need for an extra €250 million over the next decade in order to maintain the sector's level of innovation. These calculations took into account the research proposals companies have submitted to the Top Sector for Plant Reproductive Materials. Based on the submissions so far, companies are twice as willing to invest in public-private research partnerships as the government is. Furthermore, out of all the country's 'Top Sector' initiatives, the Top Sector for Plant Reproductive Materials receives the smallest slice of the budget reserved for basic scientific research (see figure below). In Plantum's opinion, these differences are at odds with the potential contribution plant research can make to solving societal problems.

Need for stable policies

Over recent years there has been a lack of stability in the policy relating to public-private partnerships and innovation. From 2007 to 2012 it was the responsibility of the Technological Top Institute Green Genetics, then the Top Sector for Plant Reproductive Materials was set up in 2012, and since 2016 also the Science Agenda has been playing a key role. Plantum calls for a stable research policy, because breeding is a very lengthy process and breeders need to know where they stand for at least a ten-year time horizon.

Green Breeding

Plantum regards the 'Green Breeding' programme (groeneveredeling.nl) as a good example. €10 million is available for a ten-year period, and scientists and companies are using the funding to explore together how plants can contribute to a more sustainable farming.

Access to data

It is important both for knowledge institutions and for the government that everyone has access to data resulting from public-private research partnerships, and Plantum also supports an open-source approach. However, such openness should not mean that it is no longer worthwhile for a company to participate. Plantum therefore calls for fair agreements to be reached on the access to data from public-private research projects. A so-called 'timeslot' could perhaps play a role in this, by ensuring that access to the data is restricted to participating companies only for an agreed period of time.

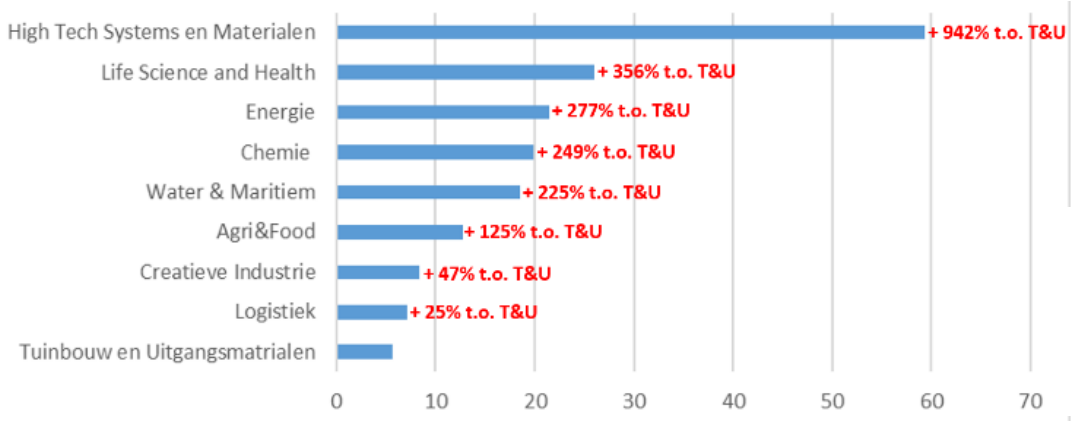

Figure 1: Allocation of NWO budget between the various Top Sectors in 2018/2019.
Source: Kennis- en Innovatiecontract (Knowledge and Innovation Contract) 2018-2019

Plantum

address Vossenburchkade 68, 2805 PC Gouda, the Netherlands
telephone +31 (0)182 68 86 68 fax +31 (0)182 68 86 67
email info@plantum.nl website www.plantum.nl

Plantum is the Dutch association of companies that produce and trade plant reproductive material. The companies are active in plant breeding, propagation, cultivation and trade of seeds, bulbs, tubers, cuttings and young plants of agricultural and horticultural crops.