

Inspiration

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A National Research Agenda

When the Knowledge Coalition set out to develop the Dutch National Research Agenda, their mission was to come up with an inspiring product. Looking back, the process – maybe even more than the product – did indeed prove to be inspiring. Many more individuals than expected, both researchers and individual citizens of all age groups, submitted a question that they would like to answer or see answered. And many more individuals attended the conferences, the festivals, and the ‘living room lectures’ that were organised, and watched the debates about the questions on television. These individuals personified the inherent curiosity for new knowledge that drives research and innovation, but that apparently also inspires society.

The time and effort that many academics, especially from the Young Academy, put into clustering the almost 12.000 questions into the final 140 overarching questions that make up the Dutch National Research Agenda went beyond the call of duty. The questions cover all fields of science (in the Dutch sense of the word), all disciplines and all stages of research and innovation. The questions also build on and connect the research agendas of the different partners of the Knowledge Coalition. In this way the Dutch National Research Agenda inspired these different partners (Universities, University Medical Centres, Universities of Applied Sciences, the Royal Netherlands Academy of Arts and Sciences, the Netherlands Organisation for Scientific Research, the Applied Research Institutes, Industry and Small Scale Enterprises) to step up collaboration and jointly shoulder the responsibility to implement the agenda.

Not only the process, but also the product itself should serve as a source of inspiration, otherwise the mobilization of so many citizens and busy researchers would be in vain. This product, the 140 questions in the agenda, will be put to the test in the coming year. Will it help secondary school students to choose a career in a certain field? Will it inspire students to write their thesis on a topic that links to one of the agenda questions? Will academics from different disciplines find one another, looking at the same questions from different perspectives? Will the perpetual exchange between basic research, applied science, and implementation accelerate innovative solutions in society and business?

To help this process we have made the Dutch National Research Agenda available to every secondary school in the Netherlands, with instructions for teachers on how to use it. Through the landscape of the 140 questions we have mapped out 16 routes, thus creating subsets of questions touching upon complex challenges. For each of these routes a number of workshops are being organised where researchers from all disciplines active in these fields and those who use their results will meet and get to know one another and discover what each one is doing. Hopefully these discussions will be so inspiring that new research projects will arise. Research projects in which individuals or disciplines that have not collaborated before find common ground for accelerating their quest for answers. These 'game changers' will look for and find funding to achieve their potential. It is to be hoped that some of these newly formed communities of researchers will continue to meet in the coming years and that additional coalitions of researchers will explore alternative routes. In this way the Dutch National Research Agenda will be able to continually inspire innovative research for years to come.

In the meantime, the Knowledge Coalition will put forward a strong plea for renewed investments in research and innovation by subsequent governments, as it is convinced that research and innovation are the most powerful source for creating growth and jobs, finding solutions for social dilemmas, and fuelling inspiration and ambition for new generations. Substantial and structural additional investments are required, half of which need to be spent on maintaining a strong, broad base for science, in all disciplines and at all levels (including investments in infrastructure and young talent), and the other half to be invested in game changers that have been identified in the route workshops. Why are both needed?

An investment in the future

Academics are part of a global community. Researchers know their peers abroad as well as those in their own country and students travel the globe to find the education they aspire to. This has been the case since Erasmus travelled Europe. In these international communities researchers are familiar with one another's work and know what the truly important hypotheses are. They are often as curious about the results of others as they are impatient to know what comes out of their own experiments. After all these are the building blocks that they will need and use for their next projects.

But only the best are part of the inner circle of that community, where the real new insights are developed and shared. Being part of that much

smaller community gives them access to new information long before it is published, information that may be crucial for a new research project or for an application or the development of a new product. Any country that aspires to use science for innovation will want to have access to a large number of such inner circles as it is often very difficult to predict where the interesting opportunities will emerge.

In the Netherlands we are lucky to have a large, diverse, vibrant and very successful knowledge and innovation community. Many leading researchers are part of the inner circle in their field. But having access to the latest information and doing groundbreaking research is not enough. One has to be able to link that to those who can take further steps – in applied research, product innovation, or social innovation. It is this ecosystem that the Knowledge Coalition managed to mobilize for the Dutch National Research Agenda. When the Knowledge Coalition was unexpectedly flooded by a tsunami of questions, many researchers were able and willing to help sort them and cluster them around research communities that were already functioning in such an international context. The 140 questions that make up the current Agenda can thus be seen as the result of connecting citizens who believe science can help us forward with established research networks that can link these questions to the global academic and business R&D community.

Past investments in research in the Netherlands have established a high-level platform supported by many pillars of disciplinary excellence that each have access to the highest level of international knowledge and scientific debate. It is this broad and high-level base that provides the best possible starting position for researchers striving to reach for the very top, be it in basic or applied research or in using that knowledge for breakthrough innovations in societal or economic terms. Since we cannot easily predict where the important opportunities will arise, the academic community in the Netherlands has always set its aim on excellence rather than deciding upfront in which topics to invest. Excellence depends on recognizing, recruiting, and training talent. That is what universities are for. But it is the students who decide to enter a university and choose the subjects they feel inspired by. They will determine in which fields excellence will thrive. That is why half of the investments should be spent on keeping the base broad and strong, but above all attractive so we can keep young talent in the Netherlands.

At the same time, government may choose to invest in certain pressing societal issues, be it for economic growth, jobs, or the well-being of citizens. Their choice may depend on the political constellation of the day or on

the opportunities that are perceived. With this National Research Agenda we have made visible pressing issues that require new knowledge and the variety of potential game changers that research and innovation have to offer. That is what the other half of the investments should be spent on and the Knowledge Coalition will present possibilities to do so and mechanisms to identify the most promising initiatives. In doing this we provide politicians with an investment agenda that can help prepare our society for the future. We hope it will prove to be an 'offer you can't refuse'.