Photo Markthal: pkhere – Paul van de Velde

Dutch Research Agenda

The aim of the Dutch Research Agenda (NWA) is to utilise knowledge to make a positive, structural contribution to the society of tomorrow, by building bridges today and jointly ensuring scientific and societal impact. The NWA was realised through an innovative process with the input of both citizens and scientists.

The Dutch Research Agenda brings together a diverse range of participants in research and strengthens and facilitates their productive interaction. Science and society are brought together, just like different scientific domains, types of research (fundamental, applied, practice-oriented) and national and international research agendas.

Where society and science meet and strengthen each other

Under the auspices of NWO, the NWA has developed into a revolutionary programme in the Dutch (and even global) knowledge landscape, in which scientific breakthroughs are linked to societal challenges by 140 cluster questions and within 25 routes. The cluster questions emerged from Dutch society. The routes connect these questions on the basis of themes and form research networks in the social arena. Giving research results back to society and increasing the trust and involvement of citizens in science remains one of the key elements of the agenda.

The Ministry of Education, Culture and Science charged NWO with the implementation of the programme for the Dutch Research Agenda. Since the start of the NWA in 2018, new interdisciplinary and transdisciplinary partnerships have been encouraged.

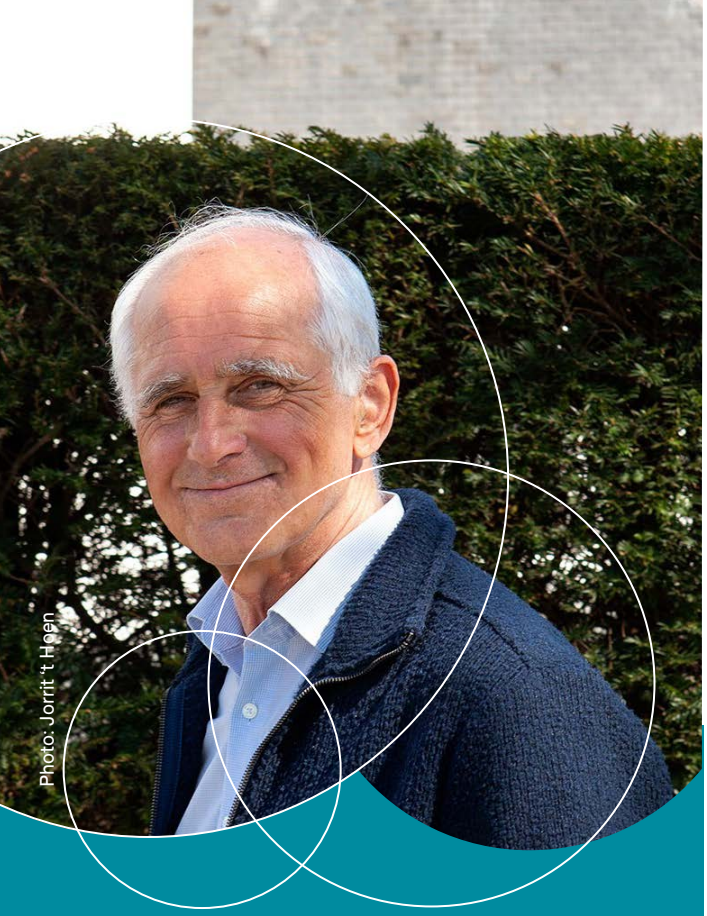

Photo: Jorrit 't Hoen

'A characteristic of the research that is part of the NWA programme is that it is carried out across the entire knowledge chain and the approach is interdisciplinary in nature. These characteristics give the NWA programme a unique position. The programme connects science with society in both networks and research projects as well as via science communication and outreach. It encourages interdisciplinary, knowledge-chain-wide research into complex issues in which close collaboration with societal organisations is necessary. Such a collaboration does not occur automatically but requires continual management and support; much has been learnt about that in the past years.'

NWA – **Bert van der Zwaan**,
Chair NWA programme committee

NWA research takes place in consortia. In these consortia, universities, university medical centres, universities of applied sciences, TO2 institutions, planning offices, national knowledge institutions and other knowledge organisations work together with societal partners from the public, semi-public and private sectors. Team science is clearly part of these collaborations and there is room for citizen science.

Programme lines NWA

The NWA has four programme lines:

1 Long-term, interdisciplinary and transdisciplinary research along NWA routes by consortia (ORC)
2 Thematic calls at the initiative of government departments
3 Networks and innovation within the routes
4 Science communication and outreach

Within these programme lines, the NWA has in a period of three years awarded more than 200 million euros of funding to almost 190 research projects, with a budget ranging from 50,000 to 10 million euros.

Would you like to know more?

Please send an email to **Jeanet Bruil**
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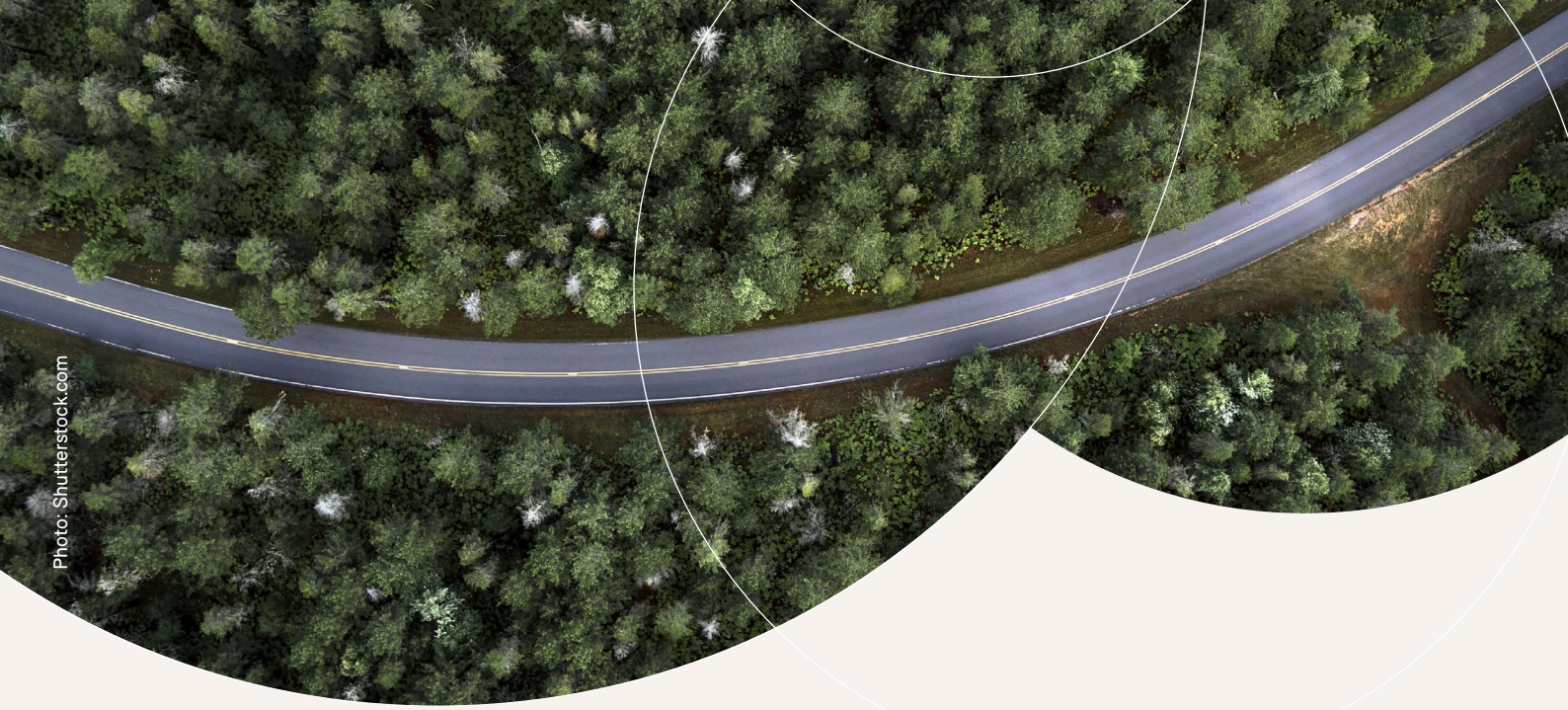
The Hague, November 2021



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Programme line 1: Research along Routes by Consortia

The science-encompassing funding round Research along Routes by Consortia (programme line 1) is aimed at making interdisciplinary research and innovation possible, so that societal and scientific breakthroughs come within reach. In this research – along (parts of) the routes of the NWA, or overarching these routes – collaboration is pivotal, both within the entire public knowledge chain and between the entire knowledge chain and societal partners.

Consortia of researchers and societal part ners in the public, semi-public and private sectors therefore work together intensively in designing, realising and applying research. Within such broadly composed consortia, the cyclical character of research and innovation processes can be effectively realised. 'Cyclical character' is understood to mean that research leads to knowledge that is translated into applications for policy and practice. And it also means that the questions and problems from policy and practice, in turn, give reasons for further fundamental and applied research.

Essence of programme line 1

The aim of the NWA-ORC programme is to encourage research within knowledge-chain--wide and interdisciplinary consortia, in which researchers collaborate with relevant societal (public and/or private) partners and citizens.

The applicant chooses a subject based on the routes and on the cluster questions

The problem posed in the research is related to the complex issues (wicked problems) from the portfolio of the 25 NWA routes, the associated 140 cluster questions and, where applicable, the elaboration of those in the knowledge agenda of the route.

Long-term, multidisciplinary research along NWA routes by consortia (ORC)

Submission

In the annual NWA-ORC funding round, consortia submit proposals that jointly give expression to the breadth and character of the

Balai Pemuda (1907), Soerabaja.
Photo: Rindra170 | shutterstock.com)

'A 'pressing matter' refers to both an urgent issue and a difficult subject. Our project Pressing Matter concerns the role that **colonial collections** can play in solving tensions about how we deal with the colonial past. Which **new forms of ownership** are desirable and possible?'

Susan Legêne, VU Amsterdam (ORC 2019)

The consortium members are University of Amsterdam, Utrecht University, Leiden University, NIOD Institute for War, Holocaust and Genocide Studies, Royal Netherlands Academy of Arts and Sciences, University of Groningen, University Medical Centre Utrecht, Dutch National Museum of World Cultures, Foundation Dutch National Museum of World Cultures, Foundation Academic Heritage, Rijksmuseum, Bronbeek Museum, Framer Framed, Rijksakademie, The Black Archives, Peace Palace Library, University of Groningen Museum, Utrecht University Museum, Hapin, Papua Support Foundation, Dutch Culture, Cultural Heritage Agency of the Netherlands, Imagine IC, Pitt Rivers Museum, Center for Anthropological Research on Museums and Heritage, Museum Nasional Indonesia, Universitas Gadjah Mada, University of the Western Cape, German Lost Art Foundation.

Dutch Research Agenda. The round makes research possible that leads to societal and/or scientific breakthroughs.
New knowledge and insights from scientific research can make an important contribution to solutions for current and future societal issues. Examples are social inequality, the energy transition, health and care or climate change. Knowledge utilisation increases the chances of research having societal impact and is therefore an important part of the NWO strategy for 2019–2022 as well as of the action plan for the ORC projects.
Collaboration with societal partners is a pivotal element and citizen science is also encouraged.

Highlights

— In 2018 and 2019, NWO received **183** project proposals in two rounds. In programme line 1, NWO awarded the sum of **154.5 million euros** to a total of **38 consortia**.

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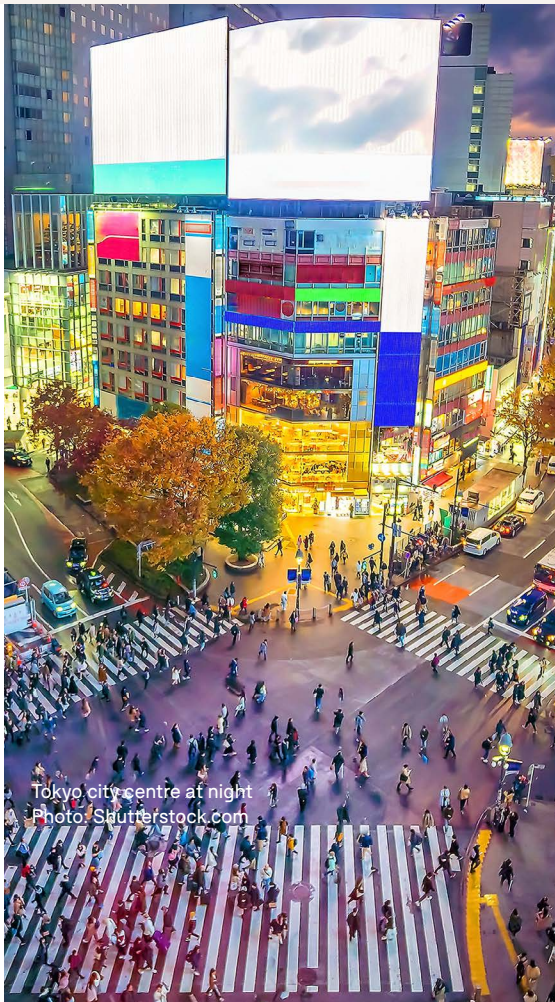
https://vragen.wetenschapsagenda.nl/
(in Dutch)

'Our 24-hour society is disrupting our **biological clock**. This increases the chances of mental and physical health problems and poses a **worldwide threat to biodiversity**. We want to develop strategies to keep the biological clock healthy. With that, we can contribute to a more **sustainable future of our planet** and its residents.'

Joke Meijer – Leiden University Medical Center (ORC 2019)

The consortium members are Amsterdam UMC, Amsterdam University of Applied Sciences, Erasmus MC, University of Applied Sciences Van Hall Larenstein, Leiden University, University of Amsterdam, Institute of Biology Leiden, Leiden Academic Centre for Drug Research, Netherlands Institute for Neuroscience, Netherlands Institute of Ecology, National Institute for Public Health and the Environment, University of Groningen, Eindhoven University of Technology, TNO, University Medical Center Utrecht, ARTIS, Centre for Human Drug Research, Chrono Eyewear BV, Chrono@Work, Edelris, Municipalities of Amsterdam, Apeldoorn, The Hague Leiden, Rotterdam, Texel and Utrecht, mental health care authority Geestelijke gezondheidszorg voor mensen in Eindhoven en omgeving, Good Light Group, Dutch Brain Foundation, Janssen Pharmaceutica, Jeroen Bosch Hospital, Dutch Cancer Society, Leyden Academy on Vitality & Ageing, Methylomics BV, MediluX BV, NEMO Science Museum, OcellO, Peira, Technolab, Witte Raaf, Algemeen Verbond Van Volkstuinders Verenigingen in Nederland, Caring Universities Consortium, Municipality of Putten, Glastuinbouw Nederland, Globe at Night, Holland Rijnland, International Dark Sky Association, Leids Universitair Behandel- en Expertise Centrum, Naturalis, organisations for the protection of nature and the environment, Netherlands Institute for Health Services Research, Openbare Verlichting Nederland, Platform Betere Tijden, Rijkswaterstaat, Smart City program, Municipality of Rotterdam, Vereniging van Ouders van Couveusekinderen, Vreeken's Zaden, Water Authority Hunze en Aa's.



Tokyo city centre at night
Photo: Shutterstock.com

The Hague, November 2021

Photo: Martin Bergsma | Shutterstock.com

Programme line 2: Thematic programming

The Dutch Research Agenda focuses on challenging and directional issues that connect with the strength of Dutch science and tackle the major societal challenges of this time. Specific thematic programming on societally urgent themes in collaboration with government bodies is in line with this.

Programme line 2 offers government ministries and other government bodies the possibility to encourage research that leads to well-founded answers to societal issues that are high on the policy agenda. This programme line aligns the Dutch Research Agenda and the NWA programme with the knowledge agendas of government departments and other government bodies.
In most cases, the themes in programme line 2 concern complex societal challenges for which there not yet exist sufficient solutions or action perspectives. Examples of this are the ecological consequences of interventions for wind energy on the North Sea (Ecology & North Sea), increasing the sustainable economic independence of women (Economic Resilience of Women), the problems of restoring and maintaining bridges and quay walls in the historic city centres ('Urbiquay') and the challenge the world faces of feeding 9 billion people in the year 2050 (Transition to a sustainable food system).

Trying to obtain 'wicked solutions' for 'wicked problems' meets the needs of the government. The role of NWO in programming, the application and assessment procedure and bringing parties together, stimulates relevant, independent research for current policy. In doing so, research can contribute to evidence informed policy.

Consortia investigate issues put forward by government departments

Essence of programme line 2

The Dutch Research Agenda offers government bodies the possibility to encourage research into themes that are relevant for them and to obtain well-founded answers to societal issues.
Government bodies can annually put forward themes and policy questions which require

Photo: Shutterstock.com

The programme Debt and poverty

'Debt has a considerable impact on debtors and on society. Municipalities have invested a lot of money in reaching indebted citizens and in the support that must result in sustainable solvency. We are doing research into the existing interventions. By doing this, we will find out more about what does and does not work.'

Tamara Madern, Utrecht University of Applied Sciences

Consortium members are Verwey-Jonker Institute, Statistics Netherlands, Pharos, Valente, Save the Children, Bureau Bartels, Municipalities of Amsterdam, Utrecht, Gouda, Deventer, Arnhem and Haarlem. Government ministry involved: Social Affairs and Employment.

research. These questions are further developed into calls for proposals with an extra financial contribution from the Dutch Research Agenda.

At www.nwo.nl/nwa-themas, an overview of the calls published so far is given. In this programme line, there is room for thematic programmes (jointly) initiated by government bodies. Furthermore, within the synergy programmes, specifically chosen themes are further developed together with government bodies and in synergy with the Knowledge and Innovation Covenant (KIC). The idea is that this synergy contributes to more societal and scientific impact. The first theme is Artificial Intelligence, for which a call has been published. More synergy themes will follow.

Highlights

- Between 2019 and 2021, NWO published **23** thematic programmes
- In programme line 2, NWO awarded a sum of **41.6 million euros** to a total of **31 consortia** (Calibration point November 2021)

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'Nature and agriculture need each other to find solutions for major societal issues in rural areas. For the programme Living labs for the restoration of biodiversity in rural areas, close collaboration takes place with stakeholders in three areas, but also with the civil society movement Delta Plan for Biodiversity Recovery, fundamental researchers, NWO and policy. As a result of that, we learn as we go along what actually works in the field and what does not. Furthermore, the knowledge acquired will be spread via the network of the Delta Plan for Biodiversity Recovery, which will probably also encourage other areas to adopt area-specific collaboration in this field.'

Mariska Harte, programme manager Connecting agriculture and nature at the Ministry of Agriculture, Nature and Food Quality.

The Hague, November 2021

Photo: Shutterstock.com

Programme line 3: Innovation and networks

The NWA supports 25 routes. These routes form self-organising networks that connect the 140 cluster questions, encourage new networks and put important scientific, societal and economic issues on the agenda and investigate these.

Routes play a role in the organisation of the field and ensure greater involvement of the entire knowledge chain, the bringing together of relevant consortium partners, the realisation of knowledge utilisation, recognising potential societal and scientific breakthroughs within a route and monitoring the core objectives of the route and the NWA. In this way, routes can also ensure a programming effect within the research field.

Networks

So-called route leaders and quartermasters organise the routes. They can apply for funding to support their network activities.

Self-organising networks and small-scale, high-risk projects

Innovation

Besides facilitating connections between the entire knowledge chain, the NWA programme line focuses on innovation: the NWA as a stimulus for curiosity and inspiration. In the (since stopped round) Idea generator, researchers could test the receptiveness for their ideas. The possibility for such short projects now exists within the routes.

Overview of the routes in Dutch

https://2.wetenschapsagenda.nl/overzicht-route

Photo: Shutterstock.com

'Speech technology should make it easier for **older people** to deal with technology. Many older people nevertheless remain hesitant about using **technological solutions** to support their **everyday lives**. In Groningen, we developed two synthetic voices, one in the regional dialect "Grunnegs" and one in Dutch. These were programmed into the commercial robot Pepper. We discovered that a robot which speaks the regional dialect engenders more trust because people find the language easier to understand and nicer to listen to. However, an unexpected outcome is that elderly people consider a robot that speaks in the regional dialect more "scary" than a robot that talks in Dutch... which again undermines the trust in the robot.'

Jenny van Doorn, University of Groningen.

Essence of programme line 3:

Consortia can apply for the funding of management costs within NWA routes. They can also apply for funding for small projects. In both cases, there is no competition.

Highlights

- In 2017, within the Kickstarter programme (prior to the NWA programme) an amount of **20 million euros** was awarded to **8 routes** in the form of kickstarter grants
- In 2019, Idea Generator grants were awarded to **79** (young) researchers, and together, these amounted to **4 million euros** in funding awarded
- In 2020, a total of **3 million euros** was awarded for small projects to be realised in **24 routes**
- Each year, the **25 routes** request funding for route management and network activities

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'As a researcher, you are often active in your own little patch – whereas there is a high chance that someone else in the world is working on exactly the same issues from a different perspective'. The chance to bring different disciplines together was unique, Dumontier agrees: 'Another type of research funding body would never have given me the opportunity to set up a comparable experimental research with this mix of disciplines. While it was the interaction between the different working fields that was decisive for obtaining the research results.'

Michel Dumontier, Maastricht University. Kickstarter project Responsible value creation with Big Data (VWData) – A closer look at big data.

The consortium members are, among others: Erasmus University Rotterdam, Leiden University Medical Center, Open University, Radboud University, TU Delft, Eindhoven University of Technology, Maastricht University Medical Center+, Leiden University, Maastricht University, University of Twente, Utrecht University, University of Amsterdam, VU Amsterdam, Wageningen University & Research, Institute for Information Law, Data Science Center Eindhoven, Netherlands eScience Center, SURF, TNO, Fontys University of Applied Sciences, Utrecht University of Applied Sciences, Amsterdam University of Applied Sciences, Zuyd University of Applied Sciences, Ministry of Justice and Security.

The Hague, November 2021

Photo: iStock.com

Programme line 4: Science communication and outreach

The NWA programme aims to make science accessible for a wide audience and give back research results to society. Increasing trust in science and involving citizens in science is central to this programme. Together with knowledge institutions, researchers and public institutions, the programme wants to reach as many people as possible, including young people and adults with a latent interest in science.

The aims are

- to show society that investment in science leads to answers to their questions, innovations and a better world;
- to help society distinguish between facts and fables;
- to give interested citizens the chance to contribute their ideas about scientific developments.

Innovative science communication and outreach to the wider public

The aim of public communication is to make science accessible to a wide audience. This aim is translated into a public campaign, events and collaboration with (media) partners.

WECOM

On behalf of the Ministry of Education, Culture and Science, NWO has funded research in the context of the Dutch Research Agenda since 2018 through, amongst other things, encouraging science communication and outreach.

The call 'NWA Science Communication 2021–2022' is aimed at a broad range of projects that focus on specific target groups, for example target groups who do not automatically come into contact with science and do not have an adequate idea of what science is and its significance for society. Furthermore, 1 million euros per year has been available for a science communication call since 2019.
This call has three assessment moments. Applicants for this call can submit proposals continuously until the deadline of the third assessment moment.

The interactive animation **Robin** (https://robindefilm.nl/) (only available in Dutch) is a co-creation of three researchers: Peter-Paul Verbeek, Reint Jan Renes and Tim de Mey. In addition, a further fifteen researchers contributed ideas to the project and reviewed the animation and the script. These involved researchers represent various disciplines and knowledge organisations. The viewer determines the life course of Robin based on various dilemmas. Through this animation, viewers are challenged to actively think about choices and dilemmas in science. The animation had its premiere in four cities during the Night of Science. Just as intended, a lively public debate arose at each location under the direction of a moderator.

Highlights

- Each year, a call of **1 million euros**. The money does not go to research but to innovative science communication and outreach
- **Three budget ranges**: small (<25,000 euros), medium (25,000 to 50,000 euros) and large (50,000 to 200,000 euros)
- In round 1 of the call (2020), a total of 117 applications were received, and **16** of these were awarded funding
- NWO has developed a tool to evaluate activities. The tool is being tested in projects from the first call
- Innovative science activities, such as the interactive life course animation Robin, live chat sessions with young people via Instagram and the 'family day' Expedition Next

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'As a result of the **coronavirus crisis**, it has become clearer than ever before that, as **researchers**, we must now use our knowledge for the **well-being of young people**. The *JongerenChallenge* (Young People's Challenge) proved to be the perfect instrument for this. With it, we obtained questions about a better future from young people in Rotterdam Zuid. Researchers and young people further elaborated the questions. The manifesto was presented to **Prime Minister Mark Rutte** and is now being further developed by various government ministries. It is fantastic to see that several government ministries have embraced such an important subject as young people's well-being; it is a great example of transdisciplinary collaboration.'

Eveline Crone

Prime Minister Rutte receives the NWA manifesto from researcher Eveline Crone and Mohamed Guled, one of the young people involved. Photo: Jerry Lampen