



GLOBAL CENTRE ON
BIODIVERSITY
FOR CLIMATE

Global Centre on Biodiversity for Climate Impact Pathways: Rapid Evidence Review

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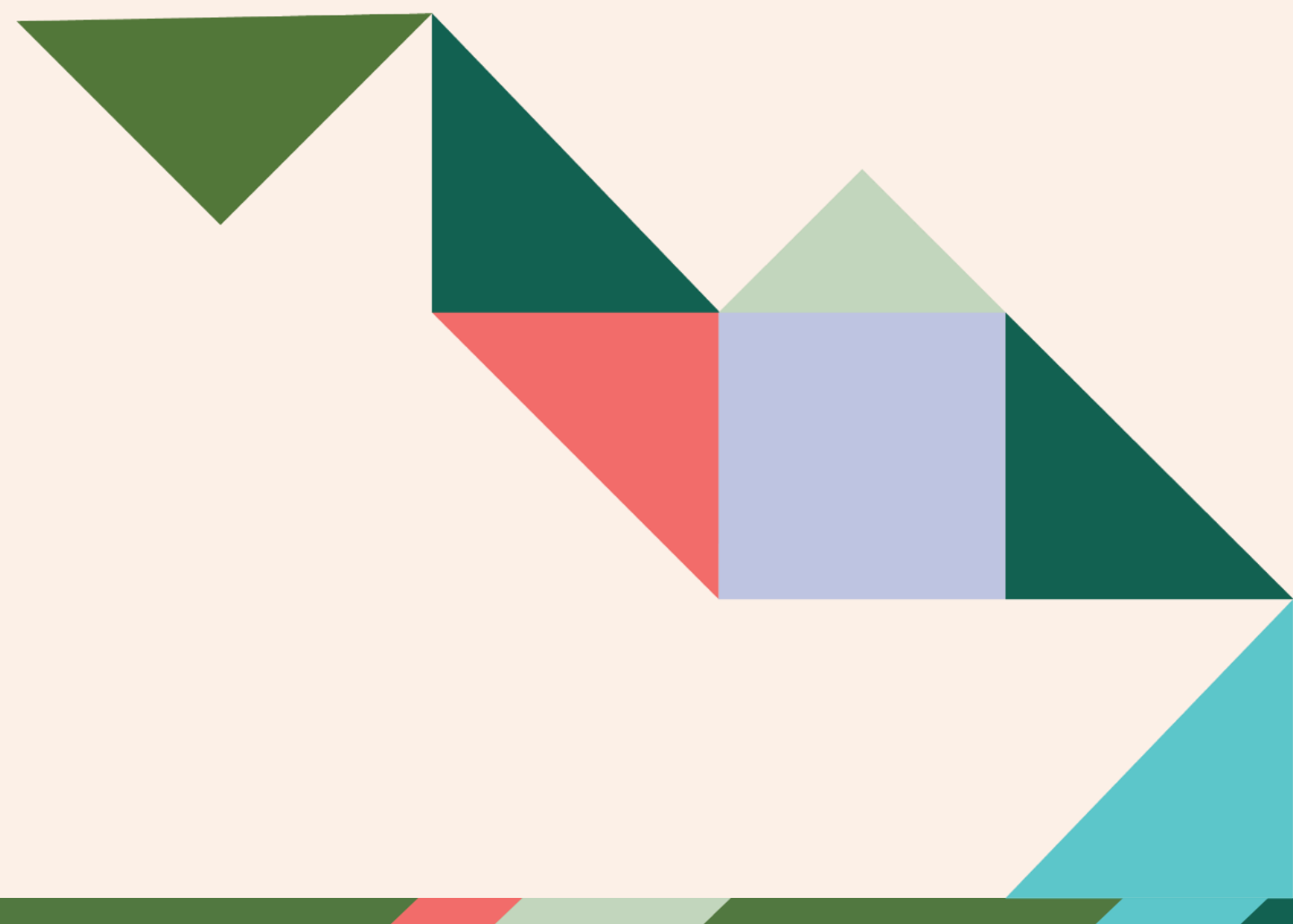
Abstract

This paper is the product of a rapid evidence review, which aimed to provide background and evidence to inform the Global Centre on Biodiversity for Climate (GCBC) Theory of Change (ToC) refresh. The review aimed to answer the following key question: *What evidence is there to support the implied impact pathways in GCBC's ToC?*

Focusing on literature published since 2018 related to biodiversity, climate resilience and livelihoods, the review discusses six implied impact pathways from the GCBC ToC, including: systems approaches; policy influence; changes in practice; combining science with indigenous and community knowledge; capacity building; and market-based pathways. The paper also considers the research-into-use (RIU) strategies

adopted by research programmes to promote uptake and influence change.

Overall, the review found ample evidence to support the relevance and utility of the problem statement that the GCBC ToC is designed to address. Still, it highlights gaps and complexities in impact pathways due to social, contextual and power dynamics, and underscores the interconnected and nonlinear nature of these pathways. The paper emphasises that impact arises through diverse, context-dependent routes, and GCBC can facilitate this through supporting integrated, multi-stakeholder research processes. Overall, the evidence suggests that achieving research impact is more akin to climbing a rock face than scaling a ladder; there are many possible routes to the top.





Approach & background

The evidence review upon which this paper is based was commissioned as a swift, use-oriented appraisal aimed at contributing to the process of refreshing the GCBC ToC. As such, the review is not (nor was it intended to be) an exhaustive survey of the research impact landscape but rather a pragmatic tool to assist the ToC refresh process.

The review sought to identify and assess:

1. Evidence relevant to the GCBC ToC problem statement
2. Six implied impact pathways from the ToC
3. Common research-into-use strategies used by researchers to promote research uptake and influence change

To be of best use to the ToC refresh process, the review focused on identifying recent developments in the evidence base since 2018, with an emphasis on impact pathways specifically related to biodiversity, climate resilience and livelihoods.

The review prioritised identifying higher-level analyses, such as systematic reviews and publications that synthesised evidence from practical case studies, intending to balance a broad view of the available evidence against more context-specific

insights. The review focused on peer-reviewed literature, publications from reputable research organisations (such as CGIAR, IDRC, 3iE and OECD) and robust evaluations. Searches and snowballing yielded an initial long list of 150 documents, subsequently reduced to a shortlist of 61 documents on the basis of practical relevance and quality of evidence. Documents in the final shortlist were reviewed individually.¹

The speed and use-oriented nature of the review means it unavoidably offers a partial view of the wider landscape, which has been refracted through the lenses of the GCBC ToC. Although this working paper is based on the GCBC impact pathways, the literature review should have wider utility for those working on research and innovation programmes.

¹ 47 of 61 papers included in the review were from peer-reviewed publications such as scholarly journals. 19 papers were evidence syntheses or systematic reviews. 33 papers included practical case studies, 12 focused on theory and methods and 10 were evaluations. These categories are not mutually exclusive.



Overarching findings

Overall, the evidence assessed through this literature review confirms that the problem statement of the GCBC ToC remains highly relevant and important.² Multiple recent systematic reviews have found that, although there is a clear emerging consensus that biodiversity, climate change and human wellbeing are interconnected (the ‘triple challenge’), significant evidence gaps remain in our understanding of how biodiversity conservation contributes to climate-resilient development and improved livelihoods (Vernooy 2025; Brubacher et al. 2024; Parrao et al. 2024; Baldwin-Cantello et al. 2023; Cheng et al. 2023; Key et al. 2022; Pettorelli et al. 2021; Chausson et al. 2020).

Most research to date has typically focused on distinct types of outcomes, with fewer analyses of integrated approaches that aim to address all three issues simultaneously (Baldwin-Cantello et al. 2023; Cheng et al. 2023; Key et al. 2022; Chausson et al. 2020).

Despite a strong focus on gender equality, diversity and social inclusion (GEDSI) in the UK’s international biodiversity and climate goals, there is also little assessment of the gendered dimensions of the Triple Challenge nexus (Brubacher et al. 2024; Call and Sellers 2019).³ Additionally, there is a significant imbalance in the geographic

distribution of evidence, with most studies concentrated in the Global North (Chausson et al. 2020; Stoudmann et al. 2023).

Evidence from the review indicates that there are still too few mechanisms for the kind of collective, evidence-based decision-making and action that are required for transformational change at the nexus of biodiversity, climate resilience and livelihoods. Thus, the GCBC ToC problem statement remains relevant to the wider research and impact landscape and is oriented to address some key gaps and imbalances.

² The GCBC ToC problem statement is: ‘There is limited evidence on and understanding of how the conservation and sustainable use of biodiversity contributes to inclusive climate resilient development and poverty reduction. There are also limited processes, agency and coordination mechanisms to use this evidence to bring about the transformational change needed.’

³ UK Government (2025) UK International Climate Finance gender equality, disability and social inclusion guidance. Available at: <https://www.gov.uk/government/publications/uk-international-climate-finance-icf-gender-equality-disability-and-social-inclusion-guidance>



Cross-cutting findings

The review identified several cross-cutting findings which reflect broader challenges related to identifying generalisable research impact pathways.

Impact pathways are non-linear

Evidence from the review confirms that linear models of pathways to research impact are widely regarded as inadequate, both as a description of actual science-policy processes and as an idealised model for dialogue. There is widespread acceptance in the literature that impact is more typically the result of multiple factors and interacting outcomes arrived at by a variety of causal relationships, many of which lie outside the control of researchers or funders of research (Ferré et al. 2025; Brubacher et al. 2024; Apgar et al. 2023; Baldwin-Cantello et al. 2023; Cheng et al. 2023; Douthwaite et al. 2023; Kirchherr, Hartley, and Tukker 2023; Benedum et al. 2022; Phipps et al. 2022; Xavier et al. 2022; Belcher and Hughes 2021; Graham et al. 2021; Jones and Bice 2021; Larrue 2021; Lavery et al. 2021; Chausson et al. 2020; Sartas et al. 2020; Reed, Bryce, and Machen 2018; Douthwaite et al. 2017; Young et al. 2014; Leach, Scoones, and Stirling 2007).

For example, policy processes are complex, multidimensional and unpredictable; they incorporate multiple sources of information, not only scientific, and often use the latter

selectively. Even when research findings do inform management actions or policy changes, the achievement of outcomes (such as conservation benefits) can depend on complex biological and social interactions, and actual impact may be generated in unpredictable and unexpected ways, making it difficult to isolate causal factors.

Many authors emphasise that impact emerges from networks of causal relationships built from social interactions between actors who make decisions and undertake actions, albeit in structured social environments, and with different motivations (Apgar et al. 2023; Kirchherr et al. 2023; Belcher and Hughes 2021; Graham et al. 2021; Maru et al. 2018; Douthwaite et al. 2017).

Questions about non-linear and actor-network causality are particularly acute in relation to changes that are distant from research activities and outputs (for example, longer-term outcomes and impact).

Research on the Triple Challenge nexus is typically conducted in complex systems, with many actors and processes operating simultaneously. In this context, impact and

innovation tend to emerge from these interactions within the larger ecosystem of stakeholders. Thus, identifying how

combinations of actors can deliver the priority outcomes needed should be a key area of focus.

Contextual diversity and specificity

Another recurring theme was the central importance of context in defining the limits of the possible in pathways to research impact (Brubacher et al. 2024; Cozim-Melges et al. 2024; Baldwin-Cantello et al. 2023; Oliver et al. 2022; Clark et al. 2021; Erismann et al. 2021; Hörner and Wollni 2021; Larrue 2021; Sartas et al. 2020; McLean and Gargani 2019; Terrapon-Pfaff et al. 2018; Contandriopoulos et al. 2010).

For example, geographic context matters as sociopolitical processes at multiple scales constrain or support adaptation efforts. The cultural and epistemological context is also highly relevant as the inclusion and prioritisation of diverse knowledge systems strengthen monitoring and adaptation to climate change and biodiversity loss.

Clear, nuanced explanations of how research leads to impact often depend on

specific contexts and dynamics that are hard to describe in general terms. The diversity of contexts means that strategies appropriate for achieving impact also tend to be diverse and situation-specific.

Conversely, a common reason why research fails to influence policy and practice appears to be a lack of understanding of the specific contexts within which research programmes are attempting to operate (Oliver et al. 2022). In short, what works tends to be highly context-dependent and difficult to generalise. Different combinations of approaches, concepts and tools are appropriate for different issues and settings. Therefore, mapping what works in different circumstances and systems is an important step to find the appropriate pathways to impact in each case.

Conceptual and discursive framing

Understanding what works in building pathways to impact is further complicated by the fact that, for any research area, there are many ways of conceptualising problems and solutions, each suggesting different pathways to different types of impact.

For example, understanding how research into the relationships between biodiversity, climate resilience and human wellbeing can lead to impact involves describing how changing and interacting social, technological and environmental elements are configured around a given issue.

Typically, this takes the form of describing 'systems'. There is always more than one

way of 'framing' (understanding and representing) a system, whether by international or national policy actors and networks, different advocacy groups, different researchers or local people.

Framing involves choices about which elements of the system to highlight, where its boundaries are, at what scale to view it and any potential options and trade-offs, as well as subjective and value judgments about it. This means that what counts as 'appropriate' or what works is also the product of specific framing, since the identification of a solution depends on how the problem is defined.

Different policy initiatives and frameworks guide the suitability of different pathways to societal transformation, and the economic and social implications of particular pathways vary between stakeholders and contexts. This contributes to the difficulty of policy generating 'win-win' scenarios, not only because policy often emphasises benefits for one outcome area (such as livelihoods) at the expense of others (biodiversity conservation), but because the very idea of what counts as a 'good' outcome can be multiple and contested.

In addition, the process of defining impact pathways does not occur in a political or ideological vacuum. It is, instead, typically subject to power dynamics shaped by vested or conflicting interests, inequalities and marginalisation. Certain ways of framing can come to dominate while others are sidelined.

The development of research agendas and impact pathways, therefore, has an intrinsically political dimension. A typical example of this is the historic failure to promote framing based on the knowledge of Indigenous peoples and local communities — a failure reflective of the broader historical marginalisation of Indigenous peoples within the global research environment.

Discursive dominance and the marginalisation of alternative perspectives risk ideological fracturing of the evidence base, where scientific evidence is used selectively to reinforce existing viewpoints (for example, within a given policy network), or where the dominance of well-placed or well-resourced organisations with specific agendas means stakeholders only hear part of the story from actors whom they regard as 'trusted' sources. This can prevent wider stakeholder buy-in (particularly at community levels) and reduce the trust in research findings needed for shared understandings and common goals.

A value-laden framing, which is subject to political dynamics, is thus an unavoidable and centrally important dimension of building and understanding pathways to impact. Therefore, for researchers and funders of research, the aim should not be to seek a position from which ideologically 'neutral' facts are simply transferred to solve instrumental problems, but rather to develop processes to openly and critically reflect on the value judgments and political dynamics which characterise different pathways to impact.



Synthesis of Impact Pathways

There is a clear agreement across the evidence reviewed that an adequate research response to the Triple Challenge must engage with the complexity of socio-ecological relationships, particularly through a greater focus on and increased funding for transdisciplinary and interdisciplinary approaches.

This section discusses in detail evidence assessed by the review related to six implied impact pathways in the GCBC ToC — each with its own opportunities and challenges — and highlights the complexity of fostering effective change at the Triple Challenge nexus, including:

- Systems approaches and transformational change
- Policy
- Practice
- The integration of Indigenous and community knowledge
- Capacity building
- Market-based pathways

Impact pathway one: systems approaches and transformational change

There is substantial evidence that, over the past two decades, interconnections between biodiversity, climate change and human wellbeing have become better understood and more widely accepted. As a result, an increasing number of integrated intervention frameworks and models have been proposed that explicitly aim to achieve system-level or transformative change, while simultaneously addressing biodiversity, climate resilience and human wellbeing.

Such approaches include: Nature-based solutions (NbS); ecosystem-based adaptation; One Health; mission-oriented innovation programs (MOIPs); multiple-use protected areas; ecosystem-based approaches to climate change adaptation (EbA); sustainable agriculture; agrobiodiversity; and biodiversity mainstreaming, amongst others.

However, despite strong evidence of increased acceptance and adoption of integrated approaches, recent global

reviews confirm that evidence of the *effectiveness* of such integrated models remains weak. The causal effects of integrated interventions are not well understood, and, although research into ‘co-benefits’ or ‘co-impacts’ has increased, evidence around social and ecological synergies and trade-offs remains weak, particularly regarding assumed climate mitigation ‘additionality’ and cost-effectiveness, and there are few analyses which compare nature-based and engineered/managed interventions (Vernooy 2025; Cheng et al. 2024; Parrao et al. 2024; Baldwin-Cantello et al. 2023; Cheng et al. 2023; Stoudmann et al. 2023; Key et al. 2022; Chausson et al. 2020).⁴

Although isolated case studies suggest that ‘triple wins’ are at least sometimes achievable, there is an increasing body of evidence that confirms that some degree of trade-offs (for example, between conservation and income) is likely to be inevitable, and that a key area of focus must be to avoid the most harmful consequences of such compromises. These evidence gaps raise questions about the assumptions that underpin the GCBC ToC, particularly the idea that *“identified approaches to conservation and sustainable use of biodiversity can provide income opportunities that are sufficient to replace business as usual”*.

At a more structural level, systems approaches to biodiversity, climate resilience and human wellbeing are hindered by limited dedicated global platforms, a relative lack of integrated policy-making and funding shortfalls (see Impact Pathway 2 below). Challenges include resistance from vested interests, political bias, and institutional barriers. Diverse definitions of the systems and what transformational change means and/or how it ought to be brought about lead to different approaches.

At the highest level, where institutionalised consensus is achieved about what systems change means, it often tends to dovetail with the political and economic status quo. A

global review of MOIPs, for example, found that although such initiatives tend to acknowledge that a complex convergence of factors determines success, they typically frame issues using technocratic and managerialist rhetoric, which prioritises government as the primary actor for change and promotes a reformist agenda based on small modifications of existing regulatory and government systems — arguably falling short of transformative change.

Conversely, ‘bottom-up’ approaches to system change focus on decentralised, community-based approaches which promote collective agency at the ground level whilst addressing sociopolitical constraints. A recent review, for example, found that needed responses to climate change and biodiversity loss were primarily at the level of communities rather than regional, national, or international levels, and pointed to the need to both support community-led adaptation and address broader sociopolitical constraints on community-determined responses. Another recent review of MOIPs highlighted that the local level is where creative ideas tend to originate, but cautioned against aiming to simply scale-up successful local models, since this promotes a uniformity of approach that strips bottom-up perspectives of their uniqueness and utility. A more effective approach is to recognise the value of diverse ground-level approaches to foster a worldwide policy environment that is strategically harmonised while remaining adaptable to unique contexts.

In a different register, recent International Climate Finance (ICF) guidance stresses that change that does not include GEDSI cannot be transformative. The guidance mandates that all ICF-funded programmes should be GEDSI empowering at a minimum. It outlines a ‘twin-track’ approach where GEDSI mainstreaming across programmes is combined with increasing the number of ICF programmes designed to be GEDSI-transformative.

⁴ ‘Additionality’ refers to the ability of an intervention to mitigate greenhouse gas emissions beyond that expected in the absence of that intervention.

Impact pathway two: policy

Policy-related impact pathways were the most common pathways in the literature reviewed.

The evidence indicates that, overall, global policy actions related to each of the Triple Challenge goals have not yet led to sufficient ambition or changes in practices. Despite isolated successes, governments have seldom integrated these policy domains, and most national governments lack integrated policy frameworks or strategies. In some cases, policies between the three goal areas actively undermine one another (Vernooy 2025; Baldwin-Cantello et al. 2023; Chevallier and Chesterman 2022).

Global frameworks, such as the 2022 Kunming–Montreal Global Biodiversity Framework, set high-level objectives, but financial resources have so far fallen short of targets. Despite these challenges, a large number of interventions and policy instruments can still be leveraged to disseminate climate or biodiversity innovations across different natural and productive systems.

Decision-making processes for adaptation-relevant policies often rely heavily on economic appraisal frameworks tailored to conventional, engineered interventions. It is, therefore, important to develop and harness frameworks that combine economic appraisals with more holistic approaches to capture the broader array of material and non-material benefits that integrated solutions (such as NbS) can bring.

Ultimately, the capacity of research to inform and influence policy-related change depends on the dynamics of the science-policy interface. As explained in the 'Overarching Findings' section, the issue is not to somehow optimise linear processes of knowledge exchange and uptake through which ideologically 'neutral' facts can be transmitted for instrumental policy use. Instead, the challenge is to engage in ongoing dialogues that acknowledge that neither research nor policymaking is neutral (as both reflect social values), and which appreciate that policy processes are

complex with often unpredictable outcomes. The ideal is a two-way process, where research informs policy management actions (for example, through evidence-based policy) and policy and societal needs inform the direction of research.

Yet, productive dialogue between researchers and policy makers faces common hurdles, including: cultural differences; institutional barriers (for example, within decision-making agencies); stakeholder bias and incumbent interests; a lack of shared terminology; scientific outputs not being translated for decision-makers; and poor alignment between research design and actual knowledge needs (Kankya et al. 2024; Cheng et al. 2023; Xavier et al. 2022; Cvitanovic et al. 2016; Young et al. 2014). These issues obstruct communication and collaboration and can make it difficult to operationalise solutions through policy channels. Limited access to — or availability of — policy makers can also be a significant impediment to researchers' progress in scaling their research and can undermine the sustainability of research achievements.

Conversely, key enabling factors revolve around the quality and continuity of the relationships between researchers and government officials. Additionally, there is a need for collaborative forums, shared frameworks and common processes to facilitate the exercise of jointly defining research agendas and implementation to ensure research questions and outputs match policy/decision-makers' needs and are translated in ways that facilitate use (Languille et al. 2024; Baldwin-Cantello et al. 2023; Graham et al. 2021; Noble and Fulton 2020). For example, a case study of ecosystem-based management (EBM) in Brazil found that one key area of collaboration between researchers and policy makers concerned the need to translate and define EBM as a legal concept and make it suitable for integration into policy discourse and management frameworks. Long-term working relationships between researchers and

policy makers can make it easier to identify and respond to 'policy windows' with research that is reframed for policy relevance.

Research-policy links can also be built by researchers working with trusted intermediaries such as strategically placed individuals and boundary organisations that can translate and convey messages across the two spheres, or dedicated knowledge

brokers with special connections to policy machinery. Such translation roles are not always formally recognised or rewarded, and it may be necessary for research programmes to employ dedicated knowledge exchange staff who are well-integrated into research teams (Ferré et al. 2025; Graham et al. 2021; Noble and Fulton 2020; Reed et al. 2018; Lucey et al. 2017; Cvitanovic et al. 2016; Young et al. 2014).

Impact pathway three: practice

The review found fewer examples of impact pathways specifically related to changes in practice. This may be because the literature reviewed was largely oriented towards systematic reviews and evidence syntheses, which tended to focus on high-level policy outcomes, systems-level changes and capacity building outcomes. Additionally, in much of the literature, references to 'practice' tended to be bundled alongside 'policy', reflecting how changes in high-level policy can bring about perhaps the most tangible type of impact: increased awareness, understanding and capacity that leads to changes in on-the-ground practices.

Multiple studies reflected on the challenges related to making alternative practices and technologies accessible at the grassroots level, as well as the related need to supplement researcher or government-led activities by reaching out to civic societies and the private sector to mobilise resources and facilitate behaviour change (Mponela et al. 2023; Chevallier and Chesterman 2022; Hörner and Wollni 2021; Snapp et al. 2019). For example, technologies and practices that can increase agricultural productivity and enhance sustainability have the potential to reduce poverty and malnutrition, but getting these technologies into the hands of farmers often remains a challenge. Conversely, despite an understandable focus on change at local levels, too much emphasis on practices at this scale (such as community-level) can also limit the scale of impact.

One of the difficulties in identifying appropriate strategies for influencing

changes in practices is that the benefits can be highly variable depending on localised conditions. For example, although alternative farming practices generally enhance biodiversity, there appears to be significant variation in impacts depending on factors such as biome and type of practice. Similarly, a study of integrated soil fertility management in Ethiopia concluded that welfare outcomes were heterogeneous depending on farmers' income diversification strategies. These findings reinforce the need to tailor approaches to the specificities of local contexts.

Enablers of context-appropriate research, which can influence changes in practices, tend to revolve around researchers adopting collaborative and communicative approaches to engagement, particularly with practitioners themselves. This is partly because practitioners are more likely to use research that is considered credible and salient (relevant to their needs). Salience is more likely to result from a collaborative approach to knowledge creation from the outset, but also because non-research stakeholders often have valuable knowledge about what real-world impact looks like and how complex processes towards impact unfold in a given context.

One approach is to formally adopt participatory research methodologies, such as participatory action research (PAR). A PAR approach can contribute to sustainable changes in farming techniques and improved dietary outcomes by enabling researchers to benefit from farmers' unique perspectives and knowledge while also allowing farmers to be exposed to a range of alternative

practices and research findings. It can even result in a cyclical process of change in both practices and capacities, which enables PAR groups to become better able to progressively tackle deeper, institutional issues.

Credibility and salience can also result from demand-led approaches, where researchers seek solutions to problems formulated by practitioners, to work with and within practitioners' processes of change. This can involve targeted outreach and user engagement activities, as well as taking on work directly commissioned by management agencies and authorities. Researchers can also play an important role in testing and validating practical solutions put in place by other actors.

Participatory and demand-led approaches may be further strengthened by including research users in the research team, such as International Non-Governmental Organisations (I/NGOs) or private sector partners and key local decision-makers, or by embedding research activities in partner systems, such as those related to agriculture and climate change. Two-way capacity building, which assists practitioners to engage in research activities and utilise research outputs while researchers benefit from learning from practitioners, can also

be an effective strategy, though such activities tend to have a greater impact on practices when pursued at organisational rather than individual levels.

In seeking to influence change at higher levels of practices, multi-stakeholder processes and platforms, and communities of practice — which are already widely used in land and water management — can be used for navigating biodiversity, climate and social goals. This can involve convening experts from academia, civil society, government and industry to jointly assess the issue and identify areas of action. It is also useful to identify windows of opportunity and seize chances for change by identifying key allies in the world of practice in advance and having relevant evidence ready to be shared in the right format at the right time.

Finally, although there are clear advantages and benefits of researchers engaging with and contributing to topics and themes that are already on the agenda, there is also an enduring need for researchers to play the role of critical friends, who are not entirely corralled by the realm of the practically possible. They can challenge popular narratives and provide alternative framing devices to encourage actors to demand transformative changes in practices.

Impact pathway four: combining science with Indigenous and local knowledge

A number of the publications assessed through the review pointed to the importance and utility of funding research that is embedded in partnerships with local communities and Indigenous peoples, including through inclusive and participatory approaches to: research agenda design; project implementation; monitoring; evaluation and learning; and the dissemination and use of research outputs (Brubacher et al. 2024; Mponela et al. 2023; Cheng et al. 2023; Narain et al. 2022; Chevallier and Chesterman 2022; Graham et al. 2021; Lavery et al. 2021; Reed et al. 2018; Snapp et al. 2019; Douthwaite et al. 2017).

A recent systematic review of literature at the intersection of climate change, biodiversity loss, and Indigenous health, for example, found strong evidence that participatory partnerships with Indigenous peoples should embrace the concept of cognitive justice and involve a bilateral sharing of information, rather than the scientific community providing unilateral advice to Indigenous communities. This requires sharing power and privileging Indigenous knowledge through methodological approaches and study designs that embed Indigenous values, realities, and priorities.

These calls can be located within a broader shift to move beyond mere inclusion and community-based approaches to ownership-based, community-driven, rights-based approaches that emphasise sovereignty and autonomy. One case study noted that a step in the right direction is the ongoing increase in the uptake of models that enable Indigenous knowledge formations to guide conservation, which, combined with increasing recognition of land rights, is facilitating Indigenous-led land management. Better recognition of the role of Indigenous knowledge in contributing to healthy biodiversity is enabling biodiversity management to be increasingly holistic and built upon cross-cultural knowledge systems.

Many authors emphasise the important role that PAR approaches can play in facilitating impact through local partnerships. A case study of sustainable agriculture in the USA and Malawi, which utilised agricultural learning communities, found that farmers have unique perspectives and deep knowledge of how to integrate complex

cropping systems for multiple gains at minimal costs. The study noted that despite widespread acknowledgement that farmers have unique knowledge on offer, there are few examples of engaged co-learning where researchers and farmers work together as peers to address sustainable agriculture problems. Other examples highlight how facilitating closer links between farmers, fishers and researchers through community-based management led to a range of outcomes.

Outcomes related to working with local communities and Indigenous peoples can be formally captured when measuring research impact. A study of impact indicators for biodiversity conservation research found that some of the top indicators (those considered most important by practitioners/researchers) included having formal agreements for working together and mutually established and agreed upon ideas, research and goals between researchers, community organisations and Indigenous communities.

Impact pathway five: capacity building

Capacity building oriented towards non-researcher stakeholders can contribute to creating an enabling environment for changes in policy and practice. Key areas include building government capacities to use data for policy and planning, as well as building the capacity of beneficiary groups to use, participate in or engage with research. This includes collecting, using and managing data to support adaptive management and knowledge sharing, alongside collectively improving and augmenting the evidence base.

A key finding from the summative evaluation of the Collaborative Adaptation Research Initiative in Africa and Asia, for example, was that building an enabling environment for policy change can be facilitated by delivering capacity strengthening exercises to external stakeholders (Lafontaine et al. 2018). This is supported by evidence from other case studies, including one from

Brazil, which highlighted how capacity building programmes enabled policy and decision-makers to incorporate EBM concepts into their practices. Increasing the capacity of policy makers to make evidence-based decisions can also be a key factor in facilitating processes of knowledge exchange, as was found in a learning synthesis drawn from IDRC programme-led evaluations.

However, not all capacity building efforts are successful in contributing to research impact outcomes. To be effective, user-side capacity building needs to target skills that are aligned with users' needs. A systemic review of research-to-impact pathways found that activities aimed at building decision-makers' capacities were often focused on "didactic, academically heavy content to provide users with research skills which were often beyond the needs of the user," and although participants valued

some skills development, they often struggled to apply them in practice (Oliver et al. 2022).

Consequently, many authors highlight the value of participatory approaches to research in facilitating effective and efficient capacity strengthening, which is appropriate to users' needs and the demands of the context. Participatory approaches can help ensure that capacity building activities are shaped by common goals and agendas, and are collaborative rather than transactional partnerships. A case study in Australia found that two-way capacity building between researchers and the government after project completion was essential for research uptake. Government staff built

researchers' capacity to understand the operational needs for research to be applied, while researchers briefed end-users on the appropriate use and limitations of the information. Longer-term relationships between researchers and research users can thus be highly beneficial, but do require appropriately stable funding structures to enable continuity of engagement. Other examples highlight building capacities and working with users' needs (Weiskopf et al. 2022; Dey et al. 2020; Douthwaite et al. 2017).

Capacity building activities can thus play an important role in building pathways to impact through changes in policy, practice and the diffusion of innovations.

Impact pathway six: markets and enterprise

Over the past decades, many governments worldwide reduced their stake in environmental governance, leaving private actors to take the lead and relying on markets to resolve environmental challenges. The expansion of environmental markets, including greater use of biodiversity offsets, is increasingly referenced as a key means of increasing conservation investment and mainstreaming biodiversity within economic decision-making. Businesses and financial institutions are also increasingly aware of global biodiversity loss and climate change as risks to organisational profitability and even survival.

A recurring theme in the literature reviewed was that, to influence real-world decisions, the research community needs to collaborate with research users, including business and the private sector. In particular, since market dynamics are a leading cause of biodiversity loss, anthropogenic climate change and unequal livelihood outcomes, addressing these issues requires an appreciation of how businesses drive change. When there is no well-developed market for specific problems, businesses lack incentives to develop effective solutions to them. In this context, a common argument is that, rather

than leaving it to the private sector to develop solutions within the context of existing markets and regulations, governments should take the lead and provide the 'directionality' required.

One dimension of such an approach is to develop institutional and policy anchors for the private sector. Parrao et al. (2024) identify several key tools, including:

- Financial incentives to disseminate climate mitigation, adaptation and biodiversity-enhancing technologies. Payments for ecosystem services, for example, are specifically designed to overcome liquidity constraints and reward voluntary pro-environmental practices and behaviours.
- Market shaping instruments such as results-based finance (such as the reducing emissions from deforestation and forest degradation framework (REDD+)) and advanced market commitments, which align profitability with social and ecological objectives. These may be able to pull finance into specific solutions, including by generating market incentives for the development of not-yet-existing technologies.

- Market linkages and certifications, including interventions that either a) provide certification (as a pathway to new/premium output markets or b) establish linkages across various land stakeholders and output markets.

Research funders and implementers can establish frameworks that promote market-based pathways to impact. For example, the UNDP's 2012–2020 Biodiversity and Ecosystems Global Framework required programmes to assist countries in accessing finance for biodiversity and ecosystem management, mobilising pro-poor markets, and generating sustainable livelihoods. Likewise, a key focus of the Great Green Wall Initiative (GGWI) is the promotion of a green/restoration economy.

However, market-based approaches have limits. As highlighted by Narain et al. (2022), liquid markets with strong flows of capital to biodiversity conservation remain emergent, and biodiversity offsets have too often failed to fully compensate for biodiversity losses (for example, there is insufficient land for tree planting to achieve climate-mitigation goals). Limits to environmental markets as

solutions to biodiversity decline and climate change mitigation need to be recognised, and the effectiveness of market-based approaches needs to be assessed by the additionality of environmental and social outcomes rather than simply by reference to financial outcomes.

In this context, researchers can adopt several approaches to engaging with and influencing private sector actors, including:

- Informing the views of the related policy makers to implement top-down policies which structure the incentives and disincentives for market activity.
- Including science-private actor dialogues as part of the research agenda, with the assistance of intermediaries and translators.
- Critically consider the knowledge demanded by the private sector, as is normal in other sectors such as technical engineering projects.



Conclusions

The evidence reviewed demonstrates an urgent need for coordinated and harmonised efforts to better understand how outcomes related to biodiversity, climate change mitigation and improved livelihoods can be achieved synergistically. There is a clear opportunity to contribute to understanding what works in different circumstances and systems to pursue appropriate pathways to impact. This finding supports GCBC's problem statement and rationale, which has been updated in the ToC refresh process to reflect these nuances:



There is limited evidence on, and understanding of, the interactions between biodiversity conservation, climate resilient development and poverty reduction, and how they might positively support each other. There is also limited evidence on how to manage and mitigate the trade-offs inherent in potential solutions to all three, and how to catalyse the systems change needed."

The crosscutting findings reflect broader challenges related to identifying generalisable research impact pathways, which tend to be non-linear, with impact emerging from complex social interactions and dynamic, iterative processes of collaboration amongst partners and stakeholders.

This means impact is often unpredictable and unexpected. Contextual diversity and specificity make it difficult to generalise about what works, while conceptual and discursive framing means pathways to impact tend to be multiple and often contested. Power asymmetries can lead to

discursive dominance, marginalise alternative perspectives and risk ideological fracturing of the evidence base. The refreshed GCBC ToC makes this complexity — and the stakeholder collaborations needed to navigate it — more explicit, providing a framework for learning through doing for GCBC grantees and programme managers.

Overall, the evidence reviewed indicates that factors contributing to impact typically do not function in isolation but rather act as complementary building blocks that can be combined in various reinforcing ways to develop different routes to impact. There is

also an implicit causal hierarchy across the 'implied pathways to change'. Systems change functions as an overarching goal, towards which progress can be made by contributing to interconnected changes in policies, practices and the outcomes of market-based interventions. These, in turn, can be facilitated by capacity building and by combining science with local and Indigenous knowledge.

A key enabling factor is when research programmes develop processes and frameworks to facilitate ongoing, collaborative multi-stakeholder approaches to the research process, including design and agenda setting, implementation, engagement and impact monitoring. Stable, longer-term funding structures are key to supporting such processes.

The GCBC refreshed ToC now sets out how it intends to drive systems change by facilitating changes in policy, practice and market-based interventions. Insights from this review highlight that a key enabling strategy is to promote productive, ongoing dialogue between researchers and non-research stakeholders such as policy makers, local communities and Indigenous peoples, alongside businesses and private sector organisations. This can include utilising formal participatory approaches to research, embedding non-research stakeholders in research teams, cultivating long-term relationships and exploring the roles that trusted intermediaries, boundary

organisations and knowledge brokers can play.

Capacity building activities can also play an important role in promoting changes in policy, practice and the diffusion of innovations. There is an opportunity to engage more directly with asymmetries of power and support the shift from mere inclusion to ownership and rights-based approaches that emphasise sovereignty and autonomy, with a more central focus on achieving GEDSI transformative outcomes. The refreshed GCBC ToC reflects its ambition to catalyse these change strategies more explicitly, as a guide to action at both the programme and project levels.

Overall, the evidence indicates that achieving research impact is more like climbing a rock face than scaling a ladder; there are many possible routes to the top. This suggests that it makes sense to think of the connective causal tissue of the GCBC ToC as constellations of impact factors which can be contextually configured in different ways to generate a wide variety of outcomes that lead to impact.

GCBC can potentially play a key role in supporting integrated impact pathways by supporting researchers to pursue RIU strategies which facilitate a collaborative multi-stakeholder approach to research design, implementation, dissemination, learning-by-doing and impact monitoring.

Bibliography

- Baldwin-Cantello, W., Tickner, D., Wright, M., Clark, M., Cornelius, K.E., Francis, A., Ghazoul, J., Gordon, J.E., Matthews N., Milner-Gulland, E.J., Smith, P., Walmsley, S. and Young, L. (2023) 'The Triple Challenge: Synergies, Trade-Offs and Integrated Responses for Climate, Biodiversity, and Human Wellbeing Goals', *Climate Policy* 23(6), pp. 782–99. Available at: <https://doi.org/10.1080/14693062.2023.2175637>
- Belcher, B.M. and Hughes, K. (2021). Understanding and evaluating the impact of integrated problem-oriented research programmes: Concepts and considerations. *Research Evaluation*, 30(2), pp.154–168. Available at: <https://doi.org/10.1093/reseval/rvaa024>
- Brubacher, L.J., Peach, L., Tai-Wen Chen, T., Longboat, S., Dodd, W., Elliot, S.J. and Neufeld, H. (2024) 'Climate Change, Biodiversity Loss, and Indigenous Peoples: Health and Wellbeing: A Systematic Umbrella Review', *PLOS Global Public Health* 4(3). Available at: <https://doi.org/10.1371/journal.pgph.0002995>
- Call, M. and Sellers, S. (2019) 'How Does Gendered Vulnerability Shape the Adoption and Impact of Sustainable Livelihood Interventions in an Era of Global Climate Change?', *Environmental Research Letters* 14(8). Available at: <https://doi.org/10.1088/1748-9326/ab2f57>
- Cathexis Consulting (2019) Distilling Key Learning across IDRC's Program-Led Evaluations. Final Report. Available at: <https://idl-bnc-idrc.dspacedirect.org/handle/10625/58310>
- Chausson, A., Turner, B., Seddon, D., Chabaneix, N., Girardin, C.A.J., Kapos, V., Key, I., Roe, D., Smith, A., Woroniecki, S. and Seddon, N. (2020) 'Mapping the Effectiveness of Nature-Based Solutions for Climate Change Adaptation', *Global Change Biology* 26(11), pp. 6134–6155. Available at: <https://doi.org/10.1111/gcb.15310>
- Cheng, S.H., Costedoat, S., Sigouin, A., Calistro, G.F., Chamberlain, C.J., Lichtenhal, P., Mills, M., Nowakowski, A.J., Sterling, E.J., Tinsman, J., Wiggins, M., Brancalion, P.H.S., Canty, S.W.J., Fritts-Penniman, A., Jagadish, A., Jones, K., Mascia, M.B., Porzecanski, A., Zganjar, C. and Muñoz Brenes, C.L. (2023) 'Assessing Evidence on the Impacts of Nature-Based Interventions for Climate Change Mitigation: A Systematic Map of Primary and Secondary Research from Subtropical and Tropical Terrestrial Regions', *Environmental Evidence* 12(21). Available at: <https://doi.org/10.1186/s13750-023-00312-3>
- Chevallier, R. and Chesterman, S. (2022) Research Support to Address Barriers and Accelerate the Impact of the Great Green Wall Initiative. Bogor, Indonesia: Centre for International Forestry Research (CIFOR) and Nairobi: World Agroforestry (ICRAF). Available at: <https://www.cgiar.org/research/publication/research-support-barriers-impact-great-green-wall-initiative/>
- Clark, L., Higdon, G.L., Thompson, S., Tofaris, E and Rose, P. (2021) Celebrating the Impact of the Raising Learning Outcomes in Education Systems Programme, Working Paper: Expert analysis from the Impact Initiative, Brighton. IDS and the Impact Initiative. Available at: <https://doi.org/10.35648/20.500.12413/11781/ii370>
- Contandriopoulos, D., Lemire, M., Denis, J.L. and Tremblay, É. (2010) Knowledge exchange processes in organizations and policy arenas: a narrative systematic review of the literature. *The Milbank Quarterly*, 88(4), pp.444–483. Available at: <https://doi.org/10.1111/j.1468-0009.2010.00608.x>
- Cook, C.N., Mascia, M.B., Schwartz, M.W., Possingham, H.P. and Fuller, R.A. (2013) 'Achieving Conservation Science That Bridges the Knowledge–Action Boundary', *Conservation Biology* 27(4), pp. 669–78. Available at: <https://doi.org/10.1111/cobi.12050>
- Cozim-Melges, F., Ripoll-Bosch, R., Veen, G.F. (Ciska), Oggiano, P., Bianchi, F.J.J.A., Van der Putten, W.H. and Van Zanten, H.H.E. (2024) 'Farming Practices to Enhance Biodiversity across Biomes: A Systematic Review'. *Npj Biodiversity* 3(1). Available at: <https://doi.org/10.1038/s44185-023-00034-2>
- Craens, J., Frenken, K. and Meelen, T. (2022) '15. Mission-Oriented Innovation Policy: The Case of the Swedish "Vision Zero" Approach to Traffic Safety 1'. Available at: <https://www.semanticscholar.org/paper/15.-Mission-oriented-innovation-policy%3A-the-case-of-Craens-Frenken/6f59093f0cd6041381a47963041470c9940ec601>
- Cvitanovic, C., McDonald, J. and Hobday, A.J. (2016) From science to action: principles for undertaking environmental research that enables knowledge exchange and evidence-based decision-making. *Journal of environmental management*, 183, pp.864–874. Available at: <https://doi.org/10.1016/j.jenvman.2016.09.038>
- Dey, C.J., Rego, A.I., Midwood, J.D., Koops, M.A., 2020. A review and meta-analysis of collaborative research prioritization studies in ecology, biodiversity conservation and environmental science. *Proceedings of the Royal Society B: Biological Sciences* 287, 20200012. <https://doi.org/10.1098/rspb.2020.0012>

- Douthwaite, B., Apgar, J., Marina, S., Schwarz, A.M., Attwood, S., Senaratna Sellamuttu, S. and Clayton, T. (2017) 'A New Professionalism for Agricultural Research for Development', *International Journal of Agricultural Sustainability* 15(3), pp. 238–52. Available at: <https://doi.org/10.1080/14735903.2017.1314754>
- Douthwaite, B., Proietti, C., Polar, V., Thiele, G. (2023) Outcome Trajectory Evaluation (OTE): An Approach to Tackle Research-for-Development's Long-Causal-Chain Problem. *American Journal of Evaluation* 44, 335–352. <https://doi.org/10.1177/10982140221122771>
- Erismann, S., Pesantes, M.A., Beran, D., Leuenberger, A., Farnham, A., Berger Gonzalez de White, M., Labhardt, N.D., Tediosi, F., Akweongo, P., Kuwawenaruwa, A. and Zinsstag, J. (2021) How to bring research evidence into policy? Synthesizing strategies of five research projects in low-and middle-income countries. *Health Research Policy and Systems*, 19(1), p.29. Available at: <https://link.springer.com/article/10.1186/s12961-020-00646-1>
- Ferré, M. et al. (2025) 'Culture of impact in agricultural research organisations: What for and how?', *Research Policy*, 54(1), p. 105140. Available at: <https://doi.org/10.1016/j.respol.2024.105140>.
- Gilligan, C.A. (2021) 'REF Impact Case Study: Protecting Global Food Production and Woodland Environments: Forecasting and Managing Plant Disease through Epidemiological Modelling'. Available at: <https://ref2021-resultsapp-live.azurewebsites.net/impact/8f802bfb-795a-4c66-9357-7532277fd40d?page=1>
- Graham, V., Auld, T., Beaumont, L., Bell, L., Dunford, S., Gallagher, R., Hancock, N., Leishman, M.R., Mitchell, P., Staas, L. and Hughes, L. (2021) 'Embedding Biodiversity Research into Climate Adaptation Policy and Practice', *Global Change Biology* 27(19), pp. 4935–45. Available at: <https://doi.org/10.1111/gcb.15770>
- Hearn, S., Lomofsky, D., Chames, C., Datta, A. and Davies, N. (2021) Evaluation of the International Development Research Centre's Strategy to Scale Research Results. International Development Research Centre. Available at: <https://idl-bnc-idrc.dspacedirect.org/handle/10625/60649>
- Hörner, D., and Wollni, M. (2021) 'Integrated Soil Fertility Management and Household Welfare in Ethiopia', *Food Policy* 100. Available at: <https://doi.org/10.1016/j.foodpol.2020.102022>
- IDRC (2022) *Evidence-Informed Policies and Practices to Improve Maternal and Child Health*. Available at: <https://idrc.ca/en/evidence-informed-policies-and-practices-improve-maternal-and-child-health>
- Jones, K. and Bice, S. (2021) Research for impact: three keys for research implementation. *Policy Design and Practice*, 4(3), pp.392–412. Available at: <https://doi.org/10.1080/25741292.2021.1936761>
- Kankya, C., Okello, J., Muwanguzi, D., Monje, F., Mugizi, D., Muleme, J., Baguma, J., Taremwa, M., Ayebale, R., Ayoo, S. and Knight-Johnes, T. (2024) Impacts of one health on education, research, and development: a case of Uganda. *One Health Cases*, (2024), p.ohcs20240029. Available at: <https://doi.org/10.1079/onehealthcases.2024.0029>
- Key, I., Smith, A.C., Turner, B., Chausson, A., Girardin, C.A.J., Macgillivray, M. and Seddon, N. (2022) 'Biodiversity Outcomes of Nature-Based Solutions for Climate Change Adaptation: Characterising the Evidence Base', *Frontiers in Environmental Science* 10. Available at: <https://doi.org/10.3389/fenvs.2022.905767>
- Kirchherr, J., Hartley, K. and Tukker, A. (2023) 'Missions and Mission-Oriented Innovation Policy for Sustainability: A Review and Critical Reflection', *Environmental Innovation and Societal Transitions* 47. Available at: <https://doi.org/10.1016/j.eist.2023.100721>
- Lafontaine, A., Volonté, C., Pionetti, C., Moreno, C. and Gonzales, M. (2018) Collaborative Adaptation Research Initiative in Africa and Asia: Summative Evaluation. Available at: <http://hdl.handle.net/10625/57296>
- Languille, S., Visser, M., Ahmed, Z., Driscoll, Z. and Grabham, J. (2024) Evaluation of the Applied Research Portfolio of the Knowledge and Innovation Exchange (KIX): Phase I and Phase II Evaluation Reports. Available at: <https://hdl.handle.net/10625/63237>
- Larrue, P. (2021) 'The design and implementation of mission-oriented innovation policies: A new systemic policy approach to address societal challenges', *OECD Science, Technology and Industry Policy Papers*, No. 100, OECD Publishing, Paris. Available at: <https://doi.org/10.1787/3f6c76a4-en>.
- Lavery, T.H., Morgain, R., Fitzsimons, J.A., Fluin, J., Macgregor, N.A., Robinson, N.M., Scheele, B.C., Selwood, K.E., Spindler, R., Vuong, H., West, S., Wintle, B.A. and Lindenmayer, D.B. (2021) 'Impact Indicators for Biodiversity Conservation Research: Measuring Influence within and beyond Academia', *BioScience* 71(4), pp. 383–95. Available at: <https://doi.org/10.1093/biosci/biaa159>

- Leach, M., Scoones, I. and Stirling, A. (2007) *Pathways to Sustainability: An Overview of the STEPS Centre Approach*, STEPS Approach Paper, Brighton: STEPS. Available at: <https://hdl.handle.net/10535/8246>
- Lucey, J.M, Palmer, G., Yeong, K.L., Edwards, M.J.M., Scriven, S.A., Reynolds, G. and Hill, J.K. (2017) 'Reframing the Evidence Base for Policy-Relevance to Increase Impact: A Case Study on Forest Fragmentation in the Oil Palm Sector', *Journal of Applied Ecology* 54(3), pp. 731–36. Available at: <https://doi.org/10.1111/1365-2664.12845>
- Maru, Y., Sparrow, A., Stirzaker, R. and Davies, J. (2018) Integrated agricultural research for development (IAR4D) from a theory of change perspective. *Agricultural Systems*, 165, pp.310–320. Available at: <https://doi.org/10.1016/j.agsy.2016.09.012>
- McLean, R., Gargani, J. and Chambers, R. (2019) *Scaling impact: innovation for the public good*. Routledge. Available at: <https://doi.org/10.4324/9780429468025>
- Mponela, P., Manda, J., Kinyua, M. and Kihara, Job. (2023) 'The Impact of Participatory Action Research and Endogenous Integrated Soil Fertility Management on Farm-Gate Dietary Outputs in Northern Tanzania'. *Heliyon* 9(11). Available at: <https://doi.org/10.1016/j.heliyon.2023.e21888>
- Narain, D., Bull, J.W., Alikhanova, S., Evans, M.C., Markham, R. and Maron, M. (2022) 'A Step Change Needed to Secure a Nature-Positive Future—Is It in Reach?' *One Earth* 5(6), pp. 589–92. Available at: <https://doi.org/10.1016/j.oneear.2022.05.016>
- Newman, K., Bharadwaj, S. and Fransman, J. (2019) 'Rethinking Research Impact through Principles for Fair and Equitable Partnerships', *IDS Bulletin* 50(1). Available at : <https://bulletin.ids.ac.uk/index.php/idsbo/article/view/3019/Online%20article>
- Noble, M.M. and Fulton, C.J. (2020) Pathways to impact for aquatic conservation science via multi-modal communication and stakeholder engagement. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 30(9), pp.1791–1797. Available at: <https://doi.org/10.1002/aqc.3380>
- Oliver, K., Hopkins, A., Boaz, A., Guillot-Wright, S. and Cairney, P. (2022) 'What Works to Promote Research-Policy Engagement?', *Evidence & Policy* 18(4), pp. 691–713. Available at: <https://doi.org/10.1332/174426421X16420918447616>
- Parrao, C.G., Rodrigues, D., Romero, C. and Snilstveit, B. (2024) 'Mapping the Evidence on Interventions to Address Climate and Biodiversity Crises in Low- and Middle-Income Countries: A Framework Proposal', 3ie International Initiative for Impact Evaluation Working Paper 60. Available at: <https://doi.org/10.23846/WP0060>
- Pettorelli, N., Graham, N.A., Seddon, N., Maria da Cunha Bustamante, M., Lowton, M.J., Sutherland, W.J., Koldewey, H.J., Prentice, H.C. and Barlow, J. (2021) Time to integrate global climate change and biodiversity science-policy agendas. *Journal of Applied Ecology*, 58(11), pp.2384–2393. Available at: <https://doi.org/10.1111/1365-2664.13985>
- Reed, M.S., Bryce, R. and Machen, R. (2018) 'Pathways To Policy Impact: A New Approach For Planning And Evidencing Research Impact', *Evidence & Policy* 14(3), pp. 431–458. Available at: <https://doi.org/10.1332/174426418X15326967547242>
- Sartas, M., Schut, M., Proietti, C., Thiele, G. and Leeuwis, C. (2020) Scaling readiness: science and practice of an approach to enhance impact of research for development. *Agricultural systems*, 183, p.102874. Available at: <https://doi.org/10.1016/j.agsy.2020.102874>
- Sauveplane-Stirling, V., Di Ruggerio, E., Benea, C., Nawaz, E., Aimone, A., Richardson, E. and Sellen, D. (2019) External Review of IDRC's Food, Environment, and Health (FEH) Program 2015–2020: Final Report. International Development Research Centre. Available at: <https://idl-bnc-idrc.dspacedirect.org/handle/10625/58260>
- Snapp, S.S., DeDecker, J. and Davis, A.S. (2019) 'Farmer Participatory Research Advances Sustainable Agriculture: Lessons from Michigan and Malawi', *Agronomy Journal* 111(6), pp. 2681–91. Available at: <https://doi.org/10.2134/agronj2018.12.0769>
- Stoudmann, N., Savilaakso, S., Waeber, P.O., Garcia, C., Byrne, J. and Adams, V.M. (2023) 'Overview of Evidence on Mechanisms Affecting the Outcomes of Terrestrial Multiple-Use Protected Areas', *One Earth* 6(5), pp. 492–504. Available at: <https://doi.org/10.1016/j.oneear.2023.04.005>
- Terrapon-Pfaff, J., Gröne, M.C., Dienst, C. and Ortiz, W. (2018) Impact pathways of small-scale energy projects in the global south—Findings from a systematic evaluation. *Renewable and Sustainable Energy Reviews*, 95, pp.84–94. Available at: <https://doi.org/10.1016/j.rser.2018.06.045>

Tomich, T.P., Preetmoninder, L., Dijkman, J., Coley, M., Webb, P. and Gill, M. (2019) 'Agri-Food Systems in International Research for Development: Ten Theses Regarding Impact Pathways, Partnerships, Program Design, and Priority-Setting for Rural Prosperity', *Agricultural Systems* 172, pp. 101–9. Available at: <https://doi.org/10.1016/j.agsy.2018.12.004>

UNDP (2024) *Evaluation of UNDP Support to Ecosystem Management and Biodiversity Conservation*. Available at: https://www.unevaluation.org/member_publications/evaluation-undp-support-ecosystem-management-and-biodiversity-conservation

Valeria, I., Broadbent, E., Roberts, E., Sullivan, C. and Vincent, K. (2022) ESRC-FCDO Raising Learning Outcomes Programme Evaluation Report. Available at: <https://www.ukri.org/publications/esrc-fcdo-raising-learning-outcomes-programme-evaluation-report/>

Vernooy, R. (2025) *The Impact of Agricultural Policy Measures on Protecting Agrobiodiversity, Promoting Sustainable Farming, and Improving Farmers' Incomes: A Desk Review of Experiences from Europe*. CGIAR. Available at: <https://www.cgiar.org/research/publication/impact-agricultural-policy-measures-protecting-agrobiodiversity-promoting-sustainable-farming-improving-farmers-incomes-desk-review-experiences-europe/>

Webber, S., Enemark, U., Larsen, C.E.S., Kasanda Sesabo, J. and Wahome, R. (2022) *Performance Evaluation of Swedish Research Cooperation with Tanzania 2015 to 2022*. Sida. Available at: <https://www.sida.se/en/publications/performance-evaluation-of-swedish-research-cooperation-with-tanzania-2015-to-2022>

Weiskopf, S.R., Harmáčková, Z.V., Johnson, C.G., Londoño-Murcia, M.C., Miller, B.W., Myers, B.J., Pereira, L., Arce-Plata, M.I., Blanchard, J.L., Ferrier, S. and Fulton, E.A. (2022) Increasing the uptake of ecological model results in policy decisions to improve biodiversity outcomes. *Environmental Modelling & Software*, 149, p.105318. Available at: <https://doi.org/10.1016/j.envsoft.2022.105318>

Xavier, L.Y., Guilhon, M., Gonçalves, L.R., Ribeiro Corrêa, M. and Turra, A. (2022) 'Waves of Change: Towards Ecosystem-Based Management to Climate Change Adaptation', *Sustainability* 14(3). Available at: <https://doi.org/10.3390/su14031317>

Young, J.C., Waylen, K.A., Sarkki, S., Albon, S., Bainbridge, I., Balian, E., Davidson, J., Edwards, D., Fairley, R., Margerison, C., McCracken, D., Owen, R., Quine, C.P., Stewart-Roper, C., Thompson, D., Tinch, R., Van den Hove, S. and Watt, A. (2014) 'Improving the Science-Policy Dialogue to Meet the Challenges of Biodiversity Conservation: Having Conversations Rather than Talking at One-Another', *Biodiversity and Conservation* 23(2), pp. 387–404. Available at: <https://doi.org/10.1007/s10531-013-0607-0>



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