
WENR response to the assessment report



Wageningen Environmental Research
Wageningen, November 2019

Preface

In May 2019 an external Review Committee visited WENR and formulated conclusions and recommendations in their assessment report, based on our self-evaluation report and internal and external interviews. The committee provided us with very useful reflections that assist us in an even better positioning of WENR. The interaction with the committee during the three-day visit and their feedback was very much appreciated. This document describes the WENR action plan in response to the conclusions and even more to the recommendations of the committee.

We are very pleased and proud of the 'very good' on scientific quality, knowing that our academic staff has a high standard. We think it is important to maintain this standard. Beforehand we hoped and actually expected to get a higher score on impact. Although it was rated as 'good' and the committee was pleased by the impact we already have, we take up the challenge and will try to create even more impact by connecting to society in different ways. We have put a lot of effort to improving our organisational vitality during the last few years. Therefore, some of the recommendations made by the committee were already implemented at the beginning of 2019, and some of them will be taken up in the near future.

Obviously, a number of recommendations is in line with last year's WENR Strategic Plan, that is being realised in various ways at the moment. We see the recommendations in the assessment are supportive to most policies we have already started, like 'inside out- outside in', the strategic personnel plan and the ambition to have a growing group of researchers that publishes their research results in journals. As part of the realisation of our strategic plan, we created several 'task forces' on different topics, all staffed by team leaders, programme leaders and (academic or supporting) staff. Some of the current task forces finished their assignment and went into hibernation, while the task force 'Impact' will be revived and asked to take the lead in making actions more concrete and realising change.

The drawing up of an academic and innovation strategy is a continuous process, for which the responsibility primarily lies with the Programme Team. We appointed new programme leaders for three of the five programmes recently, bringing in new ideas, experience and networks. Also, we will search for more connection with the (societal) stakeholders fitting within the framework of programmes and renew our external Advisory Board.

We recognise the point raised by the committee concerning the visibility and recognisability of WENR vis-à-vis Wageningen University. The OneWageningen policy and related branding policy has a profound effect on the recognisability of WENR. We first realised this during the interviews for the customer's satisfaction evaluation. It also became apparent in the bibliographic research that the WUR Library has carried out. We encounter this also when a WENR employee is in the media and is affiliated as Wageningen University.

The observations and recommendations of the committee have challenged us to renew our plan of action with the team leaders and programme leaders. This to ensure the vitality, scientific quality and impact are up to standards and improved where possible or necessary. We will energize our task forces to further develop and implement actions.

In the following table for every recommendation, we indicate how we will work on the further improvement of our position as a valued knowledge institute and how we will approach this. So far, our response, concrete actions and in most cases the leading person or team is discussed with the WENR team leaders and programme leaders. The responsible persons, teams or task forces will prioritize the action plans (including a time-line and monitoring plan) and report to the board twice per year.

Our ambition is to increase our societal impact, keep our high academic standard and being a vital organisation where it is great to work for!



Assessment report Wageningen Environmental Research (WENR)

Environmental Sciences Group



WAGENINGEN
UNIVERSITY & RESEARCH

Assessment Report

Wageningen Environmental Research (WENR)

Environmental Sciences Group

Wageningen University & Research

June 2019

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Content

Preface	5
Summary	7
1 Introduction	9
1.1 Assignment to the Assessment Committee	9
1.2 Assessment procedure	9
1.3 Results of the Assessment	10
1.4 Quality of the information	10
2 Position and embedding of WENR and the concept of 'One Wageningen'	11
3 Performance on WENR	13
3.1 General	13
3.2 Quality	14
3.3 Societal and economic impact	16
3.4 Viability	18
Appendix 1 Terms of reference	21
Appendix 2 Weighing the assessment results	23
Appendix 3 Programme Site visit WENR, May 2019	25
Appendix 4 Brief Curriculum Vitae of the Peer Review Committee Members	27

Preface

The Review Committee thanks the staff and the management for all the excellent preparatory work. We received a clear review protocol and an extensive and well thought-out programme for the on-site visit. The extensive self-evaluation provided a good basis for the conversations and the interviews.

The on-site visit took place from May 19 until May 22. The programme consisted of internal and external interviews. Internally we interviewed the management and employees of WENR, ranging from the senior research staff to young professionals, members of the different teams, support staff and the Works Council, and members of WUR Executive Board. Externally we interviewed different stakeholders and clients of WENR, including national and regional authorities and partners of WENR.

We thank all interviewed persons for the open conversations and dialogues. We are grateful that clients and stakeholders were willing to discuss their opinions on WENR with us. The mix of internal and external interviews helped to obtain a balanced view on the current performance of WENR and on the expectations and perspectives for the near future.

On Wednesday, the last day of the review, we presented our preliminary observations and recommendations during an interactive meeting with the WENR management. This was followed by a final presentation to the WUR management and the staff of WENR.

The three-day review was intensive but rewarding to us as a Review Committee. Although WENR has experienced some difficult years and had to downsize, we have met an enthusiastic and passionate group of professionals who are motivated to further developing an appealing and vital WENR. WENR is based on a strong scientific basis that is renowned for a client driven approach. In its domain it plays an important role in the societal debate and at the science-policy interface.

We hope that our conclusions and recommendations will help the WENR management to move forward and strengthen the position of the institute even further.

June 2019



Han de Wit
Chair Assessment Committee

Summary

The Review Committee was requested to assess the institute Wageningen Environmental Research (WENR) on three main criteria: (a) scientific quality and (b) impact in a retrospective way, and (c) viability in relation to future prospects. The report and recommendations of the committee are based on a comprehensive self-assessment report, that provided valuable information on the performance of WENR, and on a site visit with excellent interviews and conversations with management, staff and stakeholders and clients. All discussions were open and frank and provided very relevant information for the assessment.

WENR has faced great difficulties to operate in a cost effective way in the past years (due to budget cuts by the government and some internal financial and administrative issues) but its recovery plan has proven to be effective. However, having lost a lot of buffering capacity and having to operate with a skewed age distribution in its permanent staff with few young researchers (hence high unit costs), it is likely that WENR also in the forthcoming period will have to face a lot of challenges. Financial management has improved a lot. The institute is now more competitive, but needs to renew its staff profile and gain a greater diversity also in terms of skills. We recommend developing a strategy with clear science and innovation targets, that focusses on WENR's size and skills with a 5 year horizon, including also a fallback scenario in case the economic environment degrades.

Despite the severe economic conditions of WENR the scientific quality has remained high with a high scientific relevance. Scientific quality is the strong point of WENR; however there is some room for improvement. As part of the scientific staff is currently not involved in publishing, the number of publications could be higher. We recommend reinforcing the publishing culture by having all researchers participating.

WENR researchers could also be more visible. Wageningen University scientists seem to be more assertive and dominant in pushing themselves forward. Also with regard to impact we observed (especially from the interviews with stakeholders) a certain reluctance to being exposed to the limelight. Although the impact seems to be solid, valued and of good quality, WENR is not seen as very outspoken and inspirational, and is thus not setting the agenda. We think that WENR has huge potential in both human capital and content, to become more inspirational and attract in this way more funding. This potential should be exploited further.

WENR has good connections with professionals among stakeholders on current issues and tasks. Yet we wonder whether WENR is really in connection with the changing society. This connection could be strengthened in particular through interactions with partners and opinion leaders in the public and private domain. Exploring this in co-creation with partners, including also partners who are not necessarily your direct clients and stakeholders but belong to other relevant groups in society, could potentially increase impact and provide a stronger support base. We recommend to create strategic partnerships and be in a continuous dialogue with these relevant groups. As communication is of paramount importance for a strong connection with stakeholders we recommend to develop a solid communication plan.

Through more control over, and influence on, the future agenda, one can also influence the allocation of the resources. At the same time the visibility as a leading partner will increase the attractiveness of WENR for new staff even more. In our interviews we experienced the enthusiasm and motivation of the staff. We have noticed that for young researches WENR is a unique and attractive place to work.

Taken together - the quality, the improved operational and financial management and the increasing societal and political attention paid to environmental issues - made us feel confident in WENR's near future. We encourage WENR to take the next steps, as "business as usual will not be enough": maintain the achievements of the recent years and invest in connecting with the changing society. Do this in co-creation with partners and stakeholders through a shared research and innovation strategy. In addition, be more strategic, create more space for talents and strive for diversity.

The assessment of WENR is based and weighted according to the rationale, explained in Appendix 2. According to this rationale the scale cover a range from 4 (very good) to 1 (unsatisfactory).

	Quality	Impact	Viability
WENR	4	3	3

Note that: as instructed, we have used integer values in our scores

1 Introduction

1.1 Assignment to the Assessment Committee

Every four to five years the Executive Board of Wageningen University and Research (Wageningen UR) subjects the performance of its WR Institutes to a peer review for the purpose of reflection and benchmarking. The assessment also serves a function in accounting for the use of public money.

The overall aim of the assessment of WENR is to obtain an independent view of its position in the (inter-) national arena of similar institutes, to receive recommendations for further improvements and to provide an independent account for its activities to the Dutch Government and other stakeholders. The Terms of Reference (ToRs) for the Assessment Committee are given in Appendix 1; they focus on the organisation's quality, its impact, and its viability. The Committee was requested to assess the institute on these three criteria taking into account its mission as an applied research institute.

The assessment covered a period from 2012 up to and including the year 2018.

1.2 Assessment procedure

In order to guarantee an efficient rollout of the evaluation, a set of documents was put at the disposal of the Committee. It consisted of a self-evaluation report and programme information for the site visit. Additionally, the Committee was provided with the previous assessment report, the profiles of key personnel, the Strategic Plan and some further documentation to help obtain an accurate impression of the institute's current position.

The Committee prepared itself by sharing their first impressions and preliminary considerations and judgements at the inception of the site visit. This process established the focus of the site visit. The Committee was welcomed by Prof. Arthur Mol giving a brief survey of the WUR organisation. During the site visit, presentations were given by the general management and the programme coordinator. In addition, there was plenty of room for short pitches and interviews with programme leaders, team leaders, entrepreneurial researchers, professors and young / new researchers, support staff, technicians and the Works Council. Also a really useful dinner / interview was arranged with clients and stakeholders.

The interviews were open and frank and key aspects could be discussed sufficiently to obtain an adequate impression of WENR's performance (see the programme appendix 3). The main conclusions were discussed and agreed upon unanimously during the visit.

The site visit lasted for three days from the evening of May 19 up to the afternoon of May 22, 2019. At the end of the visit, the preliminary conclusions were presented to WENR management informally and, consequently, to the Vice President of Wageningen University & Research, the WENR management and WENR staff.

Finalisation of the Assessment Report took place in the following weeks by correspondence via email. The final draft report was presented to WENR's general director to address potential misconceptions and factual errors.

1.3 Results of the Assessment

Overall, the Committee felt that sufficient information had been gathered to draw conclusions and make recommendations. The assessment of the institute was formulated and weighted according to the rationale, explained in appendix 2. The conclusions are given in chapters 2 and 3 of this report. They follow the structure and the criteria which are formulated in the ToRs.

1.4 Quality of the information

The self-assessment report was prepared in a professional way and was valuable in providing sufficient information and background to draw general conclusions. Questions by the Committee during the site visit about uncertainties in the self-assessment or missing details were addressed very quickly.

The presentations during the site visit were well prepared and at the right level of detail, leaving enough room for discussion. They were very helpful in enabling the Committee to assess the current performance and prospects of the institute. Moreover, the discussion with the clients was very valuable. All discussions and interviews were open and constructive in providing relevant information for the assessment.

2 Position and embedding of WENR and the concept of 'One Wageningen'

Wageningen University & Research (WUR) is a unique and excellent research and innovation ecosystem combining Wageningen University (WU) and specialized Wageningen Research institutes (WR). WENR is part of Wageningen Research and, together with the Department of Environmental Sciences of the University, it forms the Environmental Sciences Group (ESG). The senior management of ESG and the supporting staff oversee both WENR and the University Department, which are however separate legal entities.

For us as outsiders it took some time to grasp the organisation and to understand its pros and cons and identify advantages and possible obstacles. We noticed that, in general, on the work floor, scientists and researchers can easily find each other and seek for synergies within ESG but also with other parts of WUR. WENR's programme structure is still relatively new and not yet fully known to all the staff we met. However, those, who were aware and engaged, were positive and mentioned various added value aspects, among others the engagement of the university part in the programmes. Unfortunately, we also observed some obstacles like the different finance models between WU and WR and (some) internal competition. The coordination and support of the tender support team is highly appreciated.

Wageningen is a very strong "brand" and it has extensive international networks and the individual groups at WU and WENR clearly benefit from this. However, for many clients and stakeholders WENR is still known under the name Alterra. Alterra was also a strong brand in the Netherlands and internationally. We experienced that the WENR activities currently radiate more to the Wageningen University or to individual scientists than to WENR. In the impact section we recommend to be more proactive and strategic on communication to make Wageningen Environmental Research more visible.

A university environment is a pool of talented (permanent or temporary) personnel that bring in new expertise, skills, approaches and energy. They are also often active in searching for new markets and stakeholders, and can in this way be of great support in all kinds of WENR activities and projects. An active policy to bring in new young staff is also important to counteract a further ageing of WENR professionals (with a current average age of 51).

Recommendation

1. *Exploitation of the total human capital at WU and WR should be improved further by promoting the exchange of both young and more senior employees between the two organisations.*

3 Performance of WENR

3.1 General

In the reporting period of 2012 to 2018, WENR faced two major challenges that impacted the project turnover and its financial position. Firstly, the Dutch government started reducing public spending on the Dutch Knowledge and Innovation structure. Secondly, the “green” domain was much less prominent on the agenda of authorities both at national and local level, as well as in the private sector, than before. As a consequence the WENR budget declined and accountancy rules became more rigid. In 2015 this resulted in an unexpectedly large loss. A recovery plan was setup and implemented. This included the reduction of both temporary and permanent staff. Further, the control of the primary processes, including the financial procedures, was improved. New programme lines, based on important societal issues, were defined with a more outward looking attitude. In 2017 the losses were already strongly reduced and in 2018 the operational result of WENR was (slightly) positive again. This shows that the WENR recovery plan has been very effective. Along with this, the financial management has improved a lot. Despite all above-mentioned problems and recovery processes, the scientific quality has remained excellent and with high impact. We also experienced a great enthusiasm and a high motivation among the staff.

At present, environmental issues like climate change, biodiversity, water crises, and the realisation of the sustainable development goals have become important issues for society and are high on the political agendas again and also, more and more, on the agendas of the private sector. The prospects for funding have improved significantly. We also noticed that for young researchers WENR is an attractive place to work. If you seek to do interesting and relevant environmental research, there are hardly any serious competitors in the Netherlands.

This has fueled our optimism for further positive development and growth in the near future.

Recommendations

2. *The organisation has been largely focusing on becoming in control and profitable again and it is time to take a next step and get more connected with the changing society, while ensuring the achievements of the recent years. Take this step in co-creation with partners and stakeholders.*
3. *WENR needs to refresh its staff to achieve a greater diversity in terms of expertise, skills and approaches. To achieve this a strategic HR management and recruitment policy, as well as overseeing it's implementation, will be of key importance.*
4. *We recommend putting in place a clear science and innovation strategy, that focusses on WENR's size and skills with targets for a 5 year horizon, including also a fallback scenario in case the economic environment degrades.*

3.2 Quality

Regarding the quantity of the scientific output, WENR fulfills the requirements of a knowledge-based research institute, as the overall annual number of articles in the international peer-reviewed scientific literature exceeds one per scientific FTE. In recent years, more emphasis has been put on peer reviewed high-impact articles and less on non-refereed articles and conference papers.

As a consequence WENR scores very highly in terms of proportion of journal articles in the top 10% as well as top 1% most cited publications. Particularly in the field of social sciences the performance of WENR is exceptionally high: in 2011-2017 39% of the WENR publications in social sciences were in the 10% most cited publications. This has resulted in very high scientific impact as measured relative to the world average citation score (RI index). Regarding the benchmark, compared to other European institutions in the same domain, WENR has the highest scores in citation impact, and equals with Center for Ecology and Hydrology / UK in scientific outputs in the domain.

Many of the 1% most cited publications are written as partner in (sometimes large) international consortia, indicating the strong links between WENR and the international scientific community. These top 1% publications include many articles in the absolute top journals like Nature, Nature Climate Change, Nature Communications, Science, PNAS, Global Change Biology and more. Most of the top 1% publications attracted in 2015 100-200 citations, one even >3300 (Steffen et al.). This strong presence of applied/strategic research in the international scientific top literature is highly appreciated.

Almost half of the peer reviewed publications are based on a collaboration with WU, which indicates a strong synergy with WU. Another recognition of the academic quality of WENR are the eleven WENR researchers, who have been appointed as Special Professor at Wageningen University or another Dutch university. Besides, several WENR researchers have an editorial role in prominent scientific journals. This further increases the visibility of WENR in the international scientific community.

Although the scientific quality of the WENR Research is without doubt very good, we also identified some concerns worth mentioning.

Firstly, the distribution of articles is somewhat unevenly distributed over scientific staff members. A significant number of staff members didn't produce any academic output over the assessment period (and close to 25% of the researchers with less than one peer-reviewed paper per year). This implies a clear underperformance regarding the respective KPI of the institute and makes the scientific productivity too sensitive to changes in staff composition.

Secondly, there seems to be no strict rules about how to mention affiliations in the scientific articles. We recommend to do this in a standardized way. This is now even more important because the new name WENR should become as well known as the previous brand Alterra.

Scientific quality: very good (score 4)

Recommendations

5. *WENR is a knowledge-based research organisation, so publishing in the international peer-review scientific literature is of paramount importance and the present publishing profile should at least be maintained. For its credibility, all scientific staff members of WENR should publish at least one article per year in the international peer-reviewed scientific literature. Although this is explicitly addressed in the WENR KPI's, it seems not to be fully recognised by all WENR scientific staff members. The committee recommends that publishing should be explicitly discussed in the annual R&O discussions.*

6. *Publishing in international peer-reviewed literature should be part of the project-planning and project budget, to ensure adequate time is available for writing scientific publications. A scientific publication strategy, that includes well thought out practices in disclosing research results, will strengthen the international positioning of WENR and, through this, will support the acquisition strategy. The strongest impact might be achieved through opinion-oriented/challenging articles influencing the scientific agenda as well as through discussion papers on scientific/societal issues of high relevance.*

3.3 Societal and economic impact

In assessing the impact of WENR's research the committee has focused the evaluation on a few elements, that it considers of substantial importance for having impact. These elements are:

- does the research adequately address the societal challenges?
- are the efforts made by WENR effective to develop relevant connections with stakeholders?
- to what extent have stakeholders used the WENR research results?
- how is WENR monitoring its research results in terms of societal impact?

We noticed that there is a real drive for impact among WENR staff. During the staff interviews many of them indicated that they in fact joined WENR because of the possibility to contribute to societal change and found that WENR is for them the place to be to contribute to such change. The same is also indicated by the client survey. Many staff members also expressed the ambition to take leadership in this either individually, or together with their team members and / or with colleagues within the institute as a whole.

The committee was given various examples indicating that WENR is well connected to the relevant stakeholders at the various government levels, public institutions and the private sector. The traditional connections and personal relationships are well used and maintained. However, the committee sees room for a stronger impact, by moving beyond the traditional one-on-one client relations. Complex problems of today and the future require responses from multidisciplinary coalitions with whom societal programmes including research are co-created, implemented and scaled. The commission already saw some good examples of this in WENR, like the project Sustainability Rural Area Overijssel (Verduurzaming landelijk gebied Overijssel).

WENR can further increase the impact of its research by communicating research outputs and outcomes more actively to the broader public and by building specific partnerships to upscale proven solutions. At the moment, impact seems to be often an afterthought and not always part of the project planning. Also, stakeholders looking for latest research and proven solutions indicated that it is difficult to find an entry point to WENR.

The combination of societal needs in the field of environmental quality and the high level of expertise in the institute implies that WENR is sitting on a gold mine of potential impact and needs to look carefully at how to capitalise on that. Programme leaders could potentially play a leading role in this. Furthermore, WENR needs to develop staff competences in client orientation, and in designing and organising for impact (system aggregators) and in co-creation, facilitation and participation in impact coalitions. This needs to be addressed in a WENR Strategic Personnel Plan. At the same time, it is clear that there are several staff members who have these competences already and can be strategically assigned to projects, creating more collaboration between teams.

As a final comment the committee points out opportunities for more impact through creating internal synergies. The Statutory Research Tasks (WOT) unit, which is fully funded by the ministry, seems to be somewhat detached from other projects. Opportunities to leverage on this work seem to be missed.

Societal and economic impact: good (score 3).

Recommendations

7. *Think big and be more outspoken; provide inspirational views to the society at large. Seek hereby connection with opinion leaders in the (new) social media, such as vloggers.*
8. *Look for more strategic partnerships, multidisciplinary networks and innovative stakeholders, with whom societal programmes including research are co-created, implemented and scaled. We suggest to create a clear entry point for external stakeholders, enabling them to get access to latest research and proven solutions.*
9. *Plan for impact from the start of a research project and think about potential partners that could take the findings forward for impact at scale. For example, WENR's proven solutions can be integrated in projects, run by the NGO's, and create impact that WENR has contributed to. Without aiming to be complete, we suggest considering the following line of improvement:*
 - *Develop a methodology to monitor the impact of WENR projects in order to be able to develop track records for the 5 cross-cutting programmes and to report in a meaningful way on WENR's KPI for impact. The impact assessment methodology also deserves further consideration.*
 - *Communicate WENR's research outputs actively and provide examples of outcomes and impact. This will help to profile WENR as a well-connected and impactful research institute. As good communication is of paramount importance for a strong connection with stakeholders, we recommend developing a solid communication plan.*
 - *Capitalise more on the WENR statutory research tasks by linking this work to relevant WENR projects and programmes.*
10. *Give attention to competences needed for impact creation in a WENR Strategic Personnel Plan.*

3.4 Viability

The economic and financial status of WENR has improved over the past years as a result of the implementation of a recovery plan. The funding prospects look positive based on expected national research funding priorities as well as the relatively high success rates in funding competition, for instance EU funding opportunities. The tender support unit seems to be very efficient in this regard and it was a very wise decision establishing it. Now, with less economic constraints it might be worth revisiting the control measures and procedures to make sure the system is not over-bureaucratic.

Although WENR seems to have overcome the severe financial difficulties by developing its financial management and control, the institute has lost its economic buffer capacity during the crisis. This means that WENR – even though on the right track – is not fully recovered yet. About 50% of the budget for WENR is non-competitive public funding of which the vast majority is targeted to specific activities agreed with the funding body (ministries and agencies). Only a small part (about 10% in total) is available for activities initiated by WENR, such as new developments or co-funding requirements by the various research funding bodies WENR is approaching, for example the EU research funds. Even if funding is not an issue to the same extent now as it was a few years ago, the core funding is still very low. This may be a risk for the future.

Strategic thinking and long term visions for WENR on the thematic priorities seem to have been neglected for some time, perhaps for good reasons (recovery), but in the long run it can be a risk for staying in the forefront scientifically and with regard to impact. It was not clear who in WENR develops and champions the innovation and transformation that is needed content-wise. Where does WENR want to go? And what role does it want to play in the changing society?

The recovery plan included a restructuring of the organisation. About 2,5 years ago a matrix structure with 5 cross cutting programmes led by experienced researchers was established. All research teams and their projects are associated with these programmes. Most teams contribute to more than one programme. The new structure stimulates collaboration and increases visibility of core topics of the institute. This can create entry points for contact with the outside world. On the other hand, such a matrix structure bears the risk of becoming very bureaucratic.

The programmes promote internal collaboration, coordinate contact with the outside world, promote the programme topics and inform the relevant research teams about opportunities and ideas. The management structure of this organisational system includes quite a load of meetings and coordination activities. This may have been necessary in the beginning, but in the long run it might cause unnecessary work pressure once collaboration is a more inherent part of the organisation. The new structure seems to have been instrumental in creating necessary change and has contributed to the economic recovery. The programmes were still not sufficiently visible to the stakeholders consulted by the Review Committee, but they may turn out instrumental in engaging stakeholders at a more strategic level in partnerships. It was noted that programmes have different structures and programme leaders have different priorities and focus. This may sometimes create confusion.

The recent WUR strategy seems to have adopted the approach of cross cutting programmes as instruments to implement common visions across the Wageningen Research Knowledge Base (KB). For the time being, it is not quite clear what relation between the KB programmes and WENR programmes will be. On the other hand, WENR should not be locked into the WUR programme structure/topics, but respond to the relevant needs of the changing society.

WENR is a unique place to work, with apparently a lot of freedom; this is very attractive for researchers. The recovery resulted in a decreasing number of staff for some years, but now many teams are hiring new staff again. The staff is rather uniform with regards to age (average age over 50), gender (65% male), nationality (the vast majority is Dutch) and type of contract (>90% permanent contract). Hiring

new staff provides an opportunity to enhance a larger diversity among the staff in terms of age, gender and nationality. Recruitment seems to be the responsibility of teams with little proactive intervention by the board, which may make it difficult to achieve the intended change in diversity.

The foreseen changes in staff can be a challenge with regard to continuity for important tasks and competencies. At the same time, this is also an opportunity to increase the diversity and flexibility. The success in acquiring funding seems in some fields to result in staff capacity issues, which can cause a risk to the ability to deliver the promised output of not only the acquired research projects, but also of statutory and contracted tasks for ministries.

Performance targets seem currently to focus very much on billable hours and funding acquisition. The system may have disincentives for collaboration with other teams, research institutes etc. This makes the situation difficult for e.g. entrepreneurs to navigate and innovate.

Viability: good (score 3)

Recommendations

11. *Continue the professional approach to financial management and support and further improve the economic situation restoring an economic buffering capacity.*
12. *The core funding available for co-funding and investment in research development activities for the future should be increased to enable WENR to take new initiatives, stay at the forefront, maintain the high quality of publications and be able to engage in international (European) research projects. This is the responsibility of WUR and the Government.*
13. *Consider strategic thinking and formulation of long term visions for WENR on the content side: what is the role and contribution of WENR in / to the societal transition? What key strengths need to be developed in WENR for the next 5-10 years in order to stay at the forefront both scientifically and in relation to impact?*
14. *Maintain the programme structure and harmonise it with that of WUR. The structures of the programmes could be aligned/harmonised to make it easier for teams to navigate and get full benefit of the activities. At the same time programmes should be fit-for-purpose i.e. adaptive and responsive to expectations from partners and stakeholders as well as to networking opportunities, not creating locked structures. The programmes should be used as an entry point to engage stakeholders in strategic partnerships.*
15. *Increase diversity of the research staff and consider having more flexibility. Implementation of personnel plans including recruitment should not only be carried out by the teams but also central management and HR should be involved in order to achieve the diversity targets.*
16. *Due to the age distribution and positive economic prospects, quite significant changes in personnel can be expected over the coming years. Therefore, it is recommended to introduce a well-designed on-boarding programme for new employees. Consider also establishing internal networks such as a 'young employees' network.*
17. *Design carefully the right incentives in, for example, performance evaluation in order to achieve strategic objectives for the future development of WENR e.g. collaboration, entrepreneurship, visibility etc.*

Appendix 1 Terms of reference

Key-criteria and sub-criteria.

Key criteria	Elements to be considered / Sub criteria
<i>Especially directed towards the past</i>	
Quality <i>This criterion reflects the research quality</i> <ul style="list-style-type: none"> • as it is perceived in the professional eyes of its peers and competitors (scientific quality). • as it is appreciated by clients for usefulness and reliability. 	<ul style="list-style-type: none"> • Scientific quality • Output • Knowledge / experience / training • Esteem / authority / visibility • Strategic choices / targets • Position / share in Topsector- and EU-research programmes and other renown competitive research programmes • Client satisfaction • Collaborations that add synergy / critical mass • Acquisition strength as appears from e.g. portfolio • Case studies that indicate the research strength
Societal and economic impact <i>This criterion reflects the institute's impact</i> <ul style="list-style-type: none"> • as it appears from the knowledge utilisation by users. The evaluation is based on information about knowledge utilisation by various user groups (client questionnaires or interviews / surveys about knowledge utilisation). • as it is appearing from the efforts to promote knowledge utilisation by users. The evaluation is based on information about the actions that the TO2 institution undertakes to promote the utilisation of research results. The question about impact thus becomes a question about how the TO2 institution connects with which stakeholders. This concerns e.g. the organisation of demand-driven research for stakeholders, performing research in partnership with users, helping users to utilise the research results, etc. 	<ul style="list-style-type: none"> • Strategic relevance of research for <ul style="list-style-type: none"> – Government (contribution to national policy / Topsectors) – Private industry – Economy (contribution to innovation agenda's etc.) – Public in general (contribution to social theme's in the national policy) • Customer orientation / knowledge utilisation • Role in public debate / opinion / agenda setting • (Inter)national visibility (EU-, Topsector- programmes etc.) • Successes in economic value creation through <ul style="list-style-type: none"> – new business cases and start-ups – Intellectual property • Visibility in Steering committees / media • Volume and ratios of money flow • Customer relations in public and private arena • Collaborations with prominent knowledge institutions • Case studies (narratives) that support these indicators

<i>Especially directed towards the future</i>	
<p>Viability of the organisation</p> <p><i>This criterion reflects the attractiveness of the institute's activities towards its stakeholders and the feasibility of their strategic plans and business plans. It gives an indication of its competitive strength, the robustness of the group and its continuity.</i></p> <p><i>It also reflects the institute's abilities to operate in an efficient and effective way, supported by its management, leadership and skills of its employees.</i></p> <p><i>N.B. The market is a broad window that includes the total of customers. It includes the industrial clients but also governmental clients, NGO's and in some cases the general public.</i></p>	<ul style="list-style-type: none"> • Customer appreciation (in the past and expectations towards the future) • Strategic plan and marketing strategy (focus on needs of industry and general public) • Competitiveness • Strategic investments (strategic expertise (KB)) • Innovative strength (through examples) • Order portfolio analysis / analysis of market segments / successes in Topsector-, EU-calls, bilateral contracts • Attention for critical mass and synergy • Collaboration (internal / external) especially with the counterparts within WUR • Quality of the SWOT (focus on portfolio, staff, facilities, business model / finances) • Organisation structure • Leadership • Skilled project-/programme-leaders • Human resource management, recruiting and retaining good personnel

Appendix 2 Weighing the assessment results

The Committee has rated the performances for all main criteria on a four-point scale as denoted in the table below.

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. Its research is extremely good and 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 at 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 is of strategic influence on the economy (or policy making / 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 are of great strategic importance for the economy (or policy making / agenda setting) in the Netherlands and Europe and / or is of great use for challenges that society has to face nowadays.

Score	1	2	3	4
	Unsatisfactory	Satisfactory	Good	Very good
Viability	<p>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 not responding adequately. Decisions made on a rather ad hoc basis. Significant improvements are achievable.</p>	<p>The group has a good strategy in general but in certain parts there is room for improvement. The groups are generally well-positioned and well-equipped for the future, but shows some deficiencies. Not too innovative and not very competitive. In general, the management is quite obligatory and not too exiting. Prerequisites for achieving good quality and impact in terms of finance and staff and facilities fall short on certain places.</p>	<p>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 hasn't 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.</p>	<p>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. Group is very attractive for its stakeholders. Good strong, pro-active management. Decisions are correct and in time. The strategic plan is highly adequate and well-thought-out. Very satisfied employees and staff. Prerequisites for optimal performance in terms of finance and staff and facilities are present.</p>

Appendix 3 Programme Site visit

Day-Date	Time - event
Sunday May 19	From 15.00 onwards Arrival at Wageningen; Meeting Chair-Secretary; Review Committee (RC); Meeting First impressions RC; welcome and dinner by Vice-President WUR and WENR management
Monday May 20	09.00-10.30 Structure and strategy WENR (Board WENR) 11.00-12.30 Programmes: mission, market and impact (programme coordinator, programme team). 12.30-13.45 Lunch 13.45-14.30 Statutory research tasks: structure, mission, management (director WOT and team members) 15.00-17.00 Internal meeting RC 17.30-20.30 Stakeholder meeting; collaboration and impact (7 stakeholders from Industry, Government and NGO)
Tuesday May 21	09.00-09.30 Scientific quality; meaning of metrics (biblio-analyst) 09.30-10.30 Scientific quality (profs and potentials) 11.00-12.00 Research management (team leaders) 12.30-14.00 Lunch / meeting with teams 14.30-15.30 Viability (new researchers) 16.00-17.00 Viability (entrepreneurial researchers) 17.00-18.00 Meeting with Board, HR and finances 18.00-20.00 Internal meeting RC preparing draft conclusions 20.00 Dinner
Wednesday May 22	08.30-09.30 Internal meeting RC / preparing draft conclusions 09.30-10.00 Meeting with delegation Works Council 10.00-11.30 Presentation of preliminary conclusions to the WENR board 11.30-15.00 Finalising official presentation and draft report 15.00-16.00 Presentation provisional results to Vice President WUR and staff WENR 15.30-16.00 Farewell

Appendix 4 Brief Curriculum Vitae of the Peer Review Committee Members

Dr Ir. Han de Wit (Chair)

Member of the senior management team of Tauw and responsible for knowledge management and business development. During 2002 – 2004 he was also responsible for the water management and hydraulic engineering activities of Tauw. After obtaining his PhD at Wageningen University in 1992 in the field of environmental and soil chemistry at Wageningen University, he started to work at Tauw (www.Tauw.nl and www.Tauw.com). Tauw is an independent European consulting and engineering company specialised in the design, improvement and management of the natural environment, built environment and infrastructure. With over 700 employees in the Netherlands and 400 in other European countries, Tauw is a top 10 player in the Dutch engineering market. In addition to the activities at Tauw, throughout the years Han de Wit has been involved in several applied research and innovation initiatives, like for instance:

- Executive Board Member of RCT Gelderland (and its predecessors) (www.rctgelderland.nl) (2007-present)
- Member of the Digiteam of the DigidealGO (programme on digitalisation of the Dutch construction sector) (2018- present)
- Executive Board Member of the Climate Campus in Zwolle (2018-present)
- Ambassador of the Bouwcampus (2016- present) and Quartermaker (2012-2015)
- Chairman Bodembreed (Dutch National Soil Conference) (2008-present)

Other activities:

- Member Supervisory Board of “de Milieu en Natuurfederaties” (Dutch federations for nature and environment) (<https://www.natuurenmilieufederaties.nl/>)
- Chairman of Supervisory Board of Kunstenlab in Deventer (www.kunstenlab.nl)
- Executive Board Member of Stichting Deventer Jan Terlouwlezing (<https://www.deventerjanterlouwlezing.nl/>)

Prof. Hanne Bach

Director at DCE-Danish Centre for Environment and Energy, Aarhus University and is currently Chair of PEER: Partnership for European Environmental Research. She holds a Master in chemical engineering (cand polyt) and has held positions as director of an ecological modelling centre, research director in environmental policy analysis and lately director at DCE. In that position she is responsible for management of DCE, including management of a framework contract with the Ministry of Environment and Food, Denmark worth about € 16 mio annually. The responsibilities include strategic development of the environmental advisory services targeted national, local and European authorities within the field of environment, nature, climate and energy related aspects. It involves collaboration with relevant university research departments (Bioscience, Environmental Science, DCA – Danish Centre for Agriculture and Food and others) across Aarhus University to implement and further develop the environmental advisory services as well as collaboration with external partners, national and international. She has extensive management experience including management of environmental advisory services, management of research on environmental analysis, research strategy development, project management, human resource management and economic management. She has broad experience with environmental studies, environmental impact assessment studies and State of Environment Reporting as well as experience with integrated environmental assessments including analysis of the societal sectors and transdisciplinary analysis of the society.

Prof. Lea Kauppi

Director General of the Finnish Environment Institute (SYKE), a multidisciplinary environmental research institute since 1995. She received her PhD from the University of Helsinki in 1984. Her research focus has been on agricultural pollution of rivers and lakes, modelling of impacts of acidification, impacts of climate change as well as management of transboundary waters. She has a long experience on working at the science –policy interface related to various environmental issues. She has participated in evaluations of EU RTD Framework programmes and been a member of evaluation panels of various research institutions and research programmes in Europe. She is also actively involved in the development of research infrastructures at the national as well as European level. Since 2016 she is a member and since 2018 a vice-Chair of the council of the International Institute for Applied Systems and was a member of the International Resource Panel of UNEP in 2008-2016.

Dr Arjen Mulder

Head of Knowledge Management & Learning in Solidaridad Europe. In this role he is responsible for the continuous improvement of planning monitoring and evaluation processes and building a knowledge base to deliver effective and relevant programming. He is leading the development of research projects with knowledge partners, the development of knowledge products and the design and implementation of learning trajectories for Solidaridad Europe staff. In the past, he has successfully strengthened planning monitoring and evaluation systems and processes in international NGOs like War Child, Oxfam Novib, the Netherlands Red Cross, and VSO. For these organizations he worked and lived in the Netherlands, Southern Africa, and Central America. In all his work, he is driven by critical questions: Why do we do the things we do? What is the evidence that we have any impact? What have we learnt? His aim is always: provide colleagues with more insight, increase the learning.

Drs Hein Pieper

Dijkgraaf (chair) of Waterschap Rijn en IJssel (Water Board Rijn en IJssel) since 2011 and Vice-Chairman of the Unie van Waterschappen (Dutch Water Authorities) since 2015, with the international and innovation portfolio. In these positions he connects parties and partners, thereby putting water and water management on the international, national and regional agenda.

Institutional positions (selection):

- Chairman of core team Human Capital of the Topsector Water (2014)
- Member of the Board of EUREGIO (2015)
- Member of the core team of the Topsector Water (2015)
- Member of the Board of NWP (Netherlands Water Partnership) (2015)
- Member of the core team export and promotion of the Topsector Water (2015)
- Union representative EUWMA (European Union of Water Management Associations) (2016)
- Vice-chair of the Supervisory Board of Kenniscentrum [knowledge centre] Europa Decentraal (2015)
- Member of the EIP Water High Level Steering Group (2015)
- Member of the general meeting of shareholders NWB Bank (2011)
- Chairman of the Board of the NWB fonds (fund) (2015)

Other positions (selection):

- Member of the Supervisory Board of the Hogeschool (University of applied science) Van Hall Larenstein (2012)
- Chairman of the Supervisory Board of the Saxenburgh Groep (2014)
- Member of the House of Representatives of the Netherlands (2009 – 2010)
- Director VKMO/Katholiek Netwerk (Catholic network) (2000 – 2009 and 2010 – 2011)

Prof. Peter de Ruiter

Emeritus professor (since January 1, 2019) at the Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam and Professor Biometris, Wageningen University (0.2 fte). Peter de Ruiter received his PhD in Ecology at Utrecht University in 1987. He worked at the Department of Agricultural Research (DLO-WUR), before he was appointed as full professor Environmental Sciences (UU). Thereafter he was head of the Soil Science Centre (WUR) and scientific director of the Institute for Biodiversity and Ecosystem Dynamics (UvA) where he retired on Dec 31, 2018. At present he is affiliated part-time to Biometris (WUR). His research interests are in the field of (i) structure and stability in complex communities (food webs) and how this relates to the preservation of biological diversity, ecosystem functioning and environmental quality, and (ii) the occurrence of ecological 'tipping points' and 'sudden shifts' in arid ecosystems leading to desertification and how this has impact on food security. He has been a member of the Scientific Advisory Board of Delft Cluster (Delft, NL), Committee for Environment and Water Province Utrecht (Utrecht, NL), the Royal Academy of Sciences (KNAW) Committee Global Change (Amsterdam, NL), the Technical Committee for Soil Protection (the Hague, NL) and the Intergovernmental technical Panel on Soil (World Food Organisation FAO, Rome). He was member of the visitation committee of the Institute for Water and Wetland Institute (Radboud University (Nijmegen, NL) and of the Institute for Integrative Diversity Research iDiv (Leipzig, Germany). In June 2019 he will be member of the visitation committee of the Institute for Global Food Security of the Queen's University (Belfast, UK).

In 2013 he received the Humboldt-Forschungspreis for '*Ihnen Anerkennung Ihrer bisherigen herausragenden Leistungen in Forschung und Lehre*'.

Dr Jean-Francois Soussana

Vice-President for international affairs at INRA, Paris, France, since March 2017. He obtained his PhD in plant physiology at USTL Montpellier in 1986 after an engineer degree in agronomy. After becoming a senior scientist, he led a research lab on grassland ecosystems and global change and was Scientific Director for Environment at INRA (2010-2017). Since 1998, Dr. Soussana is member of the Working Group II of IPCC and was Lead Author for the 3rd, 4th and 5th Assessment Reports and shared with all IPCC authors the Nobel Prize for Peace in 2007. He contributes to scientific expertise for FAO (e.g. State of Food and Agriculture, 2016). He has coordinated national and European (EC FP5 and FP7) research projects on climate change and agriculture. He co-chairs the Integrative Research Group of the Global Research Alliance on agricultural greenhouse gases (46 countries) and the Steering Council of AgMIP, an international modelling programme on climate change impacts on agriculture. Dr. Soussana has led the sectorial committee on ecosystems and sustainable development of the French research agency (ANR) and the scientific advisory board of the joint programming of research by 21 European countries on agriculture, food security and climate change (FACCE JPI). He coordinates the research strategy of INRA on agroecology. He is also a member of the Scientific and Technical Committee of the Lima-Paris initiative "4 per 1000. Soils for Food Security and Climate" which was signed during the climate negotiations of COP21.

Dr. Soussana has published close to 150 refereed research papers in international journals, cited 7,000 times, as well as two books and a dozen of book chapters. He has developed novel experimental and mathematical modelling approaches to the impacts of global change on agriculture, soils, biodiversity, carbon and nitrogen cycles and greenhouse gas emissions.

To explore
the potential
of nature to
improve the
quality of life



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The mission of Wageningen University & Research is "To explore the potential of nature to improve the quality of life". Under the banner Wageningen University & Research, Wageningen University and the specialised research institutes of the Wageningen Research Foundation have joined forces in contributing to finding solutions to important questions in the domain of healthy food and living environment. With its roughly 30 branches, 6,200 employees and 12,000 students, Wageningen University & Research is one of the leading organisations in its domain. The unique Wageningen approach lies in its integrated approach to issues and the collaboration between different disciplines.

