



WAGENINGEN ENVIRONMENTAL RESEARCH

Evaluation report 2019-2022

December 2023



COLOPHON

This report was commissioned by the Executive Board of Wageningen University & Research.

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Preface

The review committee extends its appreciation to the staff and management of WENR for their excellent preparatory work. The clear review protocol and well-planned programme for the site visit were received with gratitude. The extensive self-evaluation report provided an excellent foundation for our conversations and interviews.

Our site visit took place from October 8th to October 11th, and involved both internal and external interviews. Internally, we spoke with WENR's management and employees, including senior research staff, young professionals and members of various teams and programmes. Externally, we spoke with stakeholders and clients of WENR, including representatives of national and regional authorities and partners of WENR.

We thank all interviewed staff for the open conversations and dialogues. The mix of internal and external interviews allowed us to obtain a balanced view of WENR's current performance and expectations for the future. We also thank the swift provision of additional information at our request during the site visit.

On the final day of the review, we shared our preliminary observations and recommendations

during an interactive meeting with WENR management. This was followed by a final presentation to the WUR management and WENR staff.

After an intensive three-day review, we, as a review committee, found the experience to be rewarding. We met an enthusiastic and passionate group of professionals who are committed to developing a thriving and appealing WENR. The institute has a strong scientific foundation and is known for its client- and impact-focused approach. It plays a vital role in the societal debate and at the science-policy interface.

We were asked to be critical, and even though we have a very positive view of WENR's performance and, particularly, of the staff, we endeavored to reflect on future challenges as sharply as possible and made clear recommendations. Our hope is that our conclusions and recommendations will aid the WENR management in moving forward and further strengthening the institute's position.

December 2023

J.C.M. (Han) de Wit
Chair of the committee



1. EVALUATION PROCEDURES

In 2023, the executive board of Wageningen University & Research (WUR) commissioned an evaluation of Wageningen Environmental Research (WENR), covering the 2019-2022 period. Its main aim was to assess WENR's research quality, economic and societal impact, and viability. The following chapter sets out the evaluation procedures followed by the committee.



Context and scope of the evaluation

Wageningen University & Research (WUR) is a combination of Wageningen University (WU) and Wageningen Research (WR). While WU is dedicated to academic research, education, and training, WR focuses on applied research with a broader impact, supporting innovation and policymaking. It conducts strategic research for various stakeholders, including governments, industry, and NGOs.

Alongside ECN, Deltares, Marin and TNO, WR is part of the Federation of Dutch Applied Technological Research Institutes, known as the 'TO2 Federation'. The federation is supervised by the Dutch Ministry of Economic Affairs and Climate. Its institutes form the link between knowledge and innovative impact, serving government, business and society. They help companies innovate successfully and contribute to solutions for societal challenges. Every four years, the TO2 organizations are assessed in their entirety, with sub-evaluation committees for each of the TO2 institutes, commissioned by the Ministry of Economic Affairs and Climate.

As part of their ongoing quality assurance cycle, the individual research institutes within WR undergo additional evaluations by peer review committees every four years. These evaluations are designed to continually monitor and enhance their overall performance and long-term strategic development. Wageningen Environmental Research (WENR) is one of the research institutes falling under Wageningen Research. Its evaluation was commissioned by the Executive Board of WUR as a component of the broader TO2 evaluation. The evaluation process adheres to the guidelines outlined in the Terms of Reference for WR institute assessments (see appendix 5.1).

Aims of the evaluation

The evaluation process of WENR was guided by the national protocol for TO2 evaluations.

According to this framework, the primary aims of the assessment were to evaluate:

1. the institute's (inter)national standing in terms of research quality
2. the economic and societal impact of the research
3. the overall viability of the institute

Furthermore, the committee was tasked with evaluating the institute's performance in fulfilling its statutory tasks. The committee has chosen to comprehensively integrate its findings on statutory tasks into its evaluation of the three formal criteria.

This evaluation encompasses both a retrospective analysis, focusing on past performance, and a forward-looking component, which aims to provide insights and recommendations to guide the institute's strategic direction for the future. The committee's specific mandate includes offering recommendations to support the institute's long-term strategy and development.

Composition of the committee

The executive board of WUR appointed an international evaluation committee (hereafter: 'committee') of seven external peers. This committee consisted of:

- Dr. Han de Wit (chair), strategy consultant at TAUW, the Netherlands;
- Prof. dr. Claire Chenu, research director of the Institut National de Recherche pour l'Agriculture, l'Alimentation et l'Environnement (INRAE) and consulting professor of soil science at AgroParisTech, France;
- Peter Glas MSc LLM, Deltacommissioner, the Netherlands;
- Arjen Mulder MA, head of knowledge management and learning of Solidaridad Europe, the Netherlands;

- Em. prof. Hans Mommaas, research fellow Academic Collaborative Center Governance and Management for Wellbeing, Tilburg University, the Netherlands; chair of the Netherlands Commission for Environmental Impact Assessment and chair of the Netherlands Ecological Authority, the Netherlands;
- Prof. Eeva Primmer, research director of Finnish Environment Institute, Finland;
- Prof. Annemarie van Wezel, professor of environmental ecology and scientific director of the Institute for Biodiversity and Ecosystem Dynamics (IBED) at the University of Amsterdam, the Netherlands.

For brief curricula vitae of the committee members, see appendix 5.3.

Dr. Floor Meijer was appointed independent secretary to the committee.

Arjen Mulder could not participate in the site visit due to illness.

Evaluation process

Leading up to the site visit, the committee received documentation for the evaluation, consisting of a self-evaluation report and background report. The committee also received the TO2 Protocol and Terms of Reference for the evaluation. The committee was asked to study the documentation and formulate preliminary findings and questions.

The committee first met online on 21 September 2023 to discuss initial impressions. During this meeting, the committee also addressed

procedural matters and agreed on a working method. The WENR Management Board joined the preliminary committee meeting for the final half hour to answer some initial questions.

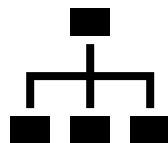
The site visit took place from 9-11 October 2023. It was preceded on 8 October by a meeting with the Board of Directors, during which they introduced the organizational structure and governance of WENR. This was followed by an internal committee meeting in which the three evaluation criteria were assigned to teams of two committee members. These teams would take the lead in preparing the evaluation of their respective criteria, with additional support from the full committee. On 9 and 10 October, the committee met with the vice-president of WUR and the WENR Management Board, followed by meetings with a cross-section of junior, mid-career, and senior researchers from WENR. Furthermore, the committee spoke with the library's information specialist, management of the Statutory Research Task ("WOT") unit, and team and programme leaders. The committee also had dinner with a group of WENR stakeholders. After a final meeting with the WENR Management Board on October 11, the committee finalized its assessment. The site visit concluded with a plenary presentation of findings and recommendations. The schedule for the site visit is included in appendix 5.4.

In the days after the site visit, the committee completed its evaluation report, circulating the evaluation texts to all committee members for comments. Subsequently, the draft report was presented to WENR for factual corrections and comments. After considering this feedback, the report was finalized and presented to the executive board of WUR on 13 December 2023.



2. INTRODUCTION

This introductory chapter offers some insights into WENR's position within Wageningen University & Research. It outlines the institute's governance structure, its overarching mission, and the diverse sources of funding that sustain its operations.



Position, mission and funding of WENR

Institutional embedding and governance

WENR is a Wageningen Research institute, part of the Environmental Sciences Group (ESG). ESG consists of the Wageningen University Department of Environmental Sciences (DES, comprising 17 chair groups and approximately 600 FTE) and Wageningen Environmental Research (structured in 11 teams with a total of 330 FTE).

While DES primarily focuses on fundamental knowledge development and (under)graduate training, WENR specializes in strategic knowledge creation, offering scenarios and perspectives, and translating fundamental knowledge to insights applicable to policy and practice. WENR is a recognized source of scientific knowledge that aids decision-makers through applied research.

ESG includes five strategic research programmes that are organized around comprehensive themes and serve to connect its domain expertise and focus its scientific competence and excellence on global challenges, thus enhancing the inter- and transdisciplinary ways of working. Subtopics are defined for each programme. The five agenda-setting ESG programmes, are:

1. Sustainable Land Use
2. Biodiverse Environment
3. Sustainable Water Management
4. Green Climate Solutions
5. Green Cities

ESG is governed by a management board comprising the managing director and the director of operations, who are responsible for research, staff, facilities, and finances, at both DES and WENR. WENR has a relatively simple matrix structure consisting of eleven teams, organized around specific disciplinary fields, five ESG programmes, and the management of statutory tasks. The teams are each led by a team leader accountable for various aspects, including personnel management, capacity

planning, and project management.

Programmes are headed by programme leaders, who do not have dedicated funding streams. Regular meetings and consultations are held to discuss various aspects, from strategy development to financial and HR monitoring. An annual management review assesses goal achievement and sets new objectives.

In 2021, WENR's programme structure was evaluated, resulting in role adjustments. An evaluation of the future structure commenced in late 2022, with a proposal for organizational changes put forward in the autumn of 2023. While an overview of the proposed changes was presented to the committee, evaluating the new structure was not within the committee's mandate. The committee did observe that the proposed changes to the organization have the potential to align with its recommendations, with some points of attention.

Mission and strategy

The WENR self-evaluation report describes WUR's mission as "to explore the potential of nature to Improve the quality of life". The Environmental Sciences Group (ESG), including WENR, is said to contribute to this mission by focusing on evidence-based, nature-based, interdisciplinary solutions for environmental and societal challenges. WENR's specific contribution is to develop scientific insights in areas like soil, water, atmosphere, biodiversity, land use, and climate and apply them collaboratively with stakeholders to create sustainable, green, inclusive environments and a just society.

To fulfill its mission, WENR places a strong emphasis on building from a robust scientific foundation, collaborating with stakeholders, aligning research with societal requirements, adopting a programmatic approach, and maintaining a visible presence. For its research pursuits, it has adopted a T-shaped model, which involves deep expertise or knowledge in a

specific field or discipline (the vertical bar of the 'T') and active collaboration across disciplines, with experts from diverse backgrounds applying knowledge to address system-level societal challenges with multidisciplinary and transdisciplinary approaches (the horizontal bar of the 'T').

Funding

WENR relies on various sources of funding to support its research activities. Most importantly, the institute secures income through policy support research (*Beleidsondersteunend Onderzoek*, 'BO'), commissioned by stakeholders, primarily the Dutch Ministry of Agriculture, Nature and Food Quality (*Landbouw, Natuur en Voedselkwaliteit*, LNV). In 2022, this amounted to M€10.3. The institute also gets its share from the ministry funded

WUR-broad Knowledge Base (KB) programmes. In combination with funding from WUR investment themes this amounts to M€5.3. Notably, this concerns funding which is not focused on specific stakeholders or projects. Moreover, researchers at the institute are engaged in statutory tasks commissioned by the government (M€6.7). Additionally, there are bilateral research contracts (M€6.3), and the institute takes part in EU projects and other public research (3.4 + 9.6 M€). WENR's focus on private-public partnerships in top sectors is less pronounced compared to some WR counterparts and to other TO2 institutions.



3. EVALUATION

In this chapter, the committee presents its general observations on WENR, followed by specific findings and recommendations on the quality, societal and economic impact, and overall viability of WENR. Findings on statutory tasks are presented as part of the quality paragraph. In adherence to the evaluation protocol, the committee has assigned numerical scores. Their meaning can be found in appendix 5.2.



General findings

Overall, the committee has a positive outlook on WENR's performance in the reporting period of 2019 to 2023 and on its future prospects. In the past four years, WENR's economic and financial status has remained healthy, with an increase in turnover and a positive net income. Despite the Covid pandemic, the institute's market position has remained unaffected, and the knowledge generated by WENR is societally relevant.

In the subsequent sections of the report, the committee identifies several issues and puts forth recommendations. It is important to view these recommendations as points for reflection rather than an urgent call for organizational interventions. The committee believes that the key to success in the coming years lies not in the structure of the organization, but in the capacity to act, experiment comprehensively and dynamically expand successful activities in anticipation of the complex transitional environmental problems ahead. Embrace an agile "fail fast – learn fast" mentality. Give younger people the opportunity to develop and utilize the experience of older staff to support and coach them.

The committee notes that the domain and expertise of WENR are in high demand. Environmental issues such as climate change, biodiversity, water crises, and sustainable development goals are being recognized as critical for society and are increasingly on the agendas of private sector actors and policy makers. Demand is growing and evolving, with a focus not only on scientific knowledge and evidence as such, but also on issues related to changes in the science-policy-society interface, interdisciplinary developments, and transitions. WENR has thus far successfully and proactively responded to these changes. The current challenge is to be prepared for the next phase. Given the high demand and thus promising market prospects, combined with the challenging labour market and demographic

situation, WENR must focus and make strategic decisions. The institute is aware of this and is taking steps to address these challenges.

The committee observes a lack of cohesive strategy alignment between WU and WR in the field of environmental sciences, which is highlighted by the absence of a comprehensive strategic storyline that addresses the different but aligned knowledge interests and priorities. There are significant opportunities to enhance the integration of fundamental science, applied science, and science-for-impact within WUR as a whole, both horizontally through interdisciplinary collaboration and vertically through deep expertise. The T-shaped science model's horizontal and vertical bars require attention and improvement to foster a more integrated and effective research ecosystem. This report will revisit and elaborate on this aspect in subsequent sections, including the committee's recommendations.

WENR has excellent staff members who are committed, involved, and aware of the various challenges ahead. The committee's initial positive impression, derived from the self-evaluation report, was further solidified during the site visit through engaging interactions and discussions with the management and staff. They are aware of opportunities and challenges and are willing and motivated to contribute.

The previous evaluation of 2019 emphasized the challenges related to the composition of WENR's staff. Age distribution is a point of attention, with a significant portion of the staff approaching retirement. Steps have been taken to attract younger staff, and their number has indeed increased. However, the distribution in terms of age and experience remains imbalanced, with a relatively low percentage of mid-career staff. Retaining younger staff and providing opportunities for faster progression to more senior roles is a challenge, and a prerequisite for the viability of WENR.

Quality

Research topics

WENR's publications cover 18 different research fields, with main approaches being natural science-driven. Notably, 50% of publications are concentrated in the field of Environment/Ecology. An additional 42% are distributed across research fields such as Agricultural Sciences, Plant & Animal Sciences, Geosciences, and Social Sciences (general).

The interviews made clear that a high urgency for more integrative approaches is felt within WENR and amongst its stakeholders. To address this, the committee recommends making strategic investments in hiring multidisciplinary and transdisciplinary scientists. Additionally, WENR is encouraged to establish clear guidelines for publishing scientific articles on high-impact policy work and transition processes, with an emphasis on publications in high-impact journals like 'Nature sustainability', 'People and Nature', 'Global Environmental Change', and 'Ecosystem Services'.

The committee was surprised that, as a data-driven organization, data science as such is not explicated as a topic of research. It advises to explicate the research and development work on data science, artificial intelligence, machine learning and digital twinning. All these fields are highly relevant to modeling, which is a crucial activity at WENR.

During discussions, several scientific topics emerged as additional significant areas of interest, including 'Just Transitions', 'Transition studies', 'Participatory research', 'Action research', 'Accelerating Implementation of Nature-Based Solutions', 'Nature and Society', and the 'Combination of Long-Term Vision and Short-Term Action'. These integrative approaches warrant special attention and further systematic exploration in WENR's research activities.

Relevance

As stated above, society, on both national and international scales, has a substantial demand for the science, nature-based solutions, and integrated approaches that WENR provides. The institute's science, knowledge, and assets are highly relevant, sought after and appreciated by society in a broad sense, including policymakers, public end-users and private companies at the national as well as the EU (and international) scale. In line with this, the committee sees an urgent demand for more comprehensive multi- and transdisciplinary research efforts, also spanning the boundaries between the natural and social sciences. The committee would therefore welcome an initiative of WENR to engage in a fundamental debate at corporate WUR level about the prioritization of KB budget with the aim that it should reflect the dynamic environmental landscape and the need to invest in the solid scientific basis for applications in policies and society.

Quality and quantity of outputs

WENR's scientific publications demonstrate excellent scientific impact when compared to those of other players in the field. A benchmark analysis reveals that WENR consistently achieves a higher Field-Weighted Citation Index (FCWI) than its international counterparts. In the reporting period, WENR produced 960 academic publications, with an impressive FWCI of 2.80, which represents a slight increase from the previous period. An impressive 29% of these publications were among the top 10% of most-cited works, while 5% were in the top 1%, which is an outstanding accomplishment. On average, 71% of peer-reviewed articles are open access.

Although the work is of exceptional quality, the committee notes that the volume of scientific publications is relatively modest, amounting to approximately 0.8 publications per Full-Time Equivalent (FTE) per year. Furthermore, there appears to be a concentration of these publications among specific researchers. WENR

acknowledges that the 2019 recommendation to involve more staff in publishing has not yet been successfully addressed. Moreover, the committee notes that some emerging and more integrative fields of research are underrepresented in the publications. The committee suggests that WENR prioritizes rectifying this in the upcoming period. In comparison to the previous reporting period, there has been a slight decrease in the number of refereed articles published, possibly due to retirements of senior staff.

It is also pertinent to mention that a significant portion of projects produce only so-called 'grey' WENR reports in Dutch. These are not subjected to peer review and not officially published in a scientific journal. During the 2019-2022 assessment period, WENR issued 1,141 reports presenting the outcomes of their studies to clients and a broader audience. Consequently, the committee believes that there is a significant opportunity to increase the number of publications that are accessible to international audiences. This can be achieved by selecting concise manuscripts (with a possible Dutch summary) as project output rather than grey Dutch-language reports.

In general, more attention should be paid to the role of scientific publications across WENR. This effort is needed particularly in more novel, and highly successful topics such as Green Cities and Green Climate Solutions, which will contribute to the international status of WENR. It is important to encourage the participation of promising young scientists in these efforts, as it presents both a challenge and an opportunity for them.

Beyond traditional scientific publications, the committee recognizes the significance of alternative forms of scholarly output, encompassing websites, models, datasets, infographics, and media channels. However, the committee underscores that these alternative outlets should be underpinned by scientific publications to reinforce their validity and credibility. In this context, the committee encourages WENR to develop and implement

quality procedures to reinforce the connection between these forms of output and traditional scientific publications.

Research infrastructure

Apart from laboratories, WENR's long-term data series and geo-information are considered crucial research resources. Models and datasets play a significant role in WENR research conducted for stakeholders (including Statutory Research Tasks) and in policy advice. These resources have a rich history of development and a proven value. To enhance accessibility, data portals and services have been set up.

While the self-evaluation report acknowledges the role of physical research facilities, the committee observed that during the site visit, no one emphasized (integrated) models and data as a crucial aspect of the institute's current operations or its future plans. The same observation applies, to a lesser extent, to the ICT infrastructure, particularly in the context of handling critical data and models. The committee encourages the application of quality assurance and open science principles to all models and datasets, promoting transparency and accessibility. Furthermore, integration of these models should be enhanced to facilitate comprehensive multicriteria assessments.

WENR is acknowledged for its role in housing or participating in relevant research infrastructure, especially for longstanding issues. Nevertheless, there appears to be limited investment in research infrastructure for emerging topics. The committee therefore encourages WENR to develop a plan to address investments in research infrastructure and leverage available funding opportunities. This extends to areas like living labs (related to green cities or sustainable land management) and automated sensor-based biodiversity monitoring, among others.

Research prioritization and scientific collaboration

Priority-setting for research development is currently organized bottom-up, which the committee appreciates. However, senior

scientists are not used as the 'thought leaders' they could potentially be. The establishment of an internal Science Advisory Board is recommended to strengthen the collaboration and integration within WENR and to further reinforce connections with WU. Such a board would play a pivotal role in ensuring an even stronger focus on scientific quality within WENR, identifying emerging scientific trends, and actively contributing to agenda-setting within both WENR and ESG as a whole.

The committee noted significant variations in the academic connections established by different teams, with some having multiple endowed professors and PhDs, while others have few or none. The committee feels that investments in academic collaborations, both within WUR and with other relevant academic partners, would be helpful for scientific development, especially for those teams with few academic links. This will in turn also benefit the international visibility of the work being done, and the recruitment of staff.

Statutory tasks

In the evaluation, the committee gave special attention to WOT (*Wettelijke Onderzoekstaken*, or Statutory Research Tasks). As set out in the 'WOT statute', Wageningen Research supports the Dutch government when implementing laws and regulations by conducting statutory research tasks. WENR provides research capacity for two (of six) WOT units within Wageningen Research: (1) Nature & Environment (N&M, embedded within WENR) and (2) the Centre for Genetic Resources, the Netherlands (CGN).

The committee acknowledges the importance of statutory research tasks in WENR, which involve crucial research and reporting duties. WOT has the potential to bridge the gap between scientific knowledge production and policy development, yet it is worth noting that the Ministry of Agriculture, Nature and Food Quality primarily funds WOT's operational aspects, which are demand driven. The funding only partly covers the strategic allocation of

resources for innovation in new scientific insights or technologies.

The committee finds that the relationship between WOT and other components of WENR is one-sided, with statutory research tasks being seen as soliciting and harvesting the needed competences, but not contributing to defining research needs, including topics and methodologies, nor to the institute's overall strategy. To enhance the synergy between WOT and other parts of WENR, a more collaborative and reciprocal approach is recommended. The committee suggests that WOT should receive explicit attention and a designated place in the organizational setup.

Score: good (3-4)

Remarks and recommendations

According to the protocol, the committee assessed the scientific quality by considering the past performance. The quality of the scientific output remains very good. However, the committee has rated the quality as 'good' rather than 'very good' due to the following aspects:

- There seems to be a concentration of publications among specific researchers. Similar to the previous period, there is a need for WENR to involve more staff in publishing to ensure vitality.
- The scientific contribution was mainly focused on the field of environment and ecology. The committee believes that WENR should consider (and should have considered) expanding its scope. WENR has a significant impact with more integrated studies. These integrative approaches require special attention and further systematic exploration in WENR's research activities. The same applies to data science as a research topic in a data and information-driven organization.

Recommendations

1. Invest in scientific publications and a broader base of authors, especially for

- the newer and more integrative research topics. These are essential for quality control, legitimacy and for the career development of young employees. Budget/time should be more clearly allocated to achieving this. As standard practice, negotiate with commissioning partners to include the opportunity to prepare academic manuscripts (where helpful with a Dutch summary) instead of grey reports in project proposals and contracts.
2. Develop research infrastructure for the newer themes (e.g., green cities, NBS climate solutions), as is already there for more longstanding traditions. Such research infrastructure can encompass models, datasets, pilot facilities, field labs etc. There are ample possibilities for financing such infrastructure (FTO, GWI, ESFRI,..), and these could also be connected to existing research infrastructures.
 3. Implement quality assurance and open science policies pertaining to all models and datasets. Also, the committee encourages further integration of these models.
 4. Invest more in academic links (endowed professors) and PhDs throughout the various teams.
 5. Establish an internal scientific advisory committee with key senior scientists ('thought leaders') with regards to attention to overall scientific quality and to advise the WENR management on strategic programming and on scientific career development.

Societal and economic impact

Meeting societal demand

WENR's impact ambition involves conducting practice-oriented research and generating state-of-the-art environmental knowledge tailored to societal needs to achieve sustainable living from local to global. In the review period, WENR aimed to enhance its societal connections and establish itself as an institute capable of setting the agenda, actively participating in societal debates, and effectively sharing its research findings. To achieve this, the institute redeveloped its communication strategy to encourage a proactive approach, focusing on new, underexposed, and impactful topics that align with its strategic themes and contribute to informed political and societal discussions. These include issues of nitrogen, spatial planning, healthy soils, greener cities, better water quality, the water-food-nexus, and climate-smart forests.

To the committee's satisfaction, the institute recognizes the importance of adapting to contemporary demands for publication in more comprehensive and visual formats, such as brochures, essays, story maps, visuals, and infographics.

WENR has successfully capitalized on the high societal demand for its research by contributing to policy development and evaluation, as well as through collaborative engagements with stakeholders, including policymakers, cities, and landowners. In the committee's opinion, WENR's commitment to impactful initiatives positions it as a societal sustainability transition trailblazer.

During the review period, substantial investments were made in producing impactful research. A notable flagship project is NL 2120. This initiative developed by WENR in collaboration with WUR and other parties envisions a nature-based blue/green future for the Netherlands by 2120, addressing climate and biodiversity challenges. It has gained

substantial attention, inspiring regional, national and international stakeholders, leading to significant investment and recognition, including the WUR Impact Award in 2023.

The committee acknowledges the significant challenge of staying ahead of evolving knowledge, policy, and societal demands, especially amidst ongoing and uncertain shifts in knowledge requirements. To meet this challenge, WENR must be ready to address more cross-cutting questions and comprehensive knowledge needs while also critically evaluating existing knowledge bases. This entails considering what the next-level questions will be, understanding the current transitional phase, identifying pertinent integrated questions and approaches, and ensuring the reliability of knowledge. Expanding and iterating across 'what', 'why' and 'how' questions will be necessary. Importantly, this work requires active leadership.

Integrated approaches

Stakeholders appreciate WENR as a reliable and continuous knowledge partner in the domains of nature, agriculture and food. In a customer satisfaction survey, respondents evaluated WENR with an average of 8.0 (on a 0-10 scale). Notably, the committee established that WENR's capacity to combine academic and applied work is regarded as one of its strengths. From its conversations with stakeholders, the committee also noted a growing demand for integrated solutions – to the degree that these expectations need to be managed. In the committee's opinion, there is potential to improve impact and develop feasible integrated solutions through collaboration and co-creation with private and public sector actors. Integrated approaches are particularly needed for nature-based climate adaptation and mitigation, resilience for food issues where nature and agriculture interact with e.g., water quantity and quality, renewable energy production (e.g., biomass), emissions (nitrogen, carbon) and

health. The design of such approaches should also include their scientific assessment, to lay the analytical basis for future activities seeking societal impact.

WENR acknowledges that addressing complex, multifaceted issues necessitates collaboration within the institute itself, within WUR and with other knowledge producers. Nonetheless, the committee notes the necessity of clarifying the connections (and differences) between WUR-level strategies and WENR-level strategic developments, embedded within their respective knowledge-strategic storylines. In addition, horizontal connections across various teams and topics should be strengthened to promote collaboration within WUR and with external partners.

Impact pathways

During the review period, WENR has defined and implemented four (partially overlapping) 'impact pathways': (1) Envisioning possible futures, (2) Evaluating alternative future options, (3) Mobilizing societal innovations and actions, and (4) Strengthening the underpinning data and evidence base. These pathways prioritize co-learning as a central element, with examples of the operationalization of the different pathways given in the self-evaluation report.

In the committee's opinion, the formation of programmes helped stimulate strategic thinking and transition towards impact pathways. Nonetheless, current definitions of impact pathways lack the specificity needed to support comprehensive strategy development and would greatly benefit from further systematic experimentation, refinement and elaboration. Based on such work, the identified impact pathways could be critically evaluated.

It appears that further development of the impact pathways currently significantly relies on the competence and entrepreneurial spirit of ambitious senior researchers within the teams. These researchers play a significant role in mobilizing co-learning, which encompasses activities such as envisioning potential futures,

evaluating different options, mobilizing actions, strengthening the evidence-base and collaborative learning. The committee recommends more systematic research activities for the overall development of the research agenda.

Currently, impactful senior researchers enjoy considerable freedom in organizing their own collaborations, managing data, developing models and publishing their results. Individual researchers also demonstrate their leadership by narrating inspiring stories of sustainability transformation through their research. There is room for drawing and aggregating lessons from their successful co-learning processes.

The committee notes that both team leaders and senior researchers are motivated and equipped to take more strategic steps in shaping the landscape of future research topics and developing integrated approaches, but perhaps lack a clear mandate or framework to do so. Also, younger researchers appear eager and capable of contributing to the strategic development of impact pathways.

Leveraging Statutory Work and Science-Society Interface

Statutory tasks and ministry-driven work constitute a backbone for the relevance and policy demand for environmental research in WENR. However, there is a risk that these activities are sometimes oversimplified as purely demand-driven, potentially hindering their potential for contributing to broader strategic development and collaboration with the private sector. The committee highlights that statutory tasks should not be underutilized; they can serve as a valuable source of strategic insights, learning opportunities, and experimentation that benefits the entire organization, both in a substantive sense ('what' questions: the environmental topic agenda), and with regard to the knowledge-process ('how' questions: the science-policy-society interface).

Additionally, while there is extensive discussion regarding the role of scientists as activists,

advisors, or boundary spanners in the science-society interface, the integration of these aspects into the strategic programming of WENR appears underdeveloped. The committee recommends that WENR should take a more proactive approach in utilizing existing scientific knowledge when organizing its programmes and engage in co-development to address the various roles of scientists at an institutional level. As recommended in the quality section, these roles should also be exposed to analysis and peer review.

Score: Very Good (4).

Recommendations

1. Develop a sharper WENR-level formulation of the envisioned science-policy-society interface, and transitional approaches. Analyze these interfaces critically and produce knowledge and evidence on their functioning, opportunities and constraints, to facilitate further development. Based on this analysis, develop and operationalize the impact pathways, analyzing what works in specific cases, and drawing lessons from such analyses of successes and failures. In addition to quantitative indicators, also use qualitative indicators of impact (e.g., case based).
2. Base programming dynamics more deeply on an analysis of the current transitional demands, in strong interaction between substantive and policy-driven, societally emerging issues, to ensure societal relevance and drawing on high quality research. This means also interdisciplinary approaches, connecting research answering 'what', 'why' and 'how' questions. Connect strategic work and programming to impact pathways and transition logics and approaches.
3. For developing much demanded integrated approaches, upscale from individual scientists, results or solutions to more general pathways of impact. Use Team leaders' competence in developing topics and programming in substance areas and areas integrated approaches. Engage senior researchers and team leaders to also work at the WENR level as boundary spanners, and involve them in strategy development, thus also stimulating a cross-organizational flow of information as well as learning through communication. Manage the expectations of clients and stakeholders with regard to possibilities and limits to providing integrated answers and solutions.
4. Understand your own role, collaborate and co-create. Position WENR relative to other relevant knowledge institutions, including Wageningen University, RIVM, Deltares, PBL, private sector research and advisory agencies. Collaborate and co-create dynamics and the underlying decision-making process, also vis a vis values of short-term and long-term relevancy, continuity, professional and/or disciplinary expertise, policy sensitivity. Connect regional and national level analyses to European and international level, to amplify impact.
5. Make use of the skills and views of young researchers engaging them in the analysis and communication of environmental challenges and sustainability transitions. Embrace and actively promote the excellent story telling skills among researchers.

Viability

Resources

The economic and financial status of WENR over the past four years has been healthy, with a notable increase in turnover and a consistently positive net income. Total funding increased from nearly 44 M€ in 2019 to more than 47 M€ in 2021 (+7%). This is a strong improvement compared to the previous evaluation periods. Approximately 50% of WENR's budget still relies on non-competitive public funding, with the majority of these funds earmarked for specific activities as agreed upon with the funding bodies, including ministries and agencies. The dependency on the Ministry of Agriculture, Nature and Food Quality remains markedly high and its implications warrant careful consideration.

The knowledge-based budget is a small part of the total turnover and is not programmed by WENR. This limits the opportunities for WENR to engage in strategic research activities and hampers its ability to fulfill co-funding requirements from various research funding bodies. This concern was also raised in the previous evaluation, and the situation has not seen any improvement.

In general, the committee notes a prevailing sense of confidence that 'budgets are not the problem' and a belief that 'there is too much work'. While it is true that WENR is currently enjoying strong tail winds, it is still imperative for management to strategically look towards the future and engage in proactive and anti-cyclical orientation towards new topics, new science, new ways to engage with stakeholders, and new markets (public and private, national and international). The committee recommends the establishment of WENR criteria or guidelines for the selection and prioritization of project leads and clients.

Impact of Covid-19

During the Covid years, the institute has maintained its position. New practices for

internal and external online communication and remote working were developed and these are expected to have a lasting impact on WENR's operations. During the on-site visit, there was surprisingly little mention of this exceptional period, which must at times have profoundly affected existing staff and their communication with the outside world, and, notably, the experience of new, young staff members.

All in all, a compliment is due for WENR's resilience during the Covid period.

Optimizing the organizational structure and strategic process

While it is evident that here has been improvement in strategic thinking and awareness within both teams and programmes, the committee has also noted the absence of a well-defined process for these advancements. There remains a question as to who bears the responsibility and what conditions, including time, budget, and mandates, are necessary to facilitate further progress.

As mentioned, the organizational structure is about to undergo some changes, though this has yet to be formally approved. The information examined by the committee seems to confirm the preservation of the existing basic structure of teams and programmes, characterized as a 'light matrix structure'. The committee learned that, two years ago, the ESG programme structure was evaluated under the report title 'Time for Choices'. However, part of the recommendations to strengthen the programmatic work have yet to be implemented.

The committee observed that funding for new investments is sourced from the Knowledge Base (KB) programme. However, it is important to note that several of WENR's key research priorities, such as Climate and Green Cities, do not currently have designated allocations within

the KB programme. The committee advocates for their inclusion and support.

The purpose of any organizational structure is to serve the organization's mission. The committee believes that the effectiveness of the proposed adjustments in addressing the organization's operational short-term needs and the strategic mid- and long-term development depends more on their implementation than on the structural adjustments themselves. It is important to clarify the benefits of the structural changes for team leaders and programme leaders. However, it should be noted that the evaluation of the proposed changes to the organogram was not included in the current committee's Terms of Reference.

Teams and programmes

There seems to be a variety of appreciations and dealings with the internal setup of teams and programmes. While some WENR representatives mentioned that there is a lack of structured programming within the programmes, others commended the external strategic focus demonstrated by programme leaders and their internal liaison function that promotes cross-cutting collaboration. Team leaders exhibit varying levels of engagement with programme leaders, with some fully embracing collaboration and others potentially too busy with operational tasks related to their project portfolios.

The committee noticed the absence of a clear definition of programmes and the associated job descriptions for programme leaders, which seems to contribute to a lack of clarity or awareness within the organization. Considering the importance of programme leaders, the committee recommends investing further in project supporting services to allow programme and project managers to focus more on the substance of their work. Additionally, within WENR, WR, or OneWageningen, facilities specialized in international acquisition and project execution should be improved or established to provide assistance.

The teams appear to function well and collaborate through team leaders. Staff enjoy a large degree of autonomy and are happy to use that, yet some of the teams seem to have less organized backing-up setups to support the team leaders and secure on-the-job learning of management tasks. The staff often contribute to multiple projects in different teams and make valuable contributions to several programmes. While some silo thinking perhaps persists within the organization, it was evident to the committee that individual staff experience little boundaries in making crossovers. What seems to be missing, however, is a clear WENR strategy concerning the lifecycle of teams and programmes.

With high professionalism and relatively high autonomy for team leaders, and a cross-cutting role for programme leaders, there is a lot of reliance on bottom-up processes, implicit roles, informal structures and networking in organizing programming and generating impact. Given the importance of integrated approaches and cross-cutting initiatives, both for impact and for vitality, the committee advises strengthening the role of programme leaders in relation to operational management. It, however, cautions against this strengthening leading to a complex organization and an increase in intermediate consultation structures.

People and culture

To its satisfaction, the committee encountered nothing but high motivation and engagement among individual employees. Their commitment to their work, the sense of contributing to a positive global impact, the personal and professional development opportunities provided by WENR and the broader WUR environment, as well as the freedom to explore own professional paths, strongly resonated in conversations with staff. It is important to acknowledge that the current management has played a pivotal role in fostering and sustaining this positive and optimistic atmosphere, which is commendable.

Still, there are some challenges and potential pitfalls to address. For example, WENR has expressed its intention to increase the percentage of international staff, which presently stands at a modest 9%. Furthermore, it aspires to achieve equal representation of women and men, with the latest data from 2022 revealing 43% women and 57% men. The committee acknowledges that this already represents significant progress compared to the figures at the beginning of the review period, which stood at 35% women versus 65% men.

Notably, the demographic composition of WENR's staff is imbalanced. While there is a substantial presence of junior and senior professionals, the category of 'mediors' (mid-career professionals) is underrepresented. Furthermore, the anticipated retirement of senior staff within the next couple of years poses several challenges, including issues related to knowledge management and the transfer of essential management skills and competencies.

The importance of social onboarding, networking, and career opportunities for junior employees goes beyond just following procedures and guidelines for onboarding, mentoring, and career planning. It also includes initiatives aimed at providing juniors with opportunities and the confidence to develop their managerial skills early in their careers. While some positive steps have been taken, such as implementing an onboarding programme with a buddy system, establishing a Young ESG group, and offering a trainee programme, the committee believes that these efforts should be further developed. Given the dynamic nature of the current labour market, it is crucial to recognize the organization's interest in attracting and retaining high-quality young professionals for the long term.

During the meeting with young WENR professionals, some concerns were expressed regarding the new housing set-up currently under construction. These representatives emphasized the importance of accommodating the specific needs of junior staff, who mostly

reside in compact living spaces and need working space in the institute, as well as opportunities to meet and engage with the other employees, both professionally and socially. The committee agrees that addressing these concerns is crucial for fostering a supportive and conducive environment for junior staff.

Academic leadership and agenda-setting

WENR is, at its core, a scientific research institute where scientific quality, transparency, and integrity stand as the crown jewels. They support the credibility and impact of the institute's outputs, ultimately influencing societal, environmental, economic, and ecological outcomes. For the institute to maintain its pivotal role, it is of paramount importance to uphold the highest scientific and professional standards and continue investing in them.

The committee talked to a large number of senior researchers and found it striking that there is neither a formal nor an informal 'science-table' in place, where critical issues such as quality assurance, signaling emerging trends or pivotal turning points, and agenda-setting within WENR or WUR are collectively addressed. Senior researchers, who, in many aspects, serve as the thought leaders of the institute, do not hold formal recognition as such, and it remains uncertain whether all of them inherently desire to be positioned in this role. In the long run, the committee feels this is a risk for the dynamic development of the institute.

The committee found it equally striking that, in response to its question 'what is needed for WENR in five years' time?', many WENR representatives emphasized the necessity for 'more integrative competence and capacity', while few, if any, responses pointed towards exploring new specific topics or avenues of scientific inquiry. At present, the cross bar in the T-shaped model gets all the attention, while the vertical aspect receives significantly less emphasis. The committee feels that integration is indeed very important, both as a competence

for impact, and also as a subject for methodological and scientific development. Nonetheless, it also underscores the necessity for addressing the equilibrium within the T-shaped model to ensure the sustainability of WENR in the scientific arena.

The committee observes that there seems to be no clear strategy from the Ministry of Agriculture, Nature and Food Quality with regards to knowledge export to the wider world, possibly with the exception of policy development within EU frameworks. This lack of strategic direction hinders WENR's noted ambitions to expand into new global markets, whether in the public or private sectors. In view of the high reputation that the brand 'Wageningen' holds, this is remarkable. It is evident that many societies face significant challenges related to environmental and biodiversity degradation, depletion of natural resources, meeting food requirements, improving urban and rural living conditions, and coping with climate change. WENR has the potential to contribute to solving these issues.

However, the central government's leadership in this respect is currently missing, leaving a notable gap in the guidance and coordination of the institute's global efforts. Agenda setting initiatives such as NL2120 and 'WUR-Perspectieven voor de toekomst van landbouw en natuur' by WUR and WENR may help to encourage and provoke the Dutch government's leadership. One only has to look at the above described deep and vast problems that many societies encounter, to know that WENR may have great potential to contribute to solving these issues.

Score: Good (3 - 4)

Remark and recommendations

In the previous evaluation, the viability was rated as 'good' (3). The committee believes that the viability has improved compared to the previous period, which is reflected in the score of 'good' to 'very good' (3-4).

Recommendations

On the position of WENR

1. Engage the entirety of WENR in the process of working as OneWageningen and consider teaming up within WU and WR to link to the outside world, including public and private partners and clients. Invest also in the network of (potential) stakeholders, asking how WENR can contribute to their respective missions, rather than convincing them of WENR's importance. The traditional tasks of the Ministry of Agriculture, Nature and Food Quality should be emphasized less, rather there should be new forms of engagement with the Ministry of Agriculture, Nature and Food Quality and other ministries to formulate a path forward for the institute.
2. Develop guiding principles for acquisition and prioritization of projects, and communicate and implement these to support operationalization of strategy. Free up space for strategic activities, try to be less responsive, more agenda setting and even dare to say "no".
3. Negotiate with the Ministry of Agriculture, Nature and Food Quality and WUR corporate to enlarge the budget for the knowledge base. The issues for which WENR has answers warrant an increase.
4. Discuss with the Ministry of Agriculture, Nature and Food Quality (and other ministries) about a common ambition with respect to exporting WENR expertise internationally (also outside the EU domain)

On the organization of WENR

1. Develop a WENR strategy on the life cycle of programmes and teams, considering that some programmes may evolve into teams, and teams should remain dynamic. Reconsider the role of programmes in relation to existing structures such as teams and potential mission development. Encourage

- programmes to engage in programming activities. Ensure that programme leaders have clear goals, mandates, and budgets if programmes are retained. Consider the establishment of an internal Scientific Advisory Board.
2. Develop project supporting services to free up programme and project managers' time for substance.
 3. Statutory research tasks require explicit attention and an explicit place in the organizational set-up.
 4. Balance autonomy and control via by establishing explicit, yet rather general strategic procedures. Thereby it is noted that in a professional organization like WENR, the alternative to autonomy is not control, but co-operation (and the currency is trust).

On the demography of WENR and career pathways

1. To retain scientific knowledge and managerial skills and pass them on to the next generation, it is recommended to have develop a WENR strategy related to staff retirement. There should be more clarity and explicitness, especially for young professionals, including WENR guidelines for onboarding, mentoring, and career path planning.
2. Give trust to young professionals, make them giving them the opportunity to experiment with new things, including management and communication tasks.



4. SUMMARY

For the reader's convenience, the committee provides an executive summary of its findings and recommendations regarding the quality, social and economic impact and overall viability of WENR.

The scores given are as follows:

- ❖ Quality: Good (3-4)
- ❖ Impact: Very Good (4)
- ❖ Viability: Good (3-4)



Summary

The review committee was tasked with evaluating Wageningen Environmental Research (WENR) based on three main criteria: (a) research quality, (b) retrospective impact, and (c) viability in relation to future prospects. The committee's report and recommendations are based on a comprehensive self-assessment report and a site visit, which included interviews and conversations with management, staff, stakeholders, and clients. All discussions were frank and open, providing relevant information for the committee's assessment.

The assessment of WENR's performance and future prospects is positive. WENR has maintained a healthy financial status over the past four years despite the Covid pandemic, and the demand for their expertise on environmental issues is increasing. The staff and management of WENR are competent, committed, involved, and aware of their diverse challenges.

WENR produces high-quality publications that cover diverse research topics, mainly focusing on natural science-driven approaches. However, there is a concentration of these publications among specific researchers, and more attention should be paid to the role of scientific publications across WENR. To address this, the committee recommends strengthening collaboration and integration within WENR and reinforcing connections with WU. Establishing an internal Science Advisory Board may help with this goal.

Models and datasets play a significant role in WENR's research, but some are not openly shared. The recommendation is to apply quality assurance and open science principles to all models and datasets, promoting transparency and accessibility, and enhancing the integration of models to facilitate comprehensive assessments

WENR conducts practical research for sustainable living and has established itself as a leader in environmental knowledge through

proactive communication strategies. They present their research in various formats, including brochures and visuals, to meet contemporary demands. WENR made significant investments in impact and has successfully contributed to policy development and evaluation and is committed to impactful initiatives that position it as a leader in societal sustainability transition. To stay ahead of evolving knowledge, policy, and societal demands, WENR must critically evaluate existing knowledge bases and address comprehensive questions, expanding and iterating across 'what' and 'how' questions.

WENR is considered a reliable and continuous knowledge partner. Stakeholders appreciate WENR's ability to combine academic and applied work. There is a growing demand for integrated approaches, particularly in nature-based climate adaptation and mitigation, resilience for food issues, and renewable energy production. Collaboration with private and public sector actors can improve impact. WENR acknowledges the need for enhanced collaboration within the institute, WUR, and other knowledge producers to address complex issues and clarify connections between strategic developments.

The recommended actions on impact include developing a sharper science-policy-society interface, operationalizing impact pathways, analyzing successes and failures, involving team leaders and senior researchers, managing client expectations, collaborating with other institutions, co-creating dynamics, engaging young researchers, and embracing storytelling skills. These actions should result in more integrative approaches and also in (scientific) publications.

To strengthen the position of WENR, it is recommended to clearly define the way forward and engage the entire organization in the process. The focus should be on working as OneWageningen, teaming up with partners both within and outside of WUR, and

formulating a path forward for the institute with a mix of public and private partners and clients. WENR should invest in the network of stakeholders and consider how it could contribute to their respective missions instead of looking for ways to convince them of the importance of WENR's insights.

Guiding principles should be developed for acquisition and prioritization of projects, and space should be freed up for strategic activities, with a focus on agenda setting and saying 'no' when necessary. There should be more explicit negotiations with clients regarding the need for and terms of producing peer-reviewed publications. Furthermore, WENR should negotiate with LNV and WUR corporate to enlarge the budget for the knowledge base and discuss a common ambition with respect to exporting WENR expertise internationally, including outside of the EU domain. To improve the organization of WENR, it is recommended to keep the structure simple and

transparent while avoiding intermediate structures. A WENR strategy should be developed for the life cycle of programmes and teams, with some programmes potentially developing into teams, and teams should be dynamic. Autonomy and control should be balanced, with cooperation being the alternative to autonomy in a professional organization like WENR.

Due to the high demand and good market prospects, it is crucial for WENR to have a strategy in place for staff retirement, with a focus on retaining scientific knowledge and managerial skills, and passing them on to the next generation. Young professionals should be given the trust and freedom to experiment with new tasks, including supporting management and seniors, to promote their growth and development.



5. APPENDICES

1. Terms of Reference
2. Key criteria on a four-point scale
3. CVs of committee
4. Programme site visit



Terms of Reference

The committee is requested to concentrate on the following criteria:

- A. Quality of the research
- B. Societal and economic impact of the research
- C. Viability of the organisation
- D. Performance of statutory tasks

Research quality, societal and economic impact, and performance of statutory tasks demand a retrospective assessment with special attention to historical data such as volume and sources of income, societal visibility, customer orientation, and scientific output and citations. The viability of the organisation demands a focus that is more directed towards the current and future situation with special attention to market attractiveness and research management.

The sub-criteria to qualify these key-criteria are presented in Annex A, with indicators detailed in Annex B. The background information, necessary for the assessment, is provided in the institute's self-assessment report.

a. Quality

The first key question for the WR institute evaluation is:

What was the quality of the institute's research in the evaluation period?

The quality of WR research must be assessed in a different way from the quality of academic research. This is due to the different roles that WR institutes and academic knowledge institutes (e.g. universities and KNAW/NWO institutes) play in the research and innovation system. Typical WR research is: (1) research for building and maintaining their strategic knowledge base, (2) precompetitive research in collaboration with private and public parties, (3) Programmatic research for policy-making knowledge, (4) contract research, (5) statutory research tasks (separate criterion).

The output of WR institutes is diverse and comprises more than scientific publications. The evaluation therefore also takes into account how

the institute's various stakeholders rate the research quality. This is measured via direct questioning (through customer satisfaction and knowledge utilisation surveys, interviews with customers, partners and users, or focus group sessions). Indications for the quality ratings can also be recognised through revenues from diverse funding sources, repeat customers, partnerships with prominent knowledge institutions, participation in national/international research consortia and research networks, etc.

b. Impact

The second key question for the WR institute evaluation is:

What impact has the WR institute's research had in the evaluation period?

WR institutes can realise different types of impact with their research, with distinction between:

1. Type of knowledge user: businesses versus non-profit organisations including public sector
2. Type of domain in which impact is realised:
 - Contribution to the achievement of societal themes in national policy
 - Contribution to European or international policy agendas and themes
 - Contribution to innovation agendas of the top sectors in the Netherlands.

c. Viability

The third key question about the WR institute evaluation is:

What is the viability of the institute? How well is the WR institute equipped and positioned for the future in light of developments in their specific environment?

d. Statutory tasks

The fourth key question about the WR institute evaluation is:

How was the institute's performance of statutory tasks including crisis organisation in the evaluation period?

To support the assessment of the performance of statutory tasks, client interviews are planned as part of the site visit.

Key criteria on a four-point scale

Score	1	2	3	4
	unsatisfactory	satisfactory	good	Very good
Quality	The group's research has clear weaknesses and is insufficiently appreciated by its stakeholders.	The group's research shows some weaknesses but is generally of good quality. The research is respected by most stakeholders.	The group conducts good and respected research for its stakeholders.	The group conducts very good and highly respected research for its stakeholders. The research is highly respected world-wide.
Impact	The group is insufficiently connected to its stakeholders. Also the utilisation of its research products is insufficient. The strategic importance for the economy (or policy-making / agenda setting) is minimal.	The group has good connections to stakeholders in general but falls short on some aspects. Also the utilisation of its research products is generally good but falls short in certain places. The strategic importance of this knowledge utilisation for the Dutch and European economy and/or resolution of societal challenges is generally substantial, but not in all respects.	The group has good and substantial connections with its stakeholders. Its research is used by its stakeholders. The utilisation of its research products has strategic influence on the economy (or policy-making and agenda setting) in the Netherlands and Europe and / or is of great use for challenges that society has to face nowadays.	The group has very strong structural connections to stakeholder groups. Its research products are used on a large scale. The utilisation of the research products is of great strategic importance for the economy (or policy-making and agenda setting) in the Netherlands and Europe and / or is of great use for challenges that society has to face nowadays.
Viability	Group with significant weaknesses. Not well positioned and insufficiently equipped for the future. The strategy has clear deficiencies. Problem might be of internal (strategy, expertise) or external (market related) origin. Group is facing problems, caused by internal deficiencies. Management is responding not adequately. Decisions made on a rather ad hoc basis. Significant improvements are achievable.	The group has a good strategy in general but in certain parts there is room for improvement. The group is generally well-positioned and well-equipped for the future, but shows some deficiencies. Not too innovative and not very competitive. In general the management do what is required and are not too exciting. Prerequisites for achieving good quality and impact in terms of finance and staff and facilities fall short on certain places.	Good group with strong focus and strategy and sufficient critical mass. Innovative and competitive. The group is well positioned and equipped for the future. The strategic plan is adequate and well thought out. It has not used all the opportunities yet and with a few adjustments its attractiveness will improve. Management is solid and stimulating. Nevertheless some improvements might be worthwhile considering in respect to finance, staff and / or facilities .	Very strong group with strong focus and strategy and sufficient critical mass. Very innovative and competitive. The group is very well positioned and equipped for the future. The institute is very attractive to its stakeholders. Good strong, proactive management. Decisions are correct and timely. The strategic plan is highly adequate and well-thought-out. Highly satisfied employees and staff. Prerequisites for optimal performance in terms of finance and staff and facilities are present.

**Statutory
tasks**

Inadequate performance of tasks, as demonstrated by repeated complaints or deficiencies in output or testing methods
Poor contingency plans with severe flaws.

Tasks are performed as agreed, and output meets the requirements.
Contingency plans are adequate.

High level of service: high customer satisfaction and high level of anticipation of customer needs.
Good solid testing methods.
Contingency plans are reviewed regularly and exhibit no flaws.

Very high level of service and support, combined with high quality output and excellent customer satisfaction. New needs are anticipated and quickly met. Testing methods are developed to perfection and very advanced. Perfect contingency plans.

CV's of committee

Han de Wit joined TAUW in 1992, upon completing his education in environmental and soil chemistry at Wageningen University. TAUW is an independent European consulting and engineering company specialized in the design, improvement and management of the natural environment, built environment and infrastructure. De Wit has also been actively involved in several research and innovation initiatives. For instance, he is executive board member of RCT Gelderland (and its predecessors) (2007-present), ambassador /transition manager of the Bouwcampus (2016-present) and member of the quartermaker-team Innovation Campus "de Kien"- Stadscampus Deventer, responsible for business development (2020-present). In the past, he was executive board member of the Climate Campus in Zwolle (2018-2023), chairman of Bodembreed (Dutch National Soil Conference) (2008-2021), and executive board member of CURNET (Applied Research Organization – Civil Engineering) (2006 – 2012). His other activities include chairing the Supervisory Board of "de Milieu en Natuurfederaties" (Dutch federations for nature and environment, <https://www.natuurenmilieufederaties.nl>)

Eeva Primmer holds a PhD in Agriculture and Forestry, forest policy from the University of Helsinki (2010). She is currently the Research Director of Finnish Environment Institute, Syke. In this role, she is responsible for the quality, integrity and impact of Syke's research. She heads two cross-cutting units: Societal Change and Quality of Information. Primmer has taught and supervised students and reviewed scientists. She was visiting scientist in the Science and Research Organisation (CSIRO) in Brisbane, Australia 2012 and a part time visiting Mercator Professor in Albert Ludvig's University, Freiburg, Germany in 2017-2018. Her other roles include(d) being a member of the International Resource Panel (UN-IRP) and acting as associate editor at the Elsevier journal Ecosystem Services in 2014-2019. Her

substance focus has been on ecosystem services, biodiversity, forests, natural resources, energy and sustainable development. Her research has been published in peer-reviewed journals and other outlets.

Arjen Mulder is the head of Knowledge Management & Learning at Solidaridad Europe. In this role he is responsible for the development, implementation and continuous improvement of planning, monitoring, evaluation and learning processes. He is leading a team that builds a knowledge base to deliver effective and relevant programming. This is done by ensuring quality data collection and analysis in our projects, by developing research projects with knowledge partners, by developing knowledge products and by designing and implementing learning trajectories for Solidaridad staff. In the past, Mulder has successfully strengthened planning monitoring and evaluation systems in international NGOs like War Child, Oxfam Novib, the Netherlands Red Cross, and VSO. All his work has been driven by critical questions: Why do we do the things we do? What's the evidence that we have any impact? What have we learnt? His aim is always: provide colleagues with more insight to improve our impact.

Annemarie van Wezel is an experienced environmental scientist in water quality, risk assessment, environmental toxicology and chemistry, and environmental policy. She was granted many projects in the field of chemicals of emerging concern and water quality, current examples are the European projects ITN ECORISK2050, ITN PERFORCE3, and Dutch NWO funded projects EMERCHE, RUST, PsychoPharmac'eau, AQUACONNECT, TOSS and NWO Large Scientific Infrastructure ARISE. She is interested in the science-to-policy interface, in scientific outreach and engagement with end-users of knowledge. She appeared in numerous media coverages. In her work, she likes to combine organizational and content roles. She is a member of the Dutch Health Council and the Dutch Board on authorization of plant protection products and biocides

CTGB. She holds the chair Environmental Ecology and is Scientific Director of IBED (Institute for Biodiversity and Ecosystem Dynamics) at the University of Amsterdam.

Peter Glas studied Biology and Dutch Law at Leiden University. During 1983-1989 he was employed by WLIDelft Hydraulics (now Deltares) as a researcher and consultant in the field of integrated water management. During 1989-1991 he was appointed science coordinator at the Dutch Ministry for the Environment and Physical Planning (VROM). He rejoined WLIDelft Hydraulics in 1991 as regional manager Central and Eastern Europe and in various management capacities. As of March 1st 2003 he was appointed by HM the Queen as Water Reeve (chair) of Water Board De Dommel. During 2004-2015 he was executive board member of the Dutch Association of Regional Water Authorities (Unie van Waterschappen), of which the last 6 years as the national chair. From 2013 until 2022 he served as independent president of the OECD Water Governance Initiative. As of January 1st 2019 Peter Glas was appointed by HM the King as Deltacommissioner. Since 2021 he also serves as chair of the Governing Board of Unesco-IHE Delft.

Claire Chenu is research director at INRAE (French National Research Institute for Agriculture, Food and Environment) and consulting professor of soil science at AgroParisTech. She is a member of the research unit ECOSYS at Palaiseau in Paris area. Her research deals with soil organic matter, which has a prominent role in ecosystem services provided by soils. She addresses the roles of soil organic matter in soil physical properties and investigates carbon dynamics and sequestration in agricultural soils. She was the 2019 Soil Science medalist of the European Geosciences Union and the recipient of the 2019 INRA Research Lifetime Achievement Award. She is involved in the science-policy-practice interface and in awareness raising activities on soils. She has been nominated Special Ambassador for 2015 the international year of soils by the FAO. She is member of the Scientific and Technical Committee of the 4 per 1000 initiative. She chairs the scientific and technical committee of the French soil experts network "Rnest". She leads the EU H2020 European Joint Programme SOIL that associates 24 European countries: "Towards

Programme site visit

Sunday 8 October

15.00 – 16.00	Arrival and check-in at hotel
16.30 – 18.00	Internal meeting Review Committee
18.00 – 18.30	Drinks
18.30 – 20.30	Dinner

Monday 9 October

09.00 – 09.30	Opening by Vice-president of WUR Prof. <u>dr.</u> Arthur Mol
09.30 – 11.00	Structure and strategy of WENR
11.00 – 11.30	Break / internal evaluation
11.30 – 12.15	Scientific quality - WOT
12.15 – 12.30	Break / internal evaluation
12.30 – 13.45	Viability - Lunch with young researchers
14.00 – 14.15	Break / internal evaluation
14.15 – 14.45	Scientific quality - Meaning of metrics
14.45 – 15.45	Scientific quality - Profs & potentials
15.45 – 16.00	Break / internal evaluation
16.00 – 17.00	Viability - Research management (TLs)
17:00 – 17:30	Break / internal evaluation
17.30 - 17.45	Walk to venue Stakeholder diner
17:30 – 21:00	Impact – Stakeholder diner (diner starts at 18.00)

Tuesday 10 October

09.00 – 09.45	Impact - Sustainable land use
09.45 – 10.00	Break / internal evaluation
10.00 – 10.45	Impact - Sustainable water management
10.45 – 11.00	Break / Internal evaluation
11.00 – 11.45	Impact – Biodiverse environment
11.45 – 12.00	Break / Internal evaluation
12.00 – 13.30	Lunch with teams
13.30 – 13.45	Break / Internal evaluation
13.45 – 14.30	Impact – Green cities
14.30 – 14.45	Break / Internal evaluation
14.45 – 15.30	Impact – Green climate solutions
15.30 – 18.00	Internal evaluation (with snacks) (also available for additional interviews)

Wednesday 11 October

09.00 – 10.15	Conclusions: drafting presentation and report
10.15 – 11.00	Preliminary results/conclusions presented to board of directors
11.00 – 14.30	Final meeting including lunch
15.00 – 16.00	Presentation to all employees (30 mins.), including drinks