

Executive summary The Growth of Talent

Evaluation of the Talent Programme and Rubicon

The Talent Programme is a programme of the Dutch Research Council (NWO) for personal and curiosity-driven research. The Talent Programme consists of three personal research grants: Veni, Vidi and Vici. The Rubicon grant was also included in this evaluation. The NWO Talent Programme gives researchers affiliated with Dutch research institutes the opportunity to apply for funding to establish their own network, research project, research line, or research group. The programme aims to provide academic talent with (attractive) career prospects and to give scientific research in the Netherlands an innovative incentive. A personal grant through the Talent Programme may contribute to retaining researchers within Dutch academia and give them room for curiosity-driven and groundbreaking research.

The personal grants from the Talent Programme that are included in this evaluation are Rubicon, Veni, Vidi and Vici. Each grant focuses on a different stage in a researcher's career.

- The Rubicon programme allows researchers who obtained their PhD within the past year to gain experience at a foreign knowledge institute.
- The Veni grant allows researchers who have obtained their PhD within the last three years to conduct independent research and develop their ideas.
- The Vidi grant allows researchers who have obtained their PhD within the last eight years to put together or expand their own research group.
- The Vici grant allows advanced researchers who have obtained their PhD within the last 15 years to set up a research line or expand their own research group.

About this evaluation

This evaluation examines whether and how the Talent Programme achieves its stated goals (effectiveness). We also examine its efficiency, including any changes in this area during the evaluation period, which ran from 2017 to 2024. Moreover, this evaluation also looks at the relevance and coherence of the Talent Programme compared to other funding instruments available for researchers in the Netherlands and consequently the added value of the Talent Programme. For this reason, three specific sub-goals are pursued:

- To gain insight into the evolution of the Talent Programme during the evaluation period, to identify the internal and external developments that have influenced this evolution and the role the Talent Programme plays in the big picture of research funding.
- To gain insight into whether the Talent Programme grants help to stimulate the careers of adventurous, talented, pioneering awarded researchers, and retain them for Dutch science.
- To gain insight into the scientific impact of the Talent Programme by evaluating the extent to which new research lines, research groups and collaborations are being realised for the innovation of scientific research.

This evaluation has been carried out in the form of a contribution analysis (CA). A CA is a structured method to test whether all elements of a Theory of Change (ToC) are being implemented, and to what extent the intended causal relationships between the elements exist. We employed a variety of methods to answer the research questions and validate the ToC. We conducted an analysis of administrative data that NWO maintains, for example regarding the number of applications, success rates and scores given. In addition, we conducted interviews with those involved at NWO and various stakeholders and experts in the field of research funding. We also distributed a survey to selection committee members, as well as applicants (both awarded and not awarded). Finally, we held focus groups with awarded and not awarded applicants, selection committee members, and grant advisers at universities.

Conclusions

In this chapter, we present our conclusions from the evaluation. All things considered, we draw the following main conclusion:

The Talent Programme is effective and indispensable as a personal route for curiosity-driven research: it strengthens the position of talented researchers, stimulates new research lines and research groups, and contributes to scientific innovation. NWO has improved both the application procedure and the assessment procedure in various ways in recent years. At the same time, ranking the large number of eligible applications remains difficult, while awarding a grant has high consequences and the assessment requires a large time investment. Therefore, the Talent Programme still has a number of areas for improvement in terms of efficiency.

The evaluation also includes the following sub-conclusions about the overall effectiveness of the Talent Programme, the effectiveness of the implemented changes and the efficiency.

Conclusions regarding the overall effectiveness of the Talent Programme

The Talent Programme is effective. The Talent Programme demonstrably makes a substantial contribution to retaining scientific talent and conducting innovative research.

The Talent Programme contributes to employment security for researchers who receive a grant. Awarded applicants benefit not only from financial resources for research, but also from positive career effects: they are significantly more likely to have employment security, in the sense of permanent appointments and accelerated promotion. In addition, they have a greater chance at receiving follow-up funding.

The effective contribution to academic talent ensures a large amount of scientific and societal impact. By funding a diversity of studies, research lines and research groups, the Talent Programme fosters many new scientific collaborations and types of scientific and societal impact that drive both academic and societal progress.

The Talent Programme is of great value to Dutch researchers thanks to the personal and curiosity-driven characteristics of the funding. Most of those involved – from applicants and selection committee members to research institutes and external stakeholders – regard the programme as indispensable within the national funding landscape. This is because the Talent Programme is one of the few Dutch funding opportunities supporting individual researchers and curiosity-driven research.

The Talent Programme fulfils a broader system function within the Dutch science and funding landscape than merely funding individual research projects. The programme shapes how we value talent, excellence, career development, and curiosity-driven research. Policy choices within the Talent Programme have an impact on other funding organisations, universities, grant consultancies and human resources policy.

We conclude that the quality differences between eligible applications are small and that a completely unambiguous ranking of all applications is not possible. Despite the consensus that the awarded applications are outstanding, it is clear that it remains necessary to reject many others that are equally qualified. The final score and the chance of receiving a grant are therefore partly dependent on round-specific circumstances and the available financial resources.

The major impact of obtaining a grant is therefore at odds with the restrictions of the assessment procedure. Because the quality differences between applications are small and difficult to distinguish, this clashes with the significant reputation effects and career effects for awarded researchers.

The responsibility for the significant effect that the Talent Programme has on careers lies strongly in the interaction between universities and NWO, within a research system that is characterised by scarcity. In practice, the way universities handle the Talent Programme grants has a major influence. According to respondents, NWO is not responsible for human resources policies at universities, but it does have an influence on how an awarded grant is regarded in the big picture, partly due to the programme aims, target group description and positioning of the Talent Programme.

In the eyes of applicants, selection committee members and grant advisers, some aspects of the assessment procedure can be improved further.

- *Selection committee members think the research idea has a too limited role in the pre-proposal phase.* The Talent Programme focuses on talent development. However, both applicants and selection committee members state that omitting a substantive review of the research idea within the pre-proposal phase makes it difficult to compare the scientific potential and innovation of the proposals.
- *Selection committee members are largely positive about interviews as part of the assessment procedure, despite the higher workload and risk of bias.* Many selection committee members find that interviews provide extra information and strengthen their confidence in the procedure. On the other hand, interviews also entail extra burden and proven risks of bias.
- *Selection committees experience too little support when conducting the assessments.* Interviews and focus groups show that selection committee members experience insufficient support during the assessments.
- *The existing feedback process provides insufficient guidance for applicants to refine subsequent proposals.* Most rejected applicants describe the feedback after a rejection as brief and vague, leaving them with insufficient insight into the decision or clear guidance on how to improve.
- *Changing the objective and target group has had hardly any influence on the assessment of candidates.* According to selection committee members, these changes have had a limited effect on their assessments and have not fundamentally changed the assessment criteria. However, for many grant advisers, the intended target group of the Talent Programme has become less clear due to these changes.

Conclusions on the effectiveness of implemented changes

NWO has succeeded in improving the processes surrounding proposals and assessment in various ways. The most important internal developments of NWO in this area are the adjustment of the objective and target group description, the introduction of the two-phase structure, the evidence-based CV (EBCV), the embedding guarantee and the partial elimination of interviews. These changes show that NWO has actively attempted to align the programme with external developments regarding talent development, workload, Recognition and Rewards principles, and the feasibility of the assessment procedure. Most of these changes constitute an improvement of the procedure.

- *Changing the target group and objectives for the Veni, Vidi and Vici grants is largely perceived as positive, but it does have downsides.* Respondents appreciate that the Talent Programme focuses more explicitly on supporting talented researchers. However, this change fuels the perception that applicants who do not receive a grant are seen as 'not talented', which potentially contributes to the high prestige of a Talent Programme grant.
- *The two-phase structure is an excellent addition to the Talent Programme with significant efficiency gains.* The two-phase structure reduces the time investment for developing full proposals and increases the success rate in the second phase.
- *The EBCV had a complicated start but is now considered an improvement that enables scientists to demonstrate a variety of qualities and profiles. In addition, the EBCV is sufficient to assess applicants.* Although selection committee members initially struggled to use the EBCV, they now report that it suffices to effectively assess the candidates' characteristics as intended. This has improved during the evaluation period and applies to all domains. The EBCV format contributes to a wider range of academic profiles during assessments—such as non-linear careers and non-traditional scientific outputs—making them visible and discussable..
- *The extension clause and its expansion are assessed as predominantly positive by all those involved.* Applicants, selection committee members and involved staff are generally very content with both the existence of the extension clause and its expansion.

The embedding guarantee, however, does not have the intended effect and induces negative side effects. The embedding guarantee was intended to reduce workload and the number of non-viable applications. Both goals have not been achieved. The survey and interviews show that some research institutes and departments are more generous in issuing embedding guarantees. Consequently, the embedding guarantee may introduce inequality regarding submission opportunities - a significant negative side effect.

We see hardly any differences between the NWO domains for all implemented changes, and across the entire programme. With a few exceptions, such as the type of outputs in the EBCV, there is no difference between domains in the extent to which the objectives of the Talent Programme are achieved.

Conclusions on the efficiency of the Talent Programme

The Talent Program is efficient at the macro level. This is the case when we see the resources deployed in relation to the system function that the programme fulfils. Stakeholders widely consider the programme indispensable, as it provides one of the few routes for personal and curiosity-driven research funding in the Netherlands.

In addition, the Talent Programme and the changes implemented have brought about a number of positive side effects. For instance, the personal and curiosity-driven nature of the programme has strengthened the position of individual researchers. In addition, especially the EBCV has made discussions about Recognition and Rewards within research institutes more concrete.

However, there are also negative side effects. The Talent Programme entails a high volume of proposals and heavy workload for applicants, selection committee members, research institutes and NWO. In addition, the programme has a strong prestige and status effect: receiving a grant serves as a quality stamp and has a continuing effect on follow-up funding, promotions, permanent appointments and research institutes' human resources policy.

The Talent Programme also still faces a number of efficiency challenges at implementation level and micro level.

- *The implementation of the Talent Programme entails a heavy workload for NWO.* For NWO, the programme is very complex and time-consuming to implement.
- *The ratio between outputs of the Talent Programme and costs has improved but remains a point of concern.* On an annual basis, between approximately 202 and 324 full-time FTE of researchers goes into the process of arriving at 325 to 430 awarded grants, with which 160 to 260 million euros of research funding is distributed. The relative intensity of this process must be regarded within the academic context in which extensive peer review is customary and of great value, both for reviewer and applicant. The ratio between outputs and costs has also improved in recent years thanks to the introduction of the two-phase structure.
- *The workload for selection committee members is high.* The heavy workload for selection committee members has been a point of attention for some time. This remains high despite the changes in the assessment procedure. At the same time, selection committee members indicate that they do not find the time investment in itself problematic, because the Talent Programme is seen as an essential part of the Dutch research system.
- *The pressure on researchers to submit a proposal remains a point of attention.* This pressure has been present for some time and is still present, due to the significant career benefits and the limited amount of research funding.
- *There are particular concerns about displacement and the high number of applications for the Veni programme.* All respondents in our interviews, focus groups, and surveys are highly critical of the tight deadline for submitting a Veni proposal. In addition, applicants and grant advisers struggle most with the intended target group.

Recommendations

This subsection discusses the recommendations to NWO to further increase the effectiveness and efficiency of the Talent Programme in the future. Our key recommendation to NWO is:

Maintain the Talent Programme as a personal funding scheme for curiosity-driven research. It is precisely the personal and curiosity-driven nature that has added value for those involved, because it offers researchers room for innovative research lines, research group development and new collaborations. Without the Talent Programme, Dutch research risks falling behind in innovation and creativity. In this regard, ongoing refinement

of the proposal and assessment procedure is recommended. We also recommend to realise further efficiency gains, as well as to position the programme more explicitly within the broader scientific and funding system.

To improve efficiency, positioning, and the proposal and assessment procedure, we identified the following options for action. Some options for action may counteract each other. This requires an informed decision and transparency about the pros and cons of options for action if NWO or other parties in the research system choose to adopt them.

Options for action to further refine the proposal and assessment procedure

Make the target group definition more operational and better applicable for applicants, subsidy advisers, and selection committee members. The current target group descriptions provide direction, but in practice still offer insufficient support to determine whether a researcher is ready to submit a proposal.

Enhance the guidance and support provided to selection committees. NWO can do this by framing assessment criteria and their weighting more explicitly and consistently, and by more actively supporting the committees during the assessment procedure.

Enable applicants and other professionals of research institutes to learn from non-funded proposals. Consider providing more personalised, phase-specific feedback. Respondents frequently note that current feedback is too general to help them effectively improve their proposals.

Maintain the two-phase structure but recalibrate the weighting in the pre-proposal phase so that the research idea can carry more weight and be considered more explicitly. This may help to reduce some of the perceived arbitrariness in the first phase, without completely losing the efficiency gains of a limited elaboration in the pre-proposal phase.

Maintain the current EBCV and refrain from further substantive changes, to promote stability in the assessment procedure. Although respondents were critical in the past about the introduction and further development of the narrative CV, the EBCV is now widely supported and more likely to be experienced as an improvement over the traditional CV.

Abolish the embedding guarantee or redesign it significantly. In its current form, the measure is not effective and is accompanied by substantial side effects, including unequal application between research institutes and risks of unequal opportunities for researchers.

Make an explicit, programme-wide decision about the role of interviews. Interviews as part of the assessment procedure have advantages and disadvantages. Selection committee members value interviews, especially in times of generative AI, because interviews can help them to form a more complete picture of the proposal and the applicant. At the same time, interviews entail additional workload and risks of bias and will therefore make the assessment less efficient.

Options for action to further improve efficiency

Invest in robust data management and a learning evaluation cycle in which institutional burdens also become visible. This allows NWO to monitor the effects of procedural changes more quickly and reliably.

Explore harmonisation of formats, instructions and process steps across grants and domains, and subsequently consider calls without domain classification. Given the limited differences between NWO domains in terms of effectiveness, phasing out domain-specific calls warrants consideration. Such central implementation does not fit well into the current organisational structure of NWO and is therefore a relatively radical option. An intermediate step with less impact is to further harmonise the proposal procedure.

Increase the budgets of the current grants in the Talent Programme. According to most respondents, the amount of funding per grant is no longer sufficient. NWO can mitigate this with an increase equal to inflation or to the increase in salary costs of academic staff.

Given the high effectiveness in combination with room for efficiency gains, it is worth considering spending more financial resources on the Talent Programme. This requires either more resources for NWO, or a shift within the current NWO budget. This means this option for action may come at the expense of other funding lines and instruments of NWO, which are also effective.

Extend the submission deadline for the Veni. Interviews and focus groups show that the application pressure for Veni applicants is high as a result of the short timeframe in which they can submit their proposals.

At the same time, maintain non-overlapping submission deadlines for being allowed to submit a Veni, Vidi, or Vici proposal, expressed in number of years after having obtained a PhD. To prevent competition between researchers in different career stages and to safeguard the target groups of the individual grants, it is not advisable to introduce overlap in submission deadlines, as is done with the ERC.

Be cautious with harsh submission restrictions, especially at an institutional level. There is limited support for a submission limit at an institutional level, and such measures carry risks of inequality of opportunity, particularly for researchers with less institutional support.

Collaborate with stakeholders to secure more sustainable funding for both personal and curiosity-driven research projects. An option that can bring calm and continuity to the system involves converting the budget or part of the budget into rolling grants. Rolling grants can provide more continuity, less application pressure, and more stable funding, because resources are continuously allocated to researchers with a proven track record. At the same time, there are risks: the option is difficult to implement, for example due to dependence on universities and a fixed budget, and it may lead to research resources becoming fragmented.

Explore a partial lottery system, starting with a carefully designed pilot phase. A form of partial lottery, possibly within a pre-defined quality bandwidth or threshold, can contribute to a more efficient, fairer, and more transparent decision-making process: not because randomness disappears, but because it entails explicit acknowledgement of the difficulty of distinguishing between high-quality proposals. Partial lottery may also potentially slightly lower the high prestige of the Talent Programme.

Options for positioning within the science and funding system

Position the Talent Programme explicitly as one route within a broader system of talent development and research funding. NWO can make it more explicit in its communications that the Talent Programme is an important, but not an exclusive, route for personal and curiosity-driven research.

Use Recognition and Rewards as a framework to change the system position of the Talent Programme. NWO is not responsible for human resources at universities, but in practice the outcomes of the Talent Programme do have a strong impact on staff-related decisions at universities. Consequently, within the context of Recognition and Rewards, NWO, the Ministry of Education, Culture and Science and universities must align their career policies regarding the appropriate use of Talent Programme grants.

Strengthen the complementarity between the Talent Programme, the Open Competition, ERC grants and institutional career instruments. The Talent Programme mainly has added value as a national route for personal and curiosity-driven research funding in different career stages.

Let the Ministry of Education, Culture and Science, NWO and universities jointly consider whether the current funding mix offers sufficient scope for curiosity-driven research and early career development. If the Talent Programme remains the most important or only visible route for many researchers towards autonomy, follow-up funding and employment security, prestige and application pressure will remain high.

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