

Preliminary* English Summary of the
'Making the scientific system sustainable'
report by
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(*Unreviewed DeepL translation)

Introduction

The transition analysis on making the science system more sustainable has resulted in a comprehensive document on the integration of sustainability into teaching, research and operational management of universities, universities of applied sciences and institutes affiliated with NWO and KNAW. It includes an analysis of the transition, the current regime, persistent problems and the niche surrounding sustainability that is already emerging. Leverage points have also been identified.

This report was drawn up by Het Groene Brein and the Rathenau Institute. The research question was formulated by the sustainability sounding board group of Dutch universities and universities of applied sciences and originated from a call for input from the wider professional community of lecturers, researchers and others at universities, universities of applied sciences and the institutes of NWO and KNAW. Where the term 'we' is used in this text, it refers to the authors – Het Groene Brein and the Rathenau Institute – not to the sector as a whole.

The analysis has a threefold aim. Firstly: to construct a shared understanding of how the research system functions and where efforts to make it more sustainable may be stalling. Secondly: to identify opportunities and points of leverage for systemic change. Thirdly: to contribute to a common language through which administrators, researchers, lecturers and policymakers can engage with the transition challenge.

The summary below briefly sets out the key findings for four target groups. Despite this breakdown of recommendations by target group, it is essential to ensure that collaboration between the various target groups remains central, particularly in areas that cut across target groups. Target groups without a 'dedicated' summary are also essential. Sustainability coordinators play a key role in shaping and driving sustainability within the core processes of their own organisations; teaching, operational management and research. The report also emphasizes the importance of the voice of future generations and of the planet as an integral and essential part of the decision-making process. In this regard, it is important that collaboration and collective action are recognised, encouraged and safeguarded.

Summary 1 – Governing bodies (Executive Board, deans, institute directors, Supervisory Boards)

Since the 1970s, sustainability has been on the agenda of (international) forums. In politics, business, education and research, there is a strong focus on combating climate change and ensuring that planetary boundaries are not exceeded. Universities, universities of applied sciences and institutes affiliated with NWO and KNAW occupy a unique position in this context. They educate future leaders, professionals and citizens. They produce the knowledge required for societal transitions. And they have a significant carbon footprint of their own. In the transition analysis, we demonstrate how the role of the science system in promoting sustainability is currently taking shape.

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Netherlands Organisation for Scientific Research (NWO). Collectively, this group served as a sounding board during the preparation of this report. The report was funded by KIN and NWO. Below is a summary of the analysis for senior management.

The mirror

Virtually all institutions have included sustainability in their visions or ambitions. Furthermore, there are numerous initiatives that seek to integrate sustainability in research, education and operational management. These range from initiatives within individual institutions to joint initiatives such as the HBO SDG Coalition, the 'Learning for Tomorrow' Cooperative and the Network of Sustainability Coordinators at UNL. At the same time, practice reveals a pattern: non-binding visions, policy documents that fail to reach the wider staff, sustainability coordinators with a limited mandate, and an agenda in which sustainability must compete with geopolitics, digitalisation, knowledge security and budget cuts. The gap between ambition and day-to-day practice is wide and persistent.

This gap is not the result of unwillingness or poor governance. It is a systemic feature: the governance of the Dutch higher education system has historically been geared towards specialised knowledge production and the training of professionals, not towards integrated, cross-disciplinary challenges. What constitutes a strategic direction for an Executive Board is, for a lecturer, researcher, programme manager or programme committee, simply another policy document in their inbox. Due to high and rising workloads, they do not get round to addressing it, unless, for example, there are concrete financial consequences. You cannot bridge that gap with a better vision statement.

The systemic diagnosis from an administrative perspective

Three observations emerge from the analysis that directly affect administrators.

sustainability has no natural owner in the current system

No single actor bears ultimate responsibility for sustainability – not the Executive Board, not the dean, not the director, not the sustainability coordinator, not the individual researcher or lecturer. Everyone contributes, but no one owns it. This makes sustainability vulnerable to being sidelined as soon as other priorities have a clear owner (such as geopolitics for security and risk officers). For leaders, this is not merely a diagnosis but a call to action: how do you organise ownership for a challenge that is, by definition, everyone's responsibility, without reducing it to the job description of a single coordinator?

The transition paradox is a governance challenge

The system invests in improvements that preserve the status quo – more efficient reporting, smarter indicators, additional coordinators – whilst the underlying structures remain untouched. Improvement thus becomes a way of avoiding the need for fundamental change. This pattern can be interrupted first and foremost by senior managers, by linking consequences to ambitions. In this regard, it is vital to build on the many initiatives that already exist, both within universities, research institutes and universities of applied sciences and beyond. And it is important to give those initiatives greater strength, structure and mandate. 'Walk the talk' is not just a buzzword in this context, but the difference between an institution that drives the transition and one that merely proclaims it and then leaves staff to get on with the work without a clear mandate.

The narrative on sustainability has been narrowed in governance discourse.

In strategic plans and public statements, 'sustainability' often refers primarily to operational matters: solar panels, ESG reporting, energy-neutral buildings by 2050. These are legitimate topics, but they leave the core tasks – research and teaching – untouched. As long as language perpetuates narrowing the focus, the challenge of the transition cannot be properly addressed. At the meeting on 13 April, this was identified as one of the most fundamental bottlenecks: the narrative must change first; otherwise, nothing will change.

The four levers for change assessed from an governance perspective

The report ultimately identifies four levers. Not all four levers in Chapter 6 carry equal weight. We list them here in order of importance for the role of decision makers

- Coordination (lever 1) directly concerns managerial responsibility: participation in a sectoral structure is a managerial decision, and 'walking the talk' requires internal implementation. Previous coordination initiatives have foundered precisely on this point.
- Narrative (button 4) is very much a management issue. How 'sustainability' is framed in public and internal communications shapes where the organisation directs its energy. Managers either champion the narrative internally or undermine it – there is no neutral position here.
- Funding and recognition (button 3) is primarily a matter for the Ministry of Education, Culture and Science (OCW), the Royal Netherlands Academy of Arts and Sciences (KNAW), the Netherlands Organisation for Scientific Research (NWO) and the umbrella organisations, but senior management determine how this is implemented internally. Career paths, the division of responsibilities and the recognition of team science fall within the remit of Executive Boards, institute directors and deans.
- Teacher training and quality assurance (button 2) affect administrators indirectly, but they do play a crucial role here: allocating time and resources for teacher development, providing scope for experimentation, and exercising administrative leadership that legitimises and supports change agents.

Action perspectives

The analysis highlights a number of action perspectives for administrators. These are divided into short-term (1 year), medium-term (2–3 years) and long-term (5 years and beyond).

The short term calls for adjustments within existing frameworks

- Avoid using 'sustainability' as an all-encompassing term in strategic documents without further clarification. In internal and public communications, make it clear whether the focus is on operational management, research, teaching or the organisation as a whole, and specify which aspects of sustainability are being addressed. Request the same from deans, directors and programme coordinators.
- In the institutional budget, systematically allocate time and resources for staff development for sustainability.
- In doing so, value the role of the sustainability coordinator, as they are a key anchor within the organisation and play an essential role in putting initiatives into practice. However, it is important to assign internal ownership that extends beyond the role of the sustainability coordinator. Experience shows that a task assigned exclusively to a single role is vulnerable.

Therefore, ensure there is a sustainability coordinator whilst also embedding the role more broadly within the organisation.

- Discuss with your Supervisory Board how sustainability is weighed in supervision and accountability – as a separate theme or integrated into strategic monitoring.

The medium term calls for new, broadly supported agreements

- Actively contribute to a sectoral coordination structure (button 1) and be prepared to implement agreements internally – even if they are not directly in line with existing policy or budgetary cycles.
- Broaden career paths and job profiles at institutional level, in line with national agreements (button 3). Ensure that team science, impact and transdisciplinarity are given real weight in appointments and promotions.
- Help shape a sector-wide core narrative (button 4) – including planetary health or a comparable integrative framework – in governance and public engagement.

A long-term approach requires a redesign of the system

- Together with UNL, UMC-NL and VH, support a reassessment of the funding system where it currently structurally hinders the transition; first funding stream – per-student funding, the decoupling of funding streams between higher professional education (HBO) and university education (WO), funding based on quantity, and little scope for transdisciplinary research
- Embed decisions on phasing out activities as a legitimate part of strategic planning. Have the courage to decide what the institution will no longer do.

Tensions affecting administrators

The points above will undoubtedly give rise to tensions, and leaders- decision makers can play a key role in resolving them.

- Tensions between institutional interests and sectoral interests. Coordination requires concessions in terms of institutional profiling – this tension is real and has its place in the discussion.
- Tensions between short-term indicators (student numbers, progression rates, rankings) and the long-term challenge of the transition. A leader who must deliver on both simultaneously cannot wait for better indicators.
- Tensions between improvement and choice. The system's temptation is to optimise within existing structures. The transition sometimes requires us to stop doing certain things – even if this initially results in a loss. This calls for a collective vision and courage.

Open questions for leaders- decision makers

- How do we organise ownership of sustainability at institutional level without reducing it to a single coordinator – and without assigning responsibility everywhere and nowhere?
- What ability does the Supervisory Board have to consider sustainability as a supervisory issue, and how does this relate to the Executive Board's strategic autonomy? How do the boards of NWO and KNAW address this in their discussions with the institute directors?

- What is the normative framework for collaborations with sectors that must undergo a major transition and/or phase-out (such as the fossil fuel industry and intensive livestock farming)? This question was explicitly raised at the conference and requires a clear governance perspective.
- How do we involve the representative bodies – students and staff – in this challenge as critical partners, without shifting responsibility?

Summary 2 – Policy-makers and funders (Ministry of Education, Culture and Science, NWO, KNAW, NVAO, umbrella organisations)

Since the 1970s, sustainability has been on the agenda of (international) forums. In politics, business, education and research alike, there is a strong focus on combating climate change and ensuring that planetary boundaries are not exceeded. Universities, universities of applied sciences and institutes affiliated with the KNAW and NWO occupy a unique position in this context. They generate the knowledge required for societal transitions. They educate future leaders, professionals and citizens. And they have a significant carbon footprint of their own. In this transition analysis, we demonstrate how the role of the science system in promoting sustainability is currently taking shape.

This report was prepared by Het Groene Brein and the Rathenau Institute. This report arose from a joint scoping session involving sustainability coordinators from Universities of the Netherlands (U-NL), the Royal Netherlands Academy of Arts and Sciences (KNAW), the Green Young Academy (GYA), the HBO SDG Coalition, the Ministry of Education, Culture and Science (OCW), the Sustainable Development Solutions Network (SDSN), the Dutch Climate Research Initiative (KIN) and the Netherlands Organisation for Scientific Research (NWO). Collectively, this group served as a sounding board during the preparation of this report. The report was funded by KIN and NWO. Below is a summary of the analysis for policymakers and funders.

The mirror

Those who work on the frameworks of the research system – funding, accreditation, research funding and the culture of recognition and appreciation – are at the very heart of where systemic change must be anchored. At the same time, this is also where tensions are most evident. The current levers are not primarily geared towards sustainability. Recognition and Appreciation, Open Science and team science are gradually being embedded across all institutions, but their impact remains limited. Budget cuts are putting pressure on precisely those functions that the transition requires. And within European frameworks – the Green Deal, Horizon Europe – knowledge institutions are not sufficiently recognised as stakeholders.

What will be recognisable in this context is the realisation that whilst many of these levers are assigned to different players, they are rarely coordinated. The Ministry of Education, Culture and Science (OCW) sets funding levels, whilst the Netherlands Organisation for Scientific Research (NWO) and the Royal Netherlands Academy of Arts and Sciences (KNAW) do so for their respective institutes. NWO organises calls for proposals, the Dutch-Flemish Accreditation Organisation (NVAO) oversees the accreditation of study programmes, and umbrella organisations negotiate on a sectoral basis. Each operates according to its own logic, pace and mandate. Initiatives seeking to foster connection and coherence in this area, such as 'Het Groene Brein' and 'Leren voor Morgen', have often emerged outside the established framework and lack a mandate within the system. The analysis shows that it is precisely the fragmentation of these levers that constitutes one of the structural barriers. No single actor has the mandate to realise the transition on its own, and coordination between the levers themselves is not a given.

The system diagnosis from a policy perspective

Three observations from the analysis directly affect this target group.

Mission-driven programming does not automatically lead to mission-driven implementation.

The Dutch system features mission-driven elements, such as NWA pathways, KIAs and thematic programming. As a specific funding stream, NWO has the 'Innovation Accelerator | NWO' and the coordinating bodies KIN (including the 'Science in Transition' programme) and SIA. Intensive work is being carried out here on methods to encourage transdisciplinary working and societal impact. However, a clear programmatic approach is still not sufficiently recognised in the field. This is partly because, when using individual assessments in call procedures, the programmatic approach is not always taken as the central starting point. These assessments remain largely embedded in disciplinary and competitive logic. This is also evident from NWO's institutional evaluation. NWO programmes rely heavily on university-based fundamental research, as a result of which researchers involved in more practice-oriented and impact-driven initiatives feel less well supported. The tension between independent research and thematic steering persists. At the same time, practice-oriented research is growing rapidly, particularly at universities of applied sciences, and these institutions are gaining, partly due to thematic and mission-driven funding from NWO, an increasingly important position within the knowledge and innovation system.

In short, despite initiatives promoting sustainability, transdisciplinary work and practice-oriented research, the directional focus is often lost because the evaluation system continues to prioritise disciplinary output. Alternatively, there is a lack of active programme management. What is positioned as a mission is often reduced, in practice, to conventional science with a sustainability label. The transition analysis identifies this as one of the most persistent patterns. It is therefore crucial to build on the many initiatives that already exist, both within universities, research institutes and universities of applied sciences and beyond, and to provide them with more structural funding, including the necessary networks.

There is no systematic framework for assessing transdisciplinary and transition-oriented work.

In the absence of a workable assessment framework, the system funds 'business as usual'. There are initiatives at NWO and KIN that contribute to transdisciplinary work; from Citizen Science to NECTR. These can be seen as experiments which, however, as yet only stimulate the debate surrounding transdisciplinary and transition-oriented work to a limited extent. For funders, this is not a technical question but a design question: how can funding and assessment be structured in ways that dare to be different, without creating a box-ticking culture? And once programmes are underway, how can they be supported and evaluated in a manner that is both appropriate and effective?

Sustainability and the ongoing change processes are not yet sufficiently linked.

Recognition and Appreciation, Open Science, team science and transdisciplinary research all touch upon the same systemic characteristics that also hinder sustainability efforts. The synergy is real, but so far has mainly existed on paper. At the conference, organised as part of the transition analysis, a strong case was made for actively linking these processes – not to organise sustainability as a parallel track, but to harness the levers that are already slowly shifting for the transition as well.

The four levers assessed from a policy perspective

For this target group, all four levers carry significant weight, but in different capacities.

- Funding and recognition (lever 3) is primary and acts as the key driver. This is where most work lies: NWO through calls for proposals and assessment; the Ministry of Education, Culture and Science (OCW), NWO and the Royal Netherlands Academy of Arts and Sciences (KNAW) through funding and performance agreements; KNAW, NWO and the umbrella organisations through 'Recognition and Valuation'; and umbrella organisations through sectoral agreements, for example on career paths. Without progress here, the other levers will have no impact.
- Coordination (lever 1) is managerial and strategic. Who funds collaboration at national level, who grants the mandate, and who links up with the programming (NWO)? Without a supportive role from OCW and broad backing from policymakers, any structure remains non-binding.
- Teacher training and quality assurance (button 2) affect this target group via the NVAO (accreditation), the umbrella organisations (BKO+, sectoral professionalisation) and the Ministry of Education, Culture and Science (OCW) (funding for teacher development). With an explicit warning from the conference: beware of the reflex to try to solve everything via a new accreditation framework.
- Narrative (button 4). The way in which OCW, NWO, KNAW, the NVAO and umbrella organisations discuss sustainability in policy documents and calls for proposals shapes the sector-wide debate. Policymakers and funders can help to shape this narrative. Policy that treats 'sustainability' as a compliance term perpetuates this narrowing of focus. Policy that frames sustainability as a knowledge-based issue opens up new possibilities.

Action perspectives

The analysis highlights a number of action perspectives for funders and policymakers. These are divided into short term (1 year), medium term (2–3 years) and long term (5 years and beyond).

The short term calls for adaptation within existing frameworks

- Integrate sustainability appropriately into NWO calls and front-line funding. Ensure that the sector can respond to the call in a meaningful way and support the capacity-building required to do so. With explicit attention to the details: do the calls reflect the narrative of a knowledge question, or do they turn into compliance forms? Mandatory implementation and impact sections in grants are also part of this.
- Launch a team assessment pilot for at least one large-scale programme, with a fair retrospective evaluation.
- Reduce transaction costs for transdisciplinary applications: ask for less information in advance, allow room for adjustments during the project, and use work plans rather than strictly pre-defined work packages. Also ensure more funding opportunities for parties with practical knowledge.
- Explore in concrete terms the continuity of transition funding that is currently coming to an end – the Ministry of Health, Welfare and Sport's (VWS) Green Deal for Sustainable Care ends at the end of 2026 and explicitly requires a follow-up.
- Actively link the ongoing 'Recognition and Appreciation' movement to the transition agenda

- Initiate a sector-wide dialogue between the Ministry of Education, Culture and Science (OCW), the Netherlands Organisation for Scientific Research (NWO), the Netherlands Accreditation Organisation for Higher Education (NVAO), the Royal Netherlands Academy of Arts and Sciences (KNAW) and sector umbrella organisations on how to bring together the experiments and reforms currently running in parallel.

The medium term calls for agreements

- Broaden career pathways and job profiles at sectoral level (jointly by UNL, VH and KNAW), with explicit recognition of team science, impact, transdisciplinarity and non-academic roles.
- Develop a joint normative framework and shared definition of societal impact, including criteria and guidelines concerning both the phasing out and the development of practices
- Design programmes based on transition practice: non-competitive thematic calls that invite coalitions, rather than pitting them against one another.
- Streamline funding streams for teaching and research in higher professional education, so that lecturer-researchers can fulfil multiple roles under a single employment relationship.
- Address the legal barrier preventing NWO from directly funding societal partners at a political level – this requires an initiative from the Ministry of Education, Culture and Science (OCW).
- Work with the NVAO to embed sustainable development in accreditation criteria in a guiding manner, whilst allowing explicit scope for experimentation. Ensure that the NVAO and accreditation panels possess the necessary expertise in sustainability.
- Secure a mandate and structural funding for a sectoral coordination structure (option 1), with agreements on ‘walking the talk’ among participating institutions.

A long-term approach requires a redesign

- Re-evaluate the funding system where it structurally hinders the transition – per-student funding, the decoupling of funding streams between higher professional education (HBO) and university education (WO), funding (partly) based on quality, with explicit differentiation between types of institution.
- Explore a more far-reaching democratisation of the review system: academia and society as equal voices at the table.
- Embed decisions to phase out programmes as a regular part of programme planning – not just what we add, but also what we scale back or discontinue. This is administratively much more demanding than adding programmes, but without this shift, programme planning fuels the transition paradox.

Tensions that this target group can resolve itself

- Tensions between ‘business as usual’ and bureaucratisation. The core tension in funding and evaluation. Without a new system, we fund what we were already doing; with a new system, there is a risk of a tick-box culture. The design question is how calls for proposals can provide direction without piling a new layer of conditions on top of existing ones.
- Tensions between autonomy and coordination. Institutions have strategic autonomy, but system-wide change requires sector-wide agreements that sometimes run counter to that autonomy. The question is not whether steering is necessary, but under what conditions it can be legitimate and effective.

- Tensions between short-term politics and long-term challenges. Budget cuts, changes of government, geopolitical shocks – these all affect prioritisation. A reform agenda that can only survive under stable policy is no agenda at all. The challenge, therefore, is how to keep the transition moving forward in changing political and social circumstances.
- Tensions between the impulse to create a new framework and the need for guiding institutional anchoring. As with the other levers, the following applies here: not all structural change needs to be achieved through accreditation or formal frameworks. Sometimes, mandates, funding and administrative agreements better address the tension between institutional anchoring and scope for experimentation.

Open questions for policymakers and funders

- How do we bring the reforms currently being pursued in parallel by the Ministry of Education, Culture and Science (OCW), the Netherlands Organisation for Scientific Research (NWO), the Netherlands Accreditation Organisation for Higher Education (NVAO), the Royal Netherlands Academy of Arts and Sciences (KNAW) and the umbrella organisations into coherence, without creating a new layer of coordination that itself reproduces fragmentation?
- What amendments to the Market and Government Regulation Act (WM&O) are needed to enable transdisciplinary collaboration with societal partners? Who will put this on the political agenda?
- How do we actively and visibly link the transition agenda to the ongoing ‘Recognition and Valuation’ initiative, rather than treating it as a parallel track?
- How do we embed systemic and long-term thinking within policy and funding streams, and can practical examples be incorporated?
- What form of differentiation between types of institution (universities of applied sciences, universities, KNAW and NWO institutes) is appropriate to their role in the transition, and how is that differentiation funded?
- How do we organise phasing out – ceasing to fund or programme what is no longer appropriate – as a legitimate part of policy? This was explicitly mentioned at the conference and requires political backing.

Summary 3 – Researchers (universities, universities of applied sciences, institutes)

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The mirror

Many researchers are already working on sustainability – sometimes explicitly, often as an integral part of their discipline. Thousands of researchers at universities, universities of applied sciences and research institutes work on this theme every day. There are also overarching initiatives such as the Dutch Academic Network for the Circular Economy (DAN-CE), lecturers' platforms focusing on sustainability, Het Groene Brein and the SENSE research school.

At the same time, practice reveals a familiar pattern: transdisciplinary work clashes with disciplinary publication cultures, societal impact is difficult to assess, and those who venture off the beaten track take personal risks without a safety net. The people who work hardest to bring about systemic change are often the hardest hit by the very system they are trying to change. The DRIFT case study in this analysis is a poignant example of this, but by no means an exception.

What will be recognisable in this position is the realisation that whilst the substantive relevance of transition-oriented research is hardly in dispute, the framework surrounding it – funding, assessment, career paths, division of labour – continues to reward what it has always rewarded. And the realisation that waiting for systemic change is a costly strategy for those currently trying to build a career.

The system diagnosis from a researcher's perspective

Three observations from the analysis directly affect researchers.

The incentives reward optimisation and discourage transformation.

Career paths are built on disciplinary publications. Assessment focuses on individual output. Grants operate with co-funding requirements, strict work packages and synchronised timelines that exclude transdisciplinary coalitions. Those who take the trouble to secure funding with unorthodox partners

bear higher transaction costs than those who remain within their own discipline. The 'Recognition and rewards' initiative has been attempting to reverse this for years, but its impact on Dutch research culture remains limited for the time being.

There is no assessment framework for transdisciplinary and transition-oriented work.

At the meeting on 13 April, this was articulated as a key tension: as long as there is no workable system for assessing transdisciplinary work on its own merits, the system will fund 'the usual'. For individual researchers, this means that the quality of their work is measured against criteria for which it was not designed. This is not an error in assessment but a systemic feature – and it makes deviation structurally vulnerable.

The role of science itself is in flux, and this affects researchers personally.

During the meeting, some pointed remarks were made: the pretence of objectivity, the discomfort with subjectivity, the question of whether there is still genuine academic freedom in a polarised field, and the question of whether collaboration with the fossil fuel and related sectors is compatible with the transition challenge. For researchers, this is not an abstract debate but a daily question: how do I relate my work to a world that is undermining the value of science, without becoming either naïve or activist? The analysis shows that detachment is itself a stance, and that the notion of neutrality offers less protection than it intends.

The four levers of change, assessed from a researchers' perspective

- Funding and recognition (button 3) is the most immediately experienced issue for researchers. Career paths, grant systems, assessment methods, team science – changes in this area determine whether transition-oriented work can be a career path or remains an individual heroic act.
- Narrative (button 4) affects researchers' understanding of their role. How do we position our discipline within a transition context? Which forms of knowledge do we recognise as legitimate? How do we deal with the tension between ideals of objectivity and the actual intertwining of science with social and economic interests? This is not a peripheral issue, but part of what it means to be a researcher today.
- Coordination (button 1) affects researchers through visibility and connection. A connecting infrastructure can help to make critical mass visible (a recurring theme from the conference), share knowledge between institutions and link niches without neutralising them. For researchers in transdisciplinary labs or sustainability coalitions, this is the difference between operating in isolation and being part of a learning field.
- Training and quality assurance (button 2) affects researchers indirectly, except for the significant group who also teach (associate professors, senior lecturers, professors in university education; lecturers in higher professional education). For them, the separate funding streams for research and teaching represent a structural bottleneck that was explicitly highlighted at the conference.

Action perspectives

The analysis reveals a number of action perspectives for researchers. These are divided into short-term (1 year), medium-term (2–3 years) and long-term (5 years and beyond).

The coming year – innovate within existing frameworks

- Raise the profile of transdisciplinary and transition-oriented work within your own institution – through a research chair, a research group, or a network operating at sectoral level. A great deal is already happening. Work together to raise its profile. Visibility was identified as a concrete starting point at the meeting on 13 April.
- Formulate research questions partly on the basis of transition practice and not solely on the basis of disciplinary programming. Seek collaboration with practice partners, NGOs and non-academic actors – even if this initially increases transaction costs.
- In grant applications, explicitly state which forms of knowledge you are drawing on and how you are organising co-creation. Not as a compliance add-on, but as a quality criterion for your own research.
- Advocate within your department, research group, faculty or institute for ‘team science’ as a genuine assessment criterion – including in appointments and promotions.
- Get involved with your professional association, umbrella organisation or the ‘Recognition and Appreciation’ discussions at your institution. Change here is only possible if researchers themselves exert pressure.
- Train researchers in their role within a constantly changing world

Medium term. Work towards new agreements

- Build structural partnerships with non-academic partners that last longer than a single project cycle. Continuity is key to many niches – it is precisely this continuity that you must actively organise.
- Make a concerted effort to establish exnovation, de-implementation and phasing out as legitimate fields of research. During the conference, this emerged as a strikingly neglected agenda item.
- Actively link your work to ongoing change processes (Open Science, Recognition and Valuation, team science). Synergy does not arise spontaneously and requires researchers to define their own positioning.
- Develop your own capacity for reflection on the position of science within a political and social context. The philosophy of science and the socio-political context of science are not luxuries – they are prerequisites for being able to articulate your own role.

Long term. This requires a redesign of the system

- Contribute to a reassessment of what constitutes scientific quality. This is not merely a matter for funders and administrators; it is a matter for the scientific community itself.
- Articulate what the discipline contributes to a transition economy – as individual researchers, as a group, and as a discipline. Without such articulation, the discipline’s position remains dependent on external definitions.

Tensions affecting researchers

- Tensions between the academic conception of one’s role and political positioning. The idea of objectivity is a deeply rooted value. At the same time, the analysis shows that impartiality itself is a position. The question is not whether you take a position, but which one and on what grounds.

- Tensions between career realities and transition work. The system still primarily rewards disciplinary output. Those who deviate too far run a risk; those who conform feed the system that blocks change. How one navigates this is not a technical question but a personal judgement that has collective consequences.
- Tensions between individual commitment and systemic change. Much transition work currently rests on individuals. That is unsustainable – but neither is waiting for systemic change in the meantime. The tension between what you are doing now and what the system ought to support is part and parcel of the role.
- Tensions between specialisation and integration. Excellence within a discipline and integration across disciplines require different skills and different assessment frameworks. A one-sided move towards transdisciplinarity fails to do justice to specialist depth (after all, inter- and transdisciplinarity exist by virtue of disciplines); a one-sided defence of the discipline fails to do justice to the transition challenge.

Open questions for researchers

- How do I position my field – my discipline, my research group – in relation to transition issues, and what are the implications for my research agenda?
- Which collaborations with external parties are legitimate in the current climate? Where do my personal and professional boundaries lie, and how do they relate to my institution's position?
- How do we organise a critical mass of transition-oriented researchers, so that deviating from the norm as an individual is no longer a solitary endeavour?
- How does the personal risk of deviating relate to collective action – via a professional association, umbrella organisation or institutional board?
- Which forms of knowledge do I recognise as legitimate in my own work, and what implications does this have for methodology and collaboration?

Summary 4 – Lecturers and those involved in education

Since the 1970s, sustainability has been on the agenda of (international) forums. In politics, business, education and research, there is a strong focus on combating climate change and ensuring that planetary boundaries are not exceeded. Universities, universities of applied sciences and institutes affiliated with NWO and KNAW occupy a unique position in this context. They educate future leaders, professionals and citizens. They produce the knowledge required for societal transitions. And they have a significant carbon footprint of their own. In the transition analysis, we demonstrate how the role of the science system in promoting sustainability is currently taking shape.

This report was prepared by Het Groene Brein and the Rathenau Institute. This report arose from a joint scoping session involving sustainability coordinators from Universities of the Netherlands (U-NL), the Royal Netherlands Academy of Arts and Sciences (KNAW), the Green Young Academy (GYA), the HBO SDG Coalition, the Ministry of Education, Culture and Science (OCW), the Sustainable Development Solutions Network (SDSN), the Dutch Climate Research Initiative (KIN) and the Netherlands Organisation for Scientific Research (NWO). Collectively, this group served as a sounding board during the preparation of this report. The report was funded by KIN and NWO. Below is a summary of the analysis for lecturers, educational developers and others directly involved in education.

The mirror

The provision of sustainability education is extensive and growing, but it remains a choice – not mandatory or integrated. There are hundreds of master's, bachelor's and minor programmes focused on sustainability. However, in more general degree programmes such as finance, economics or law, attention to sustainability is still often lacking. Many lecturers wish to incorporate sustainability into their teaching, and are already doing so, sometimes explicitly, often within the content of their own subject. There are also overarching initiatives in this area, such as 'Students for Tomorrow', the HBO SDG Coalition, the network for sustainability in university education and more. At the same time, practice reveals a familiar pattern: there is a lack of time, pedagogical support is limited, assessment frameworks exclude transdisciplinary and transformative work, and pioneers often work alone. Pioneers also often work outside existing formal structures in order to achieve results. What the wider group of colleagues needs to be able to move forward has not yet been provided for within the system.

What will be recognisable in this situation is the realisation that individual commitment often does not match limits set by timetables, teaching blocks, formats, assessment criteria and budgets. And the realisation that whilst the desire to move with the changes is present, the language used to present sustainability – 'must', 'regulations', 'compliance' – does not always encourage people to take the first step. The analysis shows that the obstacles do not lie primarily with individual lecturers, but in the system surrounding them.

The systemic diagnosis from the lecturers' perspective

Three observations from the analysis directly affect lecturers.

Institutional rigidity structurally limits educational innovation.

The NVAO itself identifies the practical issues: silo structures, fixed teaching blocks, standardised assessment methods and pre-determined learning outcomes. Researchers into transdisciplinary education in the Netherlands note that these elements are directly reflected in the obstacles experienced by pioneers. Adapting to current frameworks offers short-term support, but sustainable embedding requires a broader shift in organisational and educational cultures.

Assessment is counterproductive to the kind of learning that the transition requires.

Transdisciplinary education presupposes equality between students, lecturers and societal partners. Assessment focuses almost exclusively on students and on pre-determined criteria, thereby shifting the focus from the shared societal issue to meeting assessment criteria. The dual role of the lecturer – as both a process facilitator and an assessor – exacerbates this tension. This is no coincidence but a systemic feature: the regime is designed for predictability and control, not for emergence and adaptability.

The role of the lecturer themselves is evolving.

This was explicitly highlighted at the meeting on 13 April: from expert to coach, from soloist to systems thinker and transdisciplinary collaborator. The content of courses is changing accordingly, and with it, teaching methods. However, the competencies, time and recognition required by this shift in role are lacking in the current frameworks – BKO/SKO do not include learning for sustainable development as a core element, and continuous professional development is not yet a sector-wide agreement.

The four levers for changes weighed from a lecturers' perspective

Not all four points of action in Chapter 6 carry equal weight for lecturers.

- Teacher training and quality assurance (point 2) is primary for this target group and is closest to their own role. This is where both the problem (no embedding in BKO/SKO, limited scope for experimentation within accreditation) and the lever: a national professional development programme 'BKO+', integration into NVAO criteria in a guiding manner, and the 'sustainable university of applied sciences' designation as a mandatory sector-wide standard.
- Narrative (button 4) resonates with lecturers in a specific way. At the conference, there was a call for a tone of voice that communicates not just 'must', but 'want' and 'may'. And for a tailor-made narrative – drawn from one's own discipline, not as an imposed framework. The framework of planetary health was mentioned as an integrative alternative that resonates with more disciplines than 'sustainability' alone. This brings the narrative button closely in line with everyday teaching practice.
- Funding and recognition (button 3) affects lecturers through the actions of their institutional boards and umbrella organisations: time and resources for staff development, recognition of pedagogical innovation in career paths, and broadening of roles to include teacher-researchers with multiple roles. The separation of funding streams between teaching and research is a specific bottleneck in higher professional education.

- Coordination (button 1) affects lecturers through learning networks and visibility. Initiatives such as Green Ambassadors programmes, sustainability coaches (WUR), the 'Leren voor Morgen' (Learning for Tomorrow) cooperative and professorial research groups in higher professional education show that much is already in place. Connecting infrastructure can make this critical mass visible and strengthen it without standardising it.

Action perspectives

The analysis highlights a number of action perspectives for lecturers. These are divided into short-term (1 year), medium-term (2–3 years) and long-term (5 years and beyond).

Short term – Find scope within existing frameworks

- Connect with colleagues within and outside your discipline who are involved in sustainability education – via professional associations, research groups, the Green Office, learning networks or the 'Leren voor Morgen' Cooperative.
- Make explicit the sustainability dimension present in your own subject – not as a separate module, but integrated into the content. For many lecturers, this is the most practical approach.
- Advocate within your degree programme or academic department for time and resources to be allocated to educational innovation. Time was identified as the most tangible obstacle at the meeting on 13 April, and the pressure to address this lies with the management.
- Involve students as co-designers, not as consumers. Community placements, student assistants with real influence, and the co-creation of learning pathways are concrete examples that were put forward at the conference.
- Experiment with teaching methods that enable transformative learning – living labs, challenge-based learning, transdisciplinary assignments. Look for the 'loopholes' in policy plans that allow scope for experimentation.

Medium term 2. Work towards new agreements

- Advocate within your institution and umbrella organisation for the embedding of sustainability in BKO/SKO requirements, and for a national professionalisation programme, BKO+. Sector-wide agreements are only possible if lecturers themselves push for them.
- Seek collaboration between universities of applied sciences (HBO) and research universities (WO) regarding personal and professional development. The challenges and solutions overlap more than the current institutional divide suggests.
- Reframe the conversation about sustainability education within your organisation: move away from 'having to' and compliance, towards sustainability, willingness and freedom to act. Tone of voice matters – even amongst colleagues.
- Focus on the 'light green' lecturer and student – the follower, not just the frontrunner or the sceptic. Leading by example, getting involved and persevering were recurring pedagogical themes at the conference.

Long term – requires redesign

- Contribute to the reassessment of learning outcomes and programme profiles where current profiles hinder the transition – whilst respecting disciplinary and sectoral distinctiveness.
- Work towards a structural link between teaching and research. The gap between the two was highlighted in several conference sessions; for teacher-researchers and lecturers, this link is not optional but essential.
- Articulate what it means to be a lecturer in a transformative educational context – not just for yourself, but as a community.

Tensions affecting lecturers

- Tensions between frontrunners and those following at a slightly slower pace. An innovation that is too radical mobilises pioneers but alienates the wider group. An approach that is too soft takes the edge off. How do you make transformative education inviting without it becoming non-committal?
- Tensions between grading and collaborative exploration. The roles of process facilitator and assessor are ill-suited to being combined in the same person. At the same time, the system is not yet ready to let go of that duality.
- Tensions between freedom to experiment and being anchored within frameworks. Pioneers often work outside formal structures – which is precisely why they succeed. But without anchoring, their experiments remain vulnerable. Anchoring that erodes freedom is not a solution; nor is freedom without anchoring.
- Tensions between individual commitment and systemic change. Much educational innovation depends on motivated individuals. Waiting for systemic change is not an option, but individual commitment is not sustainable either. This tension is inherent to the role.

Open questions for teachers and education practitioners

- Who owns the BKO – institutions, umbrella organisations, or a national framework? The question was explicitly raised at the conference and remains open. Without an answer, any professional development pathway remains vulnerable.
- How do we connect the core group of lecturers committed to sustainability with the wider lecturing population without the narrative becoming non-committal?
- What forms of assessment are suited to transdisciplinary and transformative learning – without compromising the quality-assuring function of assessment?
- How can students play a role in shaping education?
- How do we maintain scope for experimentation under the pressure of accreditation, accountability and quality assurance? The warning issued at the conference against the reflex to ‘pursue new accreditation’ also applies here.
- How do teaching and research relate to one another at your own institution – and what would be needed to strengthen that link structurally, rather than leaving it dependent on individual commitment? How do we ensure a whole-system approach – in which all aspects work together to bring about a cultural and systemic change?