

Integrating impact into your case for support – example 2

Tropical forest climate resilience network: transforming governance of climate risks for poverty reduction in Brazil, Colombia, Rwanda and Uganda

Context

This is an application to a ESRC-GCRF Climate Resilience Network Scoping call. Projects could focus on up to three themes addressing the consequences of climate change: (1) system behaviours and responses including the amplifying or dampening effect of external pressures; (2) Institutional capacity for decision-making across risk domains; (3) Managing complexity in disaster response and recovery. This call came out after pathways to impact were no longer required for UKRI proposals, and the call specification stated that “Applicants must clearly articulate their impact plans, demonstrating how they meet ODA requirements throughout their ‘Case for Support’ submission.”

Note: key names, countries, habitats and other details have been changed in this example proposal.

Objectives

Although forests cover less than 3% of the Earth's surface they contain twice as much carbon as all the world's oceans. However, greenhouse gas emissions from drained or burned forests account for 5% of the global carbon budget, with the majority of these emissions coming from tropical forests. Forest degradation is both a cause and effect of climate change, and interacts with climate risks to threaten the livelihoods of some of the world's most remote and impoverished communities. Improving the governance of tropical forests to manage these risks is complicated by limited awareness of forest extent and condition and resistance from stakeholders with competing interests. The majority of research to date has focused on natural science assessments of climate risks in tropical forests, and there is limited understanding of cross-sectoral social, economic and institutional challenges and opportunities, or the experience and management of risk from the perspective of the most affected populations.

AIM

This project will develop a researcher-practitioner-policy maker network to inform and identify governance actions that increase the resilience of poor and marginalised groups to cope with climate risks, while enabling the conservation, restoration and sustainable management of tropical forests.

RESEARCH AND IMPACT OBJECTIVES

To achieve this aim, we will build a new tropical forest climate resilience network for researchers, practitioners and policy makers, scope future research in Uganda, Rwanda, Brazil and Colombia and conduct preliminary research in Colombia and Brazil. Collectively these countries represent the majority of the area and emissions associated with tropical forests globally.

WP1: Build a new researcher-practitioner-policy maker network to enhance institutional capacity for decision-making across risk domains by:

1.1 Building: a) knowledge and skills in environmental governance; b) capacity for identifying and engaging relevant stakeholders in preliminary research as part of this project and future forest governance research, policy and practice; c) access to social and financial capital for network members; d) capacity for joint resolution reporting between international policy organisations

1.2 Characterising the relative interest, influence and impact of network actors from policy, business and local communities, including the identification of vulnerable and hard-to-reach groups, who have a stake in ensuring protection and responsible management of tropical forests, and can be engaged in preliminary research (as part of this project) and future projects
1.3 Co-producing a climate resilience research agenda in the forests of Brazil, Uganda, Rwanda and Colombia, leading to a Network+ bid and other funding proposals

WP2: Co-produce an analysis of system behaviours and responses with local partners by:

2.1 Critically evaluating a broad range of governance actions, including public-private ("blended") finance mechanisms, to reduce climate risks through forest restoration and protection whilst enhancing livelihoods through desk-based research, preliminary research in Brazil and Colombia, and new data from ongoing tropical forest projects

2.2 Assessing the vulnerability of forests in all four study countries to complex risks arising from the interaction between climate change and governance of tropical forests

Case for support

Aim and objectives

This project will develop a researcher-practitioner-policy maker network to inform and identify governance actions that increase the resilience of poor and marginalised groups to cope with climate risks, while enabling the conservation, restoration and sustainable management of tropical forests. The objectives of this project are detailed in the **Objectives section of the JeS form**, addressing the first two themes of the call: (1) enhancing institutional capacity for decision-making across risk domains; and (2) analysing system behaviours and responses.

Rationale

Forests are the world's largest terrestrial carbon store and important for the livelihoods of some of the most remote and impoverished populations in the tropics (UNEP, 2017). However, damaged tropical forests are a major source of greenhouse gases. Forest degradation is both a cause of climate change (accounting for 5% of the world's carbon budget) and an effect, exacerbating forest oxidation emissions from drained tropical forests in conjunction with an increased likelihood and severity of forest fires (IPCC, 2019; Leifeld et al. 2019). Globally ~11% of forests have been drained, and despite covering less than 0.4% of the global land area, they are responsible for ~5% of global anthropogenic GHG emissions (Leifeld & Menichetti 2018; Leifeld et al. 2019). When these forests burn, this can rise to 10% (Joosten, 2015). Improving the governance of tropical forests to manage these risks is complicated by limited awareness of forest extent and condition, co-ordination issues across semi-autonomous provinces and between countries, low visibility of forests in national policy making and resistance from stakeholders with competing interests (Smith et al., 2019).

However, the majority of research to date has focused on natural science assessments of climate risks in tropical forests, and there is limited understanding of cross-sectoral social, economic and institutional challenges and opportunities, or the experience and management of risk from the perspective of the most affected populations (Ward et al., 2020). As a result, policy makers are faced with having to make decisions with limited information about likely outcomes. For example, they may need to decide between regulating to limit agricultural burning to low risk seasons or promoting certification schemes and payments for ecosystem services that reward restoration and more sustainable management. Uncertainty arises, for example, because landowners and managers may not respond predictably to regulation or incentives, or because climate change may limit the effectiveness of restoration policies limit the success of forest rewetting strategies (for instance, where water tables cannot be adequately raised, or extended periods of climatic drought, e.g. associated with ENSO or IOD (Indian Ocean Dipole) events). Increased costs of restoration under climate change may alter the balance between the profitability of oil palm versus payments for ecosystem services schemes, which will also be influenced by markets for palm oil and carbon or other ecosystem services. These aspects, in turn, are influenced by rapidly changing consumer preferences as public awareness grows around the impacts of palm oil and more generally of forest exploitation (Harrison et al., 2019). Characterising the risks arising from the interaction of these drivers is important, if future policy is to build climate resilience whilst enabling livelihood adaptation.

Many ongoing efforts to tackle these challenges focus on finding ways to manage visible climate risks (e.g. technical challenges around restoration management, the creation of new livelihood options, or the management of financial risks in blended finance). However, this network goes beyond the management of visible risks and aims to investigate conceptual risks (e.g. the transformation of systems, structures, financial models and modes of governance) and existential risks (e.g. why the institutions that govern forests exist, and who should they serve) that typify the climate emergency (Fazey et al., 2018). By examining these more systemic climate risks, we will move beyond risk management to the identification of innovations that could transform the governance of tropical forests for the poor and marginalized populations that are most exposed to these risks.

The proposed network brings together members of the tropical forest research, policy and practitioner communities from around the world to mitigate climate risks by investigating scenarios

that can support the transformation of tropical forest governance toward responsible management. The network will be co-convened with UNEP's Global Forest Initiative (GFI): a partnership of 34 forest-related organisations around the world, mainly representing policy and practice. By establishing stronger links between GFI and the global research community, the network aims to contribute to the implementation of the UNEA4 Resolution on the Conservation and Sustainable Management of Forests in each of the GFI's four focal countries: Uganda, Rwanda, Brazil and Colombia. The network will also leverage engagement from 13 other tropical forest LMICs to build a platform on which a future Network+ project can enable countries with tropical forests understand and strengthen disaster risk governance (a key priority of the Sendai Framework for Disaster Risk Reduction and DfID's Climate and Resilience Framework Programme) and contribute towards key targets under Sustainable Development Goals (to achieve climate action, no poverty and life on land), the UN Convention to Combat Desertification (SDG15.3 on land degradation neutrality), the Ramsar Convention's forest resolution and the generation of tropical forest options to deliver National Determined Contributions under UNFCCC that also deliver benefits for impoverished populations.

Equity, added value, sustainability and management

Equity: The GFI partnership has particular strengths in convening influential bodies in the international policy and practice community alongside national Governments with interests in tropical forests. Building on the GFI's existing collaboration with University of X (the XXX project) and University of Y (the UK Tropical Forest Working Group and several research projects focused on tropical forests), this network will extend collaborative opportunities to researchers from across the UK whilst creating a wider network of researchers, primarily from the Global South, thus building capacity and strengthening local networks in those areas that are imminently at risk. In addition to the four focal countries in this proposal, network activities will be inclusive to all tropical forest countries. Building on previous engagement to monitor the implementation of the IUCN resolution on global forests (Smith et al., 2019), we will prioritise engagement with the network to countries with the largest forest area, forest carbon stocks and emissions from forests, including: Malaysia, Papua New Guinea, Brazil, China, Uganda, Chile, Sudan, Zambia, Angola, Colombia, Mexico, Venezuela and Vietnam. The network will also take steps to reduce gender inequalities in the network and its activities (see Gender Equality Statement).

Added value: Currently the GFI has only six University partners (two from the UK), and to expand its engagement with the research community, Prof Smith was asked to chair a working group to explore opportunities to fund engagement of researchers from both the Global North and South with the initiative. The working group met three times in 2019 (including at COP25 in Madrid) to identify research priorities, many of which closely aligned with aims of the GCRF Climate Resilience Network Development call. This made it possible to co-produce the current proposal in collaboration with members of the research, policy and practice community from the Global North and South. The GFI has identified a range of important research gaps ahead of the United Nations' first ever Global Forest Assessment, planned for 2021. This represents an important policy need and a significant opportunity for researchers. Whilst the GFI has convening power, it is a partnership with limited resources to mobilise and systematically convene such a network. It would be unable to conduct the research proposed in the next section, without funding from the UKRI-GCRF Collective Programme. The proposed Tropical Forest Climate Resilience Network builds on a close and proven working relationship between the co-leaders of the network, and will formalise and deepen working relationships between a number of partners who have so far collaborated more loosely through engagement with GFI. The wider network activities enable integration of research, policy and practice activities internationally that have never before been co-ordinated. As such, the proposed network offers substantial added value as a platform for future research.

Sustainability: Ultimately, sustainability will be sought via a successful Network+ award, which will be a major focus of the group's activities (see next section). Because the network is co-convened with the GFI, network members will be able to engage either as individuals or institutions in network activities, and if they choose, they may engage as formal partners in the GFI, providing a lasting institutional legacy for the network, even if the second Network+ phase is not funded. In addition to developing a full Network+ proposal, the network will facilitate the production of other research proposals across the network, in collaboration with existing GFI partners from policy and

practice (see WP2 for details). Where successful, these projects and the collaborative mechanisms established by the network will create incentives for ongoing engagement beyond the life of the project, and if successful will be integrated where possible into the Network+. Finally, by bringing together existing funded projects to share preliminary findings through network meetings (see WP1), the network will generate connectivity between researchers and projects, and create opportunities for new collaborations and synergies between projects. For our approach to monitoring and evaluation see ODA relevance statement.

Research excellence and innovation: See the *Academic beneficiaries in the JeS form* for details of how the proposed future Network+ will have the potential to act as an exemplar of research excellence and innovation in the field, driving interdisciplinary research in international development. In addition to the PIs (see Management below), this proposal brings together leading experts from across the social and natural sciences, including expertise on environmental governance (including boundary organisations and knowledge brokerage, conflict management, deliberative processes and techniques, social learning, socio-technical innovation and transitions management, adaptive management and sustainable livelihoods in social-ecological systems), environmental and agricultural policy (including expertise on the design of publicly funded agri-environment schemes and market-based policy instruments such as Payments for Ecosystem Services), forest ecology, forest management, climate change and conservation from a wide range of tropical forest contexts internationally.

Management: WP1 describes how the network will be managed in detail. Each WP has been co-developed with, and is co-led by UK and LMIC partners, representing a range of social science disciplines and interdisciplinary natural sciences. The network will be co-led by Ms Dianna Brown, Coordinator of the Global Forests Initiative based in UNEP, and Prof Smith, who holds a Chair of Forest Ecology at University of X. They will be supported by Ms Julie Van Offelen (Consultant, UNEP) and Mr Smyth (Project Manager, University of X). **Ms Brown** has led large-scale global programmes working with different UN Agencies in Africa for the past 20 years including a \$89.5M MDG-F Environment and Climate Change Programme. Currently UNEP’s Global Forests Coordinator, she leads the Global Forests Initiative (€2M), UNREDD Programme (\$8M) and the Interfaith Rainforest Initiative (\$6M). **Prof Smith** has led 18 interdisciplinary projects as PI worth a total of £3.8M (two worth >£1M), and contributed to a further 27 projects as Co-I, Work Package leader or equivalent, mainly in drylands and forests around the world.

Research and impact

Overview: The project starts and ends by using the three horizons workshop (WP1) to identify changes in forest governance that could reduce exposure and sensitivity to climate risks, enhance adaptive capacity, or lead to deeper transformations in the governance system. These ideas are then explored through desk-based research and preliminary research to assess feasibility in Brazil and Colombia (WP2). Capacity is built through network activities, training and stakeholder analysis (WP1) and original insights emerge through stakeholder analysis (WP1) and primary and secondary research in WP2.

WP	Objectives summary	Tasks	Scale
WP1: Capacity building network activities	1.1 Build capacity for tropical forest governance research and impact through network activities	1.1 Network activities	International ¹
	1.2 Characterise tropical forest governance networks	1.2 Training	GFI focal countries ²
		1.3 Stakeholder analysis	GFI focal countries ²
	1.3 Co-produce climate resilience research agenda for forests in each focal country, leading to funding bids	1.4 Network+ proposal development using 3 Horizons method	GFI focal countries ² with international collaborators ¹
WP2: Governance options for climate resilient	2.1 Evaluate governance actions to reduce climate risks while enhancing livelihoods in tropical forests	2.1 Literature review	GFI focal countries ²
		2.2 Feasibility studies	Brazil and Colombia
	2.2 Assess vulnerability of forests in focal countries to complex risks arising	Synthesis of tasks 1.4, 2.1 and 2.2	GFI focal countries ²

tropical forests	from interactions between climate change and governance		
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¹ Open to members of research, policy and practice communities in all tropical forest countries

² Brazil, Rwanda, Uganda and Colombia

WP1: Capacity building network activities

Co-led by Prof A (University of A) and Ms B (UNEP)

Aims: This WP will build an international researcher-practitioner-policy maker network that can build capacity for tropical forest governance research and impact, leading to the co-production of a climate resilience research agenda and related funding bids.

1.1 Network activities: The network will be open to members from research, policy and practice (including business) communities in all tropical forest countries. Although this proposal only seeks funding for a core group to attend face-to-face meetings, they will be open to all members.

- Two face-to-face meetings open to all members of the network
 - UK meeting: the first meeting (January 2021) will include use the Three Horizons method to characterize governance challenges and opportunities for research and action (task 1.4), training (task 1.2) and 3i's stakeholder analysis (task 1.3)
 - Brazil meeting: the second meeting (April 2021 in time for June Network+ deadline) will discuss preliminary findings from WPs 1 and 2, how to communicate findings to key stakeholders, and the development of a Network+ bid
 - A survey will be conducted at the first and second workshop to assess levels of interaction, learning and trust between network members over time
- Video calls open to all network members every other month to update and get input to the project, including sharing of preliminary findings (where relevant/possible) from ongoing research projects in each country (e.g. the UK Space Agency XXX project and BBSRC SustainForest project in South America, the ESRC Making of an Integrated Landscape of Conservation project in Colombia, NERC's XXX project reducing GHG emissions from oil palm production in Brazil and recent UKRI-GCRF tropical forest investments)
- Training in bid writing co-developed and delivered by network members, leading to development of funding proposals from LMIC partners to GCRF and national funders in the UK, Canada, Germany, Colombia, Japan and elsewhere in collaboration with UNEP and the GFI partners
- The project will collect data to monitor progress towards three international resolutions on forests from the IUCN, UNEA4 and Ramsar Convention, leading to the publication of a joint report that will also be used for UNEA annual resolution reporting. This report and other project findings will be launched at a side event hosted by the UN Global Forests Initiative at COP26 in Glasgow.

1.2 Training will take place in two waves:

- In the first wave, a train the trainer course will be co-designed and delivered during the first network meeting (January 2021, UK) with researchers from each focal country (Brazil, Rwanda, Uganda and Colombia), enabling: (1) UK researchers to learn about research methods, and relevant aspects of social, cultural and political contexts in-depth with host country researchers; and (2) UK and host country researchers to learn from each other about different aspects of environmental governance, with a focus on methods, including mediation and alternative dispute resolution, deliberative and participatory methods, and alternative forms of knowledge and knowledge exchange for impact.
- The second wave will consist of in-country training for a wider audience from research, policy and practitioner communities (identified via stakeholder analysis above and carried out between Feb-June 2021). In-country trainees will be invited to write a postcard to their future selves, identifying ways they will use their knowledge and skills to benefit themselves or others, with the option to give permission to be followed up via questionnaire and interview to assess longer-term impacts (see data management section).

1.3 Stakeholder analysis: During the first face-to-face network meeting of the Tropical Forest Climate Resilience Network (January 2021, UK), we will conduct a stakeholder analysis using the 3i's framework (interest-influence-impact) to characterise forest stakeholders in each of the four focal countries based on their relative interest, (indirect) influence and (direct) impact (Kendall et al., in prep.). This information will be used to identify training needs, co-design preliminary research in Brazil and Colombia for WP2, and to identify those who will be invited to the in-country training (second phase of task 1.2).

1.4 Network+ proposal development:

- 1.4.1** Three Horizons Practice is an approach that involves convening different actors in dialogue and combining evidence from the past and anticipatory forms of knowledge to map out how systemic pattern shifts can be facilitated (Sharpe et al., 2016). We will use this method in the first network workshop (UK) to generate new kinds of knowledge about how transformations in both formal and informal institutions can stimulate new thinking about how to achieve ambitious action to support the resilience of tropical forests to climate risks. The method will enable the group to move beyond overcoming visible risks to consider deeper transformations in systems and structures that can address conceptual and existential risks from climate change (see Rationale).
- 1.4.2** The ideas that emerge from this process will form the basis for innovative solutions that will be explored initially in WP2. Findings from WP 2 will then be used to revisit the three horizons work from the first workshop to co-develop a proposal in the second network workshop (Brazil) that meets important knowledge gaps while delivering tangible and lasting impacts for each of the four focal countries. The collaborative nature of the method, used with case study partners and other LMIC partners during the final network meeting, will enable co-design of the Network+ bid from the outset.

Research outputs: **(1.1)** Empirical stakeholder analysis paper, providing the first ever comparative analysis of forest stakeholders in Brazil, Columbia, Uganda and Rwanda, and showing the application of the novel 3i's approach; **(1.2)** A climate resilience research agenda in the forests of Brazil, Uganda, Rwanda and Colombia, leading to a Network+ bid and other funding proposals

Impacts: **(1.1)** Evidence from postcard exercise, questionnaires and interviews of medium to long-term benefits arising from the capacity that is built through in-country training; **(1.2)** Capacity to identify and effectively engage relevant stakeholders in the preliminary research of WP3 and wider environmental governance research, policy and practice; **(1.3)** Evidence of enhanced social capital (connectivity, learning and trust) between network participants; **(1.4)** Increased access to research funding for LMIC partners; **(1.5)** Enhanced collaboration between UNEA, IUCN and Ramsar on international forest policy.

WP2: Governance options for climate resilient tropical forests

Co-led by Prof C (University of C) and Dr D (Instituto de Investigaciones de la Amazonia Colombia (IIAC))

Aim: This WP will analyse system behaviours and responses to climate change by evaluating governance challenges and opportunities whilst assessing vulnerability of forests in focal countries to complex risks arising from interactions between climate change and governance.

2.1 Literature review. The literature review will be conducted in three parts:

- 2.1.1** Led by University X with inputs from XXX, XXX and XXX, we will analyse the vulnerability of forests in each study country to climate risks, based on IPCC and other published data. It will consider specific past drought, flood and fire events in each location, document the main environmental and social vulnerabilities, and identify the overall relative vulnerability trajectory of forests under different emissions scenarios.
- 2.1.2** Led by University of X with inputs from across the rest of the team, and building on findings from 2.1.1, we will scope governance actions that enable the conservation, restoration and sustainable management of tropical forests while increasing the resilience of poor and marginalised groups to cope with climate risks, with a focus on future research, policy and practice needs in Colombia, Brazil, Rwanda and Uganda

2.1.3 Led by GFI with input from across the rest of the team, we will conduct a desk-based study of blended finance options for forest conservation and restoration in collaboration with network members (funded in-kind by GFI – see letter of support). The review will consider public schemes (including Government and donor led initiatives), climate mitigation focused private schemes (e.g. compliance versus voluntary carbon markets and regional carbon markets) and climate adaptation focused private schemes (e.g. green bonds and impact investing). The emphasis will be on forest schemes where possible, drawing on experience in other ecosystems where necessary.

Insights from each part of the review will be used to assess the vulnerability of forests in each country to complex risks arising from the interaction between climate change and governance of tropical forests, considering how key governance actions may lead to trade-offs that may increase sensitivity or be maladaptive to risks.

2.2 Preliminary research in Brazil and Colombia. The findings of the review will be used to conduct preliminary research led by local partners in XXX, Brazil, and XXX, Colombia, to scope the potential for new finance mechanisms, that could be further developed and researched in a subsequent Network Plus bid.

- In Brazil, the project will scope the potential for a Landscape Enterprise Network (LENs) that could funnel private investment into restoration and sustainable management of former oil palm plantations. It will consider options for hydrological restoration versus full restoration with revegetation to swamp forest, and consider issues relating to, *inter alia*, subsidence, increased flood risk and other issues that might limit the viability of full restoration or limit productivity of plantations under hydrological restoration only. This will be done in close collaboration with the UN Global Forest Initiative, the International Tropical Forests Centre, 3Keel, Nestle, Willis Towers Watson (WTW), the Wildlife Conservation Society (WCS) and other local partners, who are already in the process of identifying investors and landowners willing to take part in the initiative, based on partner interests in Sumatra. 3Keel developed the LENs approach, and have established working relationships with WTW, Nestle and WCS who are motivated to act together to address the cost of landscape-derived risks via cost of insurance and finance/debt. Data will be collected via semi-structured interviews with key informants identified via the stakeholder analysis (task 1.3), triangulated via focus group discussions, transcribed and analysed thematically (based on the six-step process outlined by Braun and Clarke, 2006).
- In Colombia, the potential for the conservation of intact forests for mitigation of climate change will be assessed in Achuar and Kichwa indigenous communities of the Tigre and Corrientes rivers in the region of Loreto. The study area has extensive forest pole forests with soil deposits of up to 7 m. The conservation and sustainable use of these forests rely on indigenous communities that are constantly impacted by oil spills and more recently due to the construction of a new road. The field-based research, led by IIAC, will focus on understanding and valuing effective indigenous community arrangements to protect and sustainably manage natural intact forests. Communities will be visited to carry out semi-structured interviews and focus groups with leaders and community members (March-Aug following the first network meeting). Transcription and analysis (using the same methods as for Brazil) will provide insights into local perceptions and local knowledge about local governance arrangements that can be used to propose a regional conservation project by the network.

Research output: (2.1) An analysis of governance actions (including detailed evaluation of blended finance options) that enable the conservation, restoration and sustainable management of tropical forests while increasing the resilience of poor and marginalised groups to cope with climate risks, with a section on future research, policy and practice needs in Colombia, Brazil, Rwanda and Uganda.

Impacts: (2.1) Raised awareness of blended finance options for funding forest restoration in tropical forest LMICs via blended finance chapter of UN Global Forests Assessment; **(2.2)** Increased range of policy and governance options for forest restoration relevant to Government and UN priorities in each of the four focal countries

ODA compliance statement

1. Which country/countries on the DAC list will directly benefit from this proposal?

The network focuses on four LMICs that collectively represent the majority of global GHG emissions from tropical forests: Uganda, Rwanda, Brazil and Colombia. We will conduct initial action research in Brazil and Colombia and scope future research in the Rwanda and Uganda. However, the network is open to members from all DAC list countries with tropical forests. From these other countries, will prioritise engagement with LMICs that have the largest forest area, soil carbon stocks and/or emissions from forest, including: Malaysia, Papua New Guinea, Brazil, China, Uganda, Chile, Sudan, Zambia, Angola, Colombia, Mexico, Venezuela and Vietnam (based on previous engagement to monitor the implementation of the IUCN resolution on global forests; Smith et al., 2019). The four focal countries and wider network of tropical forest countries are on the DAC List of ODA Recipients.

2. How is your proposal directly and primarily relevant to the development challenges?

Tropical forests provide globally important ecological and climate benefits, plus local and national socio-economic benefits for some of the most remote and impoverished communities in countries like Brazil, Colombia, Rwanda and Uganda (UNEP, 2017). However tropical forests in these countries are threatened by drainage for agriculture, commercial forestry and infrastructure development, with the GFI's first major report pointing to policy and governance challenges as key to sustainable development and poverty reduction challenges (UNEP, 2017).

Brazil hosts the largest tropical forest in the world, responsible for more forest GHGs than any other country. Working with the Brazilian Forest Restoration Agency and other stakeholders, Harrison et al. (2019) identified over 50 development challenges relating to rewetting, revegetation, revitalization and reducing fires to provide sustainable livelihoods for forest communities. They and Estrada et al. (2018) identified an urgent need for improved governance and law enforcement to tackle these challenges. Forest fires in Brazil in 2015, that coincided with droughts cause by an ENSO (El Nino Southern Oscillation) event, triggered smog and smoke that led to over 100,000 premature deaths across the southeast Asian region (Kopitz et al., 2016). It is estimated that up to 15,000 premature deaths per year are attributable to forest fires in this region (Marlier et al. 2012). The 2015 fire is also estimated to have cost Brazil US\$16.1 billion (about 1.8% of GDP in 2014; World Bank, 2016), with wider economic impacts across the region linked to disruption of flights. Total emissions from the 2015 fire have been estimated at 1.75 GtCO₂e, almost doubling the country's annual emissions (to a level more than double that of Germany's emissions at the time) (Tacconi, 2016). Widespread fires occurred again in 2019, emphasising the urgent need for improved forest management and fire suppression.

Large forests occur also in Colombia (Lähteenoja et al., 2009; 2012; Draper et al., 2014) that are still largely intact due to its remote and inaccessible location and presence of protected areas and indigenous communities, despite growing pressure from deforestation for oil palm plantations and new roads (Baker et al., 2019). Colombian forests are threatened by the increase of droughts and severe flooding in Amazonia (Gloor et al., 2013), and the development of new transportation routes in the region (Baker et al., 2019). Evidence of the large quantities of carbon stored in swamp forest soils supported the first successful policy proposal for land-based climate change mitigation led by the Colombian Fund for the Conservation of Nature (PROFONANPE) to the Green Climate Fund. However, weak environmental governance threatens the conservation of forests in Colombia, and limits adaptation to the likely increase severe droughts and floods (Gloor et al., 2013).

The Uganda and Rwanda are developing strategies to protect and restore the forests of the XXX basin (Dargie et al., 2017). However, major governance challenges arise from lack of resources, limited understanding of the location, extent and condition of forests and wider issues relating to enforcement, corruption, insecurity and inadequate access to justice (Smith et al., 2019). Both areas are home to tropical forests and are internationally important for biodiversity and climate mitigation. In all four regions, the project seeks to identify sustainable development pathways to conserve and manage large intact forests of the XXX Basin and Colombia while restoring heavily exploited forests in Brazil.

3. How do you expect that the outcomes of your proposed activities will promote the economic development, health and social welfare of these country/countries?

The table below shows how the project will deliver seven impacts, showing the pathways to impact and means of verification. As a scoping network, the majority of impacts focus on capacity building for beneficiaries across the tropical forest research-policy-practice community, with subsequent benefits for groups who depend on these habitats for their livelihoods. Direct beneficiaries include:

- Research beneficiaries include Universite XXX (Uganda), University of XXX (Rwanda), Instituto de Investigaciones de la Amazonia Colombia (Colombia) and the International Tropical Forests Centre (Brazil)
- Policy beneficiaries include relevant Government departments and agencies in each of the four focal countries, for example Brazil's Research, Development and Innovation Agency, the Brazilian Forest Restoration Agency and the Ministry of Environment and Forestry of Brazil
- Practice beneficiaries include third sector organisations (e.g. Wildlife Conservation Society, active in all 4 focal countries) and businesses (e.g. Willis Towers Watson and Nestle)

Monitoring, Evaluation, Accountability and Learning will be a standing item in all project meetings, with all members given free access to the Fast Track Impact Evernote impact tracking system.

Impact	Pathway to impact	Means of verification
Economic and other welfare benefits arising from the capacity that is built through in-country training that benefit remote, disadvantaged forest communities (impact 1.1)	Train the trainer course co-designed & delivered by network members (task 1.2) In-country training delivered by network members to national stakeholders (task 1.2)	Evidence from postcard exercise (during project), leading to online questionnaires and phone interviews (after project)
Capacity to identify and effectively engage relevant stakeholders in environmental governance research, policy and practice (impact 1.2)	Stakeholder analysis (task 1.3)	Evidence of previously unengaged stakeholders engaging with in-country training records in all four countries and engagement of hard-to-reach groups in action research in Brazil and Colombia
Enhanced social capital (connectivity, learning and trust) between network participants (impact 1.3)	Face-to-face network meetings in UK and Brazil (task 1.1) Monthly video calls with all network members (task 1.1)	Evidence from a survey conducted at the first and second workshops to assess levels of interaction, learning and trust between network members over time
Economic benefits from increased access to research funding for LMIC partners (impact 1.4)	Training in bid writing co-developed and delivered by network members (task 1.1)	Increase in bids submitted for funding with LMIC partners from network, compared to previous yrs
Enhanced collaboration between UNEA, IUCN and Ramsar on international forest policy (impact 1.5)	Data collection to monitor progress towards 3 international resolutions on forests from the IUCN, UNEA4 and Ramsar Convention (task 1.1)	Joint global forest resolution reporting publication between UNEA, IUCN and Ramsar and feedback showing successful associated side event at UNFCCC COP26
Raised awareness of blended finance options for funding forest restoration in tropical forest LMICs (impact 2.1)	Contribution to blended finance chapter of UN Global Forests Assessment (task 1.1)	Adoption of public-private partnerships to finance forest restoration in key tropical forest countries, picked up in resolution monitoring (see previous point)
Wider range of policy and governance options for forest restoration that could	A list of relevant governance actions including a detailed feasibility assessment of	Availability of policy and governance options in local

enhance focal country economies while protecting local communities from health impacts of fire (impact 2.2)	blended finance options for Brazil, Colombia and the XXX forests of the XXX Basin	languages at relevant levels in policy organisations
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