



NVAO • THE NETHERLANDS

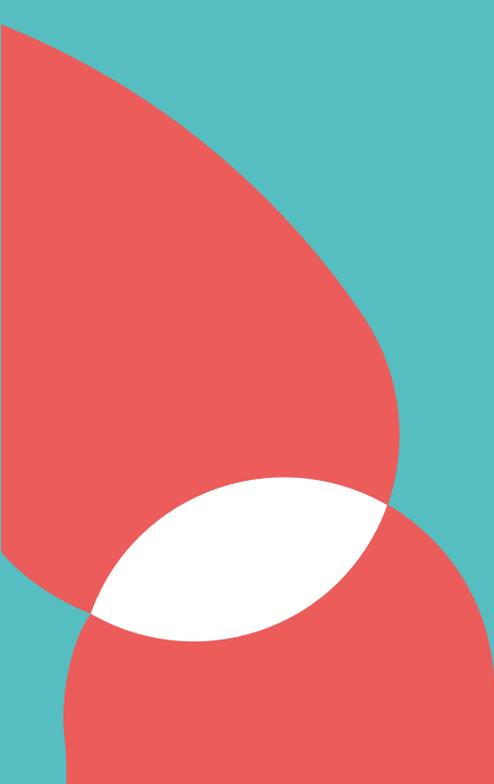
## **INITIAL ACCREDITATION**

WO-BACHELOR DATA SCIENCE FOR GLOBAL  
CHALLENGES

Wageningen University & Research

SUMMARY REPORT

4 DECEMBER 2024



## 1 Peer Review

The quality of a new programme is assessed by means of peer review. A panel of independent peers including a student reviews the plans during a site visit to the institution. A discussion amongst peer experts forms the basis for the panel's final judgement and advisory report. The focus is on the curriculum, the teaching and learning environment, and student assessment.

The Accreditation Organisation of the Netherlands and Flanders (NVAO) makes a formal decision on the programme's quality based on the outcome of the peer review. This decision can be positive, conditionally positive or negative. If the decision is positive, with or without conditions, the institution may proceed to offer the new programme. Graduates of the programme will then be entitled to receive a legally accredited degree.

This summary report highlights the key outcomes of the peer review. A full report with more details including the panel's findings and analysis is also available. NVAO bases its accreditation decision on this more detailed report.

Both the full and summary reports of peer reviews are published on NVAO's website [www.nvaio.net](http://www.nvaio.net). There can also find more information about NVAO and peer reviews of new programmes.

## 2 Panel

### Peer experts

- **Katherine Evans (*chair*)**, Associate Professor - Ethics of Cognitive Science & AI Ethics / Advisor IEEE Standards Association, Sorbonne University, Paris;
- **Drs. Bart Wezeman**, Applied statistician and manager regional and spatial statistics, CBS (Statistics Netherlands);
- **Dr. ir. Cynthia Liem**, Associate Professor, Faculty of Electrical Engineering, Mathematics and Computer Science, Delft University of Technology;
- **Prof. dr. Vera van Noort**, professor BOF Faculty of Bioscience Engineering KU Leuven;
- **Vincent van der Wolf**, (*student*), student at the Master programme Population Health Management at Leiden University.

### Assisting staff

- Ikrame Faris, secretary
- Reina Louw, NVAO policy advisor and process coordinator

### Site visit

Wageningen, November, 6 2024

### 3 Outcome

The NVAO approved panel reached a conditionally positive conclusion regarding the quality of the bachelor programme Data Science for Global Challenges offered by Wageningen University & Research. The programme meets standard 1 of the NVAO framework and partially meets standards 2 and 3.

The bachelor programme Data Science for Global Challenges at Wageningen University trains students to integrate data science with life sciences to address global challenges in agri-food, health and the environment. Its graduate profile aims to develop 'bridge-builders' who can combine expertise in these fields to create fair and sustainable solutions. Ethical, legal and societal aspects are incorporated to ensure responsible practice. The panel commends the programme's clear vision, interdisciplinary approach and alignment with labour market needs. It also establishes that the intended learning outcomes align with bachelor-level qualifications. The panel recommends to safeguard continued and sustainable involvement of the professional field, for example through an External Advisory Committee.

The panel praises the programme for its interdisciplinary approach, the quality of the teaching staff and its strong focus on integrating data science and life sciences, providing students with a comprehensive foundation to address complex challenges. The teaching staff are particularly commended for their expertise and commitment, which greatly enhance the programme's quality and appeal. However, the panel also identifies key areas for improvement in the curriculum. The integration of ethical, legal and societal aspects (ELSA) is insufficient, which the panel finds concerning. Additionally, the development of soft skills, such as communication skills, which are crucial for bridge-builders, is not explicitly addressed within the curriculum. The panel also expressed concerns on the feasibility of the programme, particularly for students without a strong background in Mathematics and Biology. The panel fears that these students will require additional retakes and face greater difficulties in passing mathematics-oriented courses, potentially leading to longer study durations. To address these issues, the panel sets two conditions. First, the programme must explicitly integrate ethical, legal, and societal aspects (ELSA), as well as soft skills such as communication, throughout the curriculum. Second, it must develop and implement a strategy to address deficiencies in Mathematics and/or Biology to ensure equal opportunities for all students. The learning objectives must be achievable for all admitted students within the standard study duration and with a reasonable study effort.

While the overall assessment framework of Wageningen University is solid, the panel found that its application to the bachelor programme is lacking in some areas. The university's assessment policy is clear and aligns with key principles like constructive alignment, but the programme has not yet tailored its rubrics and assessment methods to address aspects such as interdisciplinary learning, ELSA and bridge-building skills, including communication. As a result, the panel sets the condition to specify how these elements are assessed.

### 4 Commendations

The programme is commended for the following features of good practice:

1. Interdisciplinary approach – The programme's clear interdisciplinary focus, combining data science with life sciences to address global challenges, is highly commendable. The integration of diverse academic fields supports the development of well-rounded professionals capable of tackling complex societal issues.
2. Graduate profile – The programme's emphasis on developing 'bridge-builders' who can integrate knowledge across domains is a valuable approach for producing graduates equipped to create fair and

sustainable solutions in agri-food, health and the environment. This vision aligns well with current and future labour market needs.

3. Quality of teaching staff – The programme benefits from a highly qualified and dedicated teaching staff, with members drawn from various academic disciplines. Their enthusiasm and expertise are pivotal in creating an engaging and supportive learning environment that fosters student success.

4. Role study advisor – The programme offers comprehensive support through well-trained study advisors who provide essential guidance, helping students set personal goals, navigate the curriculum and achieving academic success. This holistic support is a key strength of the programme.

5. Drawing on Wageningen University's expertise – The programme effectively leverages and utilises the university's academic strengths, established structures like the Examining Board and the Programme Committee, and the expertise of its dedicated teaching staff to enhance the learning experience for students.

## 5 Recommendations

The panel recommends several follow-up actions to improve the programme further. These recommendations do not detract from the conditionally positive assessment of the programme's quality.

1. Involvement of the professional field – Safeguard continued and sustainable involvement of the professional field, , to provide regular input and keep the programme aligned with labour market needs and demands.

2. Monitor workload study advisors – Monitor the workload of study advisors to ensure they can continue providing essential guidance without becoming overburdened. As the programme includes intensive support, it is crucial to maintain a manageable workload for advisors to effectively assist students with their academic and personal development.

3. Clarify programme expectations – Ensure that prospective students clearly understand the focus of the programme on global challenges in Earth and Life Sciences. This should be verified during recruitment and matching activities to ensure that students are well-informed and know what they are committing to.

4. Monitor innovation in the field – keep updated on breakthroughs and changes in key techniques used in the application fields of the programme (e.g. health, agri-food, AI), including how these advancements can change the focus of students' research and career opportunities.

5. Contact with related programmes (peers) – keep in contact with related programmes that combine data science skills with domain-knowledge at bachelor level, such as the bachelor in Bioinformatics at Leiden University and the bachelor in Computational Social Science at the University of Amsterdam, to exchange experience and ideas to tackle specific challenges that come with an interdisciplinary bachelor programme.

## 6 What Comes Next?

NVAO grants initial accreditation to a new programme based on the panel's full report, with the accreditation being valid for up to six years. Once accredited, the new programme will adhere to NVAO's

review procedures for existing programmes. NVAO publishes the accreditation decision along with the full report and this summary report.<sup>1</sup>

Each institution has a quality assurance system, ensuring continuous follow-up actions and periodic peer-review activities. Peer reviews help the institution to improve the quality of its programmes. Progress made since the last review is considered when preparing for the next one, and the follow-up actions are included in the subsequent peer-review report. For more information, you can visit the institution's website.<sup>2</sup>

## 7 Summary in Dutch

Het panel oordeelt positief onder voorwaarden over de kwaliteit van wo-bachelor Data Science for Global Challenges van Wageningen University. Dit is de uitkomst van de kwaliteitstoets uitgevoerd door een panel van peers op verzoek van de Nederlands-Vlaamse Accreditatieorganisatie (NVAO). Voor deze beoordeling heeft het panel gesprekken gevoerd met de opleiding op 6 november 2024.

De bacheloropleiding Data Science for Global Challenges combineert data science en life sciences om grote uitdagingen op het gebied van agri-food, gezondheid en milieu aan te pakken. De opleiding richt zich op het opleiden van 'bruggenbouwers' die werken aan eerlijke en duurzame oplossingen voor deze uitdagingen. Ook ethische, juridische en maatschappelijke aspecten (ELSA) zijn geïntegreerd in het programma. Het panel prijst de heldere visie van de opleiding, de interdisciplinaire benadering en de aansluiting op arbeidsmarktbehoeften. De beoogde leerresultaten zijn afgestemd op de internationale bachelorstandaarden en voldoen aan de eisen van het beroepenveld. Het panel adviseert om de betrokkenheid van het werkveld te borgen, bijvoorbeeld door een Externe Adviesraad in te stellen.

Sterke punten van de opleiding zijn de deskundigheid en betrokkenheid van het onderwijspersoneel en de integratie van data science en life sciences in het curriculum. Het panel heeft echter ook verbeterpunten geïdentificeerd. Zo ontbreekt expliciete aandacht voor ELSA en communicatieve vaardigheden in het curriculum. Ook stond de haalbaarheid voor studenten zonder sterke bèta-achtergrond ter discussie. Het panel stelt voorwaarden om deze punten te adresseren: de opleiding dient ELSA en zachte vaardigheden, zoals communicatie, te integreren in het curriculum en een plan te ontwikkelen voor studenten met deficiënties in Wiskunde en/of Biologie zodat zij binnen de gestelde tijd kunnen afstuderen.

Wat betreft toetsing constateert het panel dat het universitair beleid goed is uitgewerkt, maar dat de beoordelingssystematiek beter toegespitst moet worden op de interdisciplinaire leerdoelen, ELSA en specifieke vaardigheden die nodig zijn voor de rol van 'bruggenbouwer'. Het panel stelt als voorwaarde om nader te specificeren hoe deze onderdelen worden getoetst en verwerkt zijn in beoordelingscriteria en rubrics.

Meer informatie over de NVAO-werkwijze en de toetsing van nieuwe opleidingen is te vinden op [www.nvao.net](http://www.nvao.net). Voor informatie over Wageningen Universiteit verwijzen we naar de website van de instelling.<sup>3</sup>

---

<sup>1</sup> <https://www.nvao.net/nl/besluiten>

<sup>2</sup> <https://www.wur.nl>

<sup>3</sup> <https://www.wur.nl/en.htm>



