

Knowledge ⇌ Action Networks Framing and Operationalisation

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This is a working paper that will be revised on a regular basis.

1. What are Knowledge-Action Networks?

Knowledge-Action Networks are collaborative frameworks of Future Earth that facilitate highly integrative sustainability research with the aim to generate the multifaceted knowledge required to inform solutions for complex societal issues.

The Future Earth Vision 2025 presents an agenda that is motivated by the ambition to address eight major societal challenges to sustainability. It also emphasises greater interactions among disciplines and between research and stakeholders from the public and private sectors as key approaches to improve the contribution of science on the solution of societal issues. Knowledge-Action Networks constitute major frameworks for applying these approaches to research and related activities to target the societal challenges. Consistent with Future Earth's slogan "research for global sustainability", the main method of the Knowledge-Action Networks is that of generating high quality actionable scientific knowledge through the integration of research and the involvement of societal partners, following the Engagement Guidelines of Future Earth.

2. Narrative

Future Earth Knowledge-Action Networks continue the integrating and broadening endeavour of the former Global Environmental Change programmes upon which Future Earth builds. They offer a format to bring multiple disciplines and societal actors to the table to understand and respond to the global challenges facing humanity. They thus implement Future Earth's collaborative approach to knowledge generation by pulling from many areas of both academia and society, involving fundamental research, integrating natural and social sciences and humanities, co-designing research questions with users, co-producing outcomes, and broadening engagement activities through state-of-the-art communications, dialogues and work with policy interfaces. The Knowledge-Action Networks can significantly advance our understanding of complex societal challenges while accelerating the emergence of evidence-based solutions through policy measures, markets or civil society action.

3. Context of Knowledge-Action Networks in Future Earth

Knowledge-Action Networks build on the broad range and diversity of specialist expertise represented in the large community of researchers and practitioners associated with Future Earth, e.g. in Core Projects, Fast-Track Initiatives and Clusters, and endorsed and associated organisations, projects, and individuals that are part of the Future Earth Open Network. Contributions to Knowledge-Action Networks are thus on a voluntary basis through members or groups with the appropriate expertise and an interest in putting their expertise into the broader context addressed by Future Earth.

Core Projects: Core Projects host much of the scientific capital needed to mobilise the Knowledge-Action Networks. Through their well-established global networks of researchers, Core Projects can contribute to Knowledge-Action Networks with experts, research results, stakeholder access, innovative ideas, communication pathways, coordination, and infrastructure. Core Projects are encouraged to lead and contribute actively at all stages of Knowledge-Action Network development and operation, and different subparts of a Core Project community can contribute to different Knowledge-Action Networks and even several at once, where they see fit. The Knowledge-Action Networks, together with shorter-term integrative activities such as Fast-Track Initiatives and Clusters, complement the more sectoral or disciplinary research of the Core Projects by offering opportunities for highly integrative research activity across Future Earth.

Fast-Track Initiatives [FTI] and Cluster Activities [CA]: Thematically relevant FTIs and Clusters can be the nucleus of a Knowledge-Action Network by carrying over their network of researchers and stakeholders to the Knowledge-Action Network and by taking a lead in identifying appropriate research questions and approaches. FTIs and CAs can be used to develop a specific component as a contribution to a Knowledge-Action Network. Integrative activities in Future Earth that can be accomplished in a focused way within a few years should be pursued as a FTI/Cluster or as a component of a Knowledge-Action Network.

Open Network: The network including subscribed researchers and practitioners, endorsed projects and institutions, and strategic partner organisations, provides a large and diverse pool of expertise and perspective on which the Knowledge-Action Network will draw. The online infrastructure for the Future Earth Open Network is in the process of being built. Network members will be informed directly about the opportunities related to Knowledge-Action Network and be encouraged to participate according to the information they provide about their expertise and interest. As Knowledge-Action Networks are setup to be open and inclusive, any interested researcher or societal partner is welcome to seek involvement in the Knowledge-Action Networks through joining the Open Network and indicating their specific interest there.

4. Objectives

The Knowledge-Action Networks aim to:

- identify and respond to society's needs for high quality scientific knowledge to successfully undertake the required transformation to sustainability

- generate integrated knowledge that is relevant to the key decision-makers concerned with the KAN topic, in public and private sectors at global to local levels
- develop and cultivate research that is solution-driven, inter- and transdisciplinary i.e. designed and produced in collaboration with societal partners to bring research closer to society (i.e., research questions will be co-designed and research co-produced where appropriate).
- add value to research that is or has been carried out already, by prioritising questions, integrating research and knowledge, generating synthesis, identifying gaps and opportunities, and stimulating new research.

5. Principles

Co-creation: The broad community is invited to identify priority questions and activities for each Knowledge-Action Network and develop a plan for implementation. This process of co-creation builds global inclusive communities, and provides a mechanism for Knowledge-Action Networks to work in synergy with existing projects and initiatives.

Scope: Research addresses societal challenges in the Future Earth scientific space defined by the eight societal Key Focal Challenges (as defined by a community consultation and co-design process in the [Future Earth 2025 Vision](#)) and the three Research Themes (Dynamic Planet, Global Sustainable Development, Transformations towards Sustainability).

Uniqueness: Knowledge-Action Networks in Future Earth aim to fill knowledge gaps that are defined collaboratively with experts within and outside of academia throughout the challenge area, giving them the capacity to synthesise and synergise existing work and build new knowledge through the collaborative identification of key research needs.

Strategy: Research activities adhere to the Future Earth design principles of solution-orientation, interdisciplinarity, and co-design and co-production with societal partners.

Outcomes: The working plans of Knowledge-Action Networks are directed towards generating products and accomplishing the tangible goals identified during the co-design process.

Internationality: Involving the global community of researchers and practitioners beyond national or regional projects.

Openness: The network activities are accessible for participation from interested and suitable persons and projects.

Inclusiveness: Knowledge-Action Networks aspire to inclusiveness and appropriate balances with respect to discipline, professional background, geographic representation, career stage, and gender.

6. Participation and Governance

Membership: Knowledge-Action Networks are largely driven by the research community and relevant stakeholders. They are thus open and inclusive to participation by interested and relevant parties.

Leadership: Once defined and/or undergone its first scope/implementation phase, Knowledge-Action Networks are led by a steering group of a size and structure that ensures a successful implementation of the workplan. It should aim to include appropriate and balanced representatives from the Future Earth-SC and EC, Secretariat, Core Projects, societal partners, early-career practitioners, experts from both the global South and North, and strive for gender balance. Funding communities can be included as appropriate.

Oversight: The SC/EC and Secretariat representatives on the Steering Group oversee the running and operation of the Knowledge-Action Networks and report to their committees, on the basis of which the SC/EC monitor progress. The overall SC/EC provides strategic guidance. The Governing Council of Future Earth is the ultimate approval body with regard to major structural and strategic changes.

Management: Overall management lies with the Steering Group and, if applicable, additional management staff that has been put in place by the Knowledge-Action Network leaders. Designated representatives of the Future Earth Secretariat support the management of each Knowledge-Action Network.

Support: The Future Earth Secretariat ensures the continuous progress of the Knowledge-Action Networks through coordination and help in identifying new actors and communities of researchers, stakeholders and decision makers, and through communication, synthesis coordination, capacity building, engagement support, event organisation, online tools, and technical support.

7. Resources and Funding

The Future Earth Secretariat works with Knowledge-Action Network teams in the early stages of Network development to obtain seed funding to support co-design processes through virtual and physical co-design workshops. The bulk of the required additional funds should, however, be leveraged from external sources.

It is expected that most Knowledge-Action Networks will be funded through a mix of public-sector funds (such as Belmont Forum-coordinated calls for a Collaborative Research Actions on Knowledge-Action Network topics) and private foundation support, with additional support coming from private-sector partnerships and individual donors.

8. Operationalisation

For each of the eight Key Focal Challenges (see [Future Earth 2025 Vision](#)), Future Earth aims to establish a dedicated Knowledge-Action Network. These will be complemented by Knowledge-Action Networks

that cut across several or all those Challenges. Their establishment will be sequenced over the next few years.

In addition, Future Earth is planning to solicit ideas and concepts for additional Knowledge-Action Networks through an open process, as resources allow.

8.1 Establishment of Future Earth Knowledge-Action Networks

Initiating:

During the early development phase of Future Earth, the decision on topics for Knowledge-Action Networks was taken by the Science and Engagement Committees and the Governing Council (status Nov 2015). The topics were based on the [Strategic Research Agenda 2014](#), which had been produced following community consultation. Priorities in the global context and knowledge of activities within the current Future Earth community led to an agreement to explore the potential for the development of a first set of ten Knowledge-Action Networks. These initial Knowledge-Action Networks cover five of the challenges identified by community consultation for the Vision in 2025 (Natural Assets, Health, Food-Energy-Water Nexus, Urban, and Sustainable Finance and Economics), three that address cross-cutting areas (Transformations to Sustainability, the Sustainable Development Goals, and Oceans) and finally, to initiate an inquiry into two new areas, namely Risk and Disaster Prevention, and New Technologies.

Scoping:

As a Knowledge-Action Network concept framework is approved to be launched, i.e. opened up to broad co-design and participation, the Future Earth Secretariat works with a Knowledge-Action Network development team that is setup to drive the scoping process and for that initial period. This team has the task to mobilise the appropriate communities of researchers, potential funders, and societal partners from civil society, the public and private sectors. This process is public with the intention of bringing communities together to identify those parties with strong interest and relevant expertise and background. The goal of this scoping phase is to co-develop a Research and Engagement Plan, a steering group, and a funding strategy.

The mobilising and scoping must be open to interested parties. It can be organised through workshops, sessions or other in-person meetings and through online discussions, which are facilitated by the Secretariat.

The development team must (to the best of their abilities) have effective representation from both the research and stakeholder communities, and appropriate disciplinary, gender and regional diversity. Inclusion of transdisciplinary science expertise is encouraged. The development team should include a member of each of the Science Committee, the Engagement Committee, the Secretariat, and consider drawing on the expertise from the Core Projects, the Early Career Practitioners network, and the FTIs/Clusters.

Following the scoping phase, which can last several months and include several co-design events to encourage an integration of perspectives on the challenge in question, the co-designed Research and

Engagement Plan is submitted to Future Earth. On that basis, the Governing Council, with advice from the SC/EC, will decide on the formal establishment of the Knowledge-Action Network and provide feedback to the proponents to further hone the concept, if needed.

8.2 Running a Knowledge-Action Network

Co-produced Research:

Implementation of the Knowledge-Action Network work plan will involve the definition of a terms of reference, and developing research and engagement activities. Activities can split up into several parallel threads to develop a portfolio of projects. This can be a useful segmentation of the overall work plan. However, the threads should rejoin for major integrative syntheses or other joint products. It might become necessary to periodically revise the strategic plan for the Knowledge-Action Network as new opportunities arise or original plans turn out unrealistic. Knowledge-Action Networks should capitalise on the support of the Research Enabling function of the Future Earth secretariat.

To avoid internal competition and maintain coordination among Knowledge-Action Networks, Steering groups will include Secretariat staff, and fundraising will be coordinated across Knowledge-Action Networks and Future Earth structures according to the advancement plan and the funding agreement.

Reporting: Knowledge-Action Networks report to Future Earth annually about past year's activities, accomplishments, and products, and about prospective plans for the coming year. A subcommittee of the Future Earth SC/EC provides guidance for the continued development of the Knowledge-Action Networks.

Evaluation and Advice: The SC/EC evaluates the performance of the Knowledge-Action Network based on the annual report and provides constructive feedback. Inactive or non-performing Knowledge-Action Networks may be terminated if confirmed by the assessment of the Governing Council, based on recommendations from the SC/EC.

Every three years, a Knowledge-Action Network will undergo a major review for which the SC/EC can invite external assessments. On the basis of that review, Knowledge-Action Networks that aim to continue operating, should consider scientific and structural adjustments.

Performance Metrics for Knowledge-Action Networks should include:

- # Community activity (conferences/workshops/online activities run)
- # Size and vitality of the community generated
- # Appropriate inclusiveness and balances in participation and leadership
- # Number and quality of publications
- # Synthesis products
- # Outreach products
- # Training/capacity building
- # Funds raised, incl. crowdfunding initiatives
- # Policy recommendations influenced
- # Technology developed

- # Start-ups established
- # Level of stakeholder engagement in co-design and/or co-production

Synthesis:

Knowledge-Action Networks should be designed in way that the activities culminate in major milestone and synthesis outcomes that make a difference to the target stakeholders of the Knowledge-Action Network topic. These can be publications, databases, online tools, audiovisual media, or have any other form that has been identified as appropriate during the co-design process. The synthesis might go hand in hand with foresight activities and products, which can generate ideas and concepts for follow-up projects.

Knowledge-Action Networks should work with the synthesis and foresight function in preparing final or intermediate milestone products. The Secretariat Synthesis and Foresight team will work closely with Knowledge-Action Network teams in this process.

Engagement:

Engagement, communication and outreach should constitutes an important part of the Knowledge-Action Network lifecycle. In practice it can be tightly interwoven with the synthesis phase and even the research phase. Dissemination may include to ramp up communication campaigns and to intensify science-policy interaction. As such, the secretariat's communication function and the synthesis & foresight function (which includes policy targeting), are the most relevant partners during this phase.

The Future Earth Engagement Strategy provides guidance on the principles of Engagement for Knowledge-Action Networks.

Successful execution of the synthesis and dissemination phase is critical to success of the Knowledge-Action Network. The Secretariat Communication and Outreach team will work closely with Knowledge-Action Network teams in this process.

8.3 Proposing a new Knowledge-Action Network

Expression of Interest:

An individual or a team of proponents may inquire about the suitability of their idea for a new Knowledge-Action Network by submitting an outline (equivalent to 1-2 pages) to Future Earth by emailing the Future Earth Secretariat.

A suitable Knowledge-Action Network idea should (1) address a topic area of Global Environmental Change and sustainability that has significant scope, (2) be formulated in a transdisciplinary solutions oriented way that is well aligned with Future Earth Vision 2025 and the Strategic Research Agenda 2014, (3) not duplicate existing Knowledge-Action Networks or other major activities already taking place elsewhere, (4) demonstrate a high potential for mobilising a large and diverse group of scientists

and stakeholders, (5) provide ideas what the outcome(s) or final product(s) could be, and (6) delineate a rough funding concept.

Everybody is entitled to submit an Expression of Interest. They can originate from within the FE community such as from FTIs, Core Projects, or committees, but also from outside Future Earth bodies.

Representatives from the SC/EC Committees and the Secretariat will provide feedback, and either encourage or discourage development of a more elaborate Knowledge-Action Network proposal.

Once approved, the Knowledge-Action Network implementation should follow the phases outlined above (under 8.1 and 8.2).

Appendix

The elaborate Knowledge-Action Network concept developed during the scoping step should include a Research and Engagement Plan. It should (1) flesh out on the knowledge gaps identified, (2) key questions to be examined, (3) be specific about the aspired outcomes, (4) the value added to existing research and stakeholder initiatives, (5) provide a work plan with timeline, (6) a funding strategy, (7) an engagement strategy, (8) formulate success criteria, and (9) outline the core community that is expected to carry the Knowledge-Action Network.

Questions:

- # What is the focus of this Knowledge Action Network? Its narrative?
- # What are the major framing research and delivery questions that define this Knowledge-Action Network?
- # How does this deliver to the overall Future Earth Vision goals/support the Roadmap discussion?
- # What will be the unique value for Network members to participate in this Knowledge-Action Network beyond what they are already doing?
- # Which existing (core project, FTI, etc.) and new research communities need to be engaged? (disciplines, geography, other existing initiatives, etc.)
- # Which societal partners need to be engaged for co-design (& co-production where appropriate) and how?
- # What concrete steps would be taken to develop and implement a plan for this Knowledge-Action Network over the next year?
- # What are the major types of products envisioned to result from this Knowledge-Action Network (synthesise products, research ideas, technologies, policy briefs)?
- # Which are the potential funders for this Knowledge-Action Network?