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Master's Thesis – *MSc Sustainable Development*

***Participation in International Cooperative Initiatives (ICIs) – Incentivising and  
Enhancing Local Non-State Actors in Sustainable Transitions in the Global South.***

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## Preface

Before you lies the master's thesis 'Participation in International Cooperative Initiatives (ICIs) - Incentivising and Enhancing Local Non-State Actors in Sustainable Transitions in the Global South'. The research consists of an exploratory analysis of the practices and mechanisms that international cooperative initiatives implement to incentivise and enhance collective climate action. This report is the result of a year of research, characterised by many personal challenges, but also by ample opportunities for professional growth through internships and research assistantships. This output is intended for the realisation of research for the Master of Science in Sustainable Development - Earth System Governance at Utrecht University.

This achievement would not have been possible without the help of my supervisor Dr. Sander Chan who not only inspired this research, but was also an insightful and supportive guide throughout the process. Also, Prof. Dr. Peter Driessen for his feedback on the research proposal. I also want to thank my colleagues and friends Chiara, Helena, Evy, and Johnny for their valuable peer review and support. Last but not least, I would like to thank my family for always supporting me.

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## Abstract

As the world faces sustainability challenges due to the effects of climate change, the global environmental governance landscape is striving to implement innovative solutions that can restore ecosystems. Due to the alarmingly limited capacity of national governments to guide society towards safe pathways of climate adaptation and mitigation, a wide range of non-state and subnational actors are increasingly engaging in the pursuit of this goal. Research investigating the effectiveness of non-state and subnational efforts is still limited and mainly concerned with estimating mitigation potential, often capturing their impact only in terms of greenhouse gas emission reductions. This research contributes to the discussion by examining the role of International Cooperative Initiatives (ICIs), which involve non-state and subnational actors working across national borders to steer society towards a common goal. The potential of these actors lies in their structural elements, i.e., multi-level governance and transnational reach, which can foster their success. However, as the design of these institutions is often studied through an exclusive governance theory lens, the literature is limited in understanding the role of ICIs in achieving sustainable goals involving sectoral transitions and in understanding how ICIs can deploy their role in society to incentivise and enhance local collective action. This study develops a broader approach to examine the role of these actors. The analysis framework integrates governance concepts with insights from transition theory. Implementing this approach through a combination of methodologies, i.e., a large-N survey and a small-N study involving desk research and case studies, it explores the practices that ICIs deploy to promote purpose-driven collective climate action and enhance existing local efforts. The selected case studies are located in the Global South, where local communities are most at risk of extreme weather events and interventions are most urgent. The findings contextualise the role and potential of ICIs by analysing ongoing transitions in the agri-food, healthcare, and forest management sectors. In particular, the research looks at the requirements that local actors have to fulfil in order to be part of these international networks, the engagement of ICIs with local actors and the social platforms that have been built, and the perceived benefits of ICI representatives and their participants in belonging to these networks. In the light of the results, the research finally discusses the opportunities that emerged to stimulate and enhance climate action by local actors and highlights the common weaknesses that appeared empirically from the case studies considered.

## Key concepts

International Cooperative Initiatives; incentive and enhancement mechanisms; sustainable transitions; collective action.

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## List of acronyms (in order of appearance)

<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>ICIs</b>	International Cooperative Initiatives
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>SDGs</b>	Sustainable Development Goals
<b>UN</b>	United Nations
<b>GCAP</b>	Global Climate Action Portal
<b>COP</b>	Conference of the Parties
<b>NGOs</b>	Non-governmental organisations
<b>MLP</b>	Multi-level perspective of socio-technological transition
<b>TCG</b>	Transnational climate governance
<b>C-CID</b>	Climate Cooperative Initiatives Database
<b>GFAR</b>	Global Forum for Agriculture and Innovation
<b>HCWH SEA</b>	Health Care Without Harm Southeast Asia
<b>AFOLU</b>	Agriculture, forestry and other land use
<b>FAO</b>	Food and agriculture organisation of the United Nations
<b>IFAD</b>	International Fund for Agricultural Development
<b>CGIAR</b>	Consultative Group on International Agricultural Research
<b>NARS</b>	National Agricultural Research Systems
<b>NHS</b>	National Health Service
<b>UK</b>	United Kingdom
<b>USA</b>	United States of America
<b>GHG</b>	Greenhouse gas
<b>ASEAN</b>	Association of Southeast Asian Nations
<b>WHO</b>	World Health Organisation
<b>GGHH</b>	Global Green and Healthy Hospital
<b>MAATE</b>	Ministry of Environment, Water and Ecological Transition of Ecuador
<b>MAG</b>	Ministry of Agriculture and Livestock of Ecuador
<b>UNDP</b>	United Nations Development Programme
<b>UNEP</b>	United Nations Environment Programme
<b>REDD+</b>	The United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation
<b>CONFENIAE</b>	Confederation of Indigenous Nationalities of the Ecuadorian Amazon
<b>UTPL</b>	Universidad Técnica Particular de Loja

## 1. Introduction

### 1.1. Background

Global civil society, alongside a large cross-section of scientists, politicians, and entrepreneurs, is increasingly calling for large-scale societal changes that lead to sustainability transitions to address the environmental problems and climate change that characterise modern years. Central to the concerns is ensuring that society can operate within the biophysical limits of our planet, while promoting justice and well-being, for present and future generations (Rockström et al., 2009; Westley et al., 2011). At the international level, the climate regime during the 2015 United Nations Conference of the Parties on Climate Change agreed on a goal to keep the global temperature increase in this century well below 2 °C and to continue efforts to further limit the temperature increase to 1.5 °C (UNFCCC, 2015). However, the increase in the frequency and intensity of recurring extreme natural events over the past decade has put resource security at risk, hampering efforts to achieve such transitions by avoiding natural tipping-points (IPCC, 2022a). According to the Intergovernmental Panel on Climate Change (IPCC, 2022b), unsustainable trends in current regimes include a lack of attention to integrated policies and approaches across the economy, i.e., in governance, institutions, behaviour and lifestyles, innovation, policies and finance. Such lack of focus means that the current regimes resist the simultaneous weakening of high-carbon systems and the encouragement of low-carbon ones. These persistent and frightening gaps between government interventions, outcomes and international targets have incentivised non-state and subnational actors (such as cities and municipalities, civil society organisations, and businesses) to jointly participate in climate action in multiple areas of sustainable development (Chan et al., 2019).

Through formal and informal interactions and processes between non-state and subnational actors in the various climate action networks and partnerships that have emerged over the past decades, International Cooperative Initiatives (ICIs) have been formed. ICIs are now considered a key transnational actor in the discourse of implementing global climate action to achieve sustainable development goals (UN Secretary-General, 2014; UNCTAD, 2015; OECD, 2015). These initiatives are formed by actors operating in different contexts at different levels. For instance, these initiatives are usually formed and led in partnership by international or national organisations (e.g., governmental, or sub-governmental agencies) and large companies operating at a transnational or global level. While their participants are mostly groups of actors operating at the regional, national, or domestic level (Bakhtiari, 2018). The deliverables of ICIs include the dissemination of knowledge through publications and physical events, the setting of norms and standards, the implementation of local projects, institutional and human capacity building, awareness-raising campaigns, lobbying governments and the creation and dissemination of new products or services (Widerberg & Stripple, 2016; Chan et al., 2022).

The emergence and growth of ICIs played an essential role in the transition from the monocentric regime established by the United Nations Framework Convention on Climate Change (UNFCCC) and the Sustainable Development Goals (SDGs) to an increasingly broader system of climate change governance, where multiple actors with social and economic influence interact to set and enforce rules and steer societal and market agents behaviours (Ostrom, 2009, 2010; van Asselt & Zelli, 2018). The United Nations (UN) and the UNFCCC recognise the new constellations of individual ICIs and their participants engaged with climate and sustainability action and provide governance platforms for voluntary participation and partnerships, such as the UN's 'Partnership for the SDGs' and the



UNFCCC's 'Global Climate Action Portal' (GCAP). In 2019, at the 25th Conference of the Parties (COP25) it was decided that the UNFCCC Secretariat should "continue engaging with non-Party stakeholders and enhancing the effectiveness of the Non-State Actor Zone for Climate Action platform [currently GCAP], including the tracking of voluntary action" (UNFCCC, 2019, p. 4).

Data shows that the registered number of ICIs and of their participants committed to sustainability transitions goals continue to grow (Chan et al., 2022; UNFCCC, 2022a). Even during the global pandemic caused by COVID-19, businesses, civil society organisations, and cities and municipalities continue to show ambition in tackling climate-related challenges, setting long-term goals to achieve decarbonisation and restore biodiversity damage (Kuramochi et al., 2021).

## 1.2. Problem definition & knowledge gap

The majority of the research on ICIs and their role in global climate governance portrays these actors as institutions capable of fostering political collaboration and expediting the implementation of solutions on a global scale (Andonova, 2010; Pattberg & Widerberg, 2016; Sanderink et al., 2018). As a result, these studies concentrate on the worldwide political and socioeconomic effects of ICIs. Other research has focused on how ICIs can improve the effectiveness of governance in achieving their transition goals (e.g., Negacz et al., 2022). Furthermore, only a minority of studies focus on initiatives in the Global South, which results in a lower representation of non-state actors in these regions in UN-registered cooperative initiatives (Hale, 2018; UNFCCC, 2022a). Although the existing studies have in common the belief that local participation is crucial when it comes to sustainable transformation or transition, and how sustainable solutions already exist to some extent and are practised locally in niche areas, a framework of how ICIs can enhance existing local efforts and incentivise others does not exist. For instance, [Bäckstrand \(2006\)](#) suggests that these institutions are able to link local practices with global environmental norms in different sectors in a decentralised, dynamic, and informal way. However, there is a missing component explaining how ICIs might work with local actors to promote their best practices and harmonise international standards with them.

The reason may be that this topic has gained wide interest mainly in governance studies. But as we will see in the following chapter, an exclusive study of governance theories might be limited in 1) understanding the role of ICIs in achieving sustainable goals involving sectoral transitions and 2) understanding how ICIs can deploy their role in society to incentivise and enhance local collective action. In order to contribute to the ongoing scientific and policy debate on the role of ICIs and their potential key role in sustainable transitions, this research, through case studies, explores ICIs with a transition theory lens to fill gaps in governance theories. The research develops a framework to understand how ICIs are working as a bridge between different levels of governance (from local to global) to amplify the effects of local sustainable initiatives, align global visions, and knowledge on the needs and solutions of different sectors to make the necessary transitions, and identify gaps and opportunities for improvement.

## 1.3. Research objective & research questions

To contribute to the academic field that studies the role of non-state actors in global climate governance, the objectives of this research are to determine the role of ICIs from an analysis of their procedures in incentivising and enhancing local sustainable practices; and the engagement measures implemented by ICIs to stimulate collective and targeted climate action. Consequently, the research aims to provide key actors involved in the governance of ICIs with knowledge and information that

can contribute to successful interventions to attract local participation, improve their implementation capacity, and increase collective action in transition efforts. The research analysis unit covers the processes by which ICIs attract local groups such as small businesses, civil society organisations, national NGOs, local educational and research institutions, indigenous communities, and activist groups, and by which they enhance the capacities of their participants. The focus is further delimited by the choice of case studies from the Global South. These geographical areas, in particular West, Central and East Africa, South Asia, Central and South America and small island developing states, are characterised by communities that are more at risk of extreme weather events than other parts of the world, thus requiring more prompt and effective intervention (IPCC, 2022). The main research question is:

1. *How do International Cooperative Initiatives incentivise and enhance local non-state and subnational actors in the Global South to participate in collective climate action for sustainable transitions?*

To answer this question, four sub-questions are posed. The sub-questions guide the research methodology and lead to the conclusions. First, the requirements for local groups to become participants in an ICI are investigated. Secondly, the research explores the practices of ICIs to engage with local groups, distinguishing between new and existing participants. Finally, the research explores what the benefits of participating in an ICI are from a dual perspective a posteriori, i.e., from the perspective of the initiatives and the participants. Therefore, the sub-questions are:

2. *What requirements must local groups fulfil to become members of an International Cooperative Initiative?*
3. *How do International Cooperative Initiatives engage with local non-state and subnational actors in the Global South?*
4. *What are the benefits of participating in an International Cooperative Initiative according to ICIs representatives?*
5. *What are the perceived benefits of participating in an International Cooperative Initiative according to local non-state and subnational groups?*

In the conclusion, this project makes recommendations by comparing the analysis of best practices with the perceived barriers to participation obtained in the results.

#### 1.4. Scientific relevance & connection to the current sustainability debate

The topic chosen for this project has not received much attention so far or has been limited to specific problem areas. For example, Negacz et al. (2022) focused on the role of ICIs in addressing governance challenges in protected areas. Other literature on climate governance, on the other hand, emphasises horizontal collaborations, i.e., between multiple countries (e.g., Bauer & Steurer, 2014), rather than vertical collaborations (i.e. between actors operating at different levels, as in the case of ICI participants). Wherefore, due to this innovative focus, the findings will contribute to existing studies on climate governance. Furthermore, most of the studies on climate action that have used governance concepts are regionally concentrated in the Global North, especially in Europe (Ishtiaque, 2021). This may be due to the fact that these concepts originated in the European context. This thesis compensates for this lack by focusing on ICIs implemented in selected countries in the Global South.

Furthermore, this project has a strong social relevance. As already mentioned, local communities in the Global South, including the areas analysed in this thesis, are most at risk due to climate change. Increasing collective climate action through participation in ICIs is a win-win solution for these

communities and for sustainable transitions. In fact, ICIs very often contribute to improving the livelihoods of the communities in which they operate by providing resources and knowledge and by including local groups in a global network that strengthens the socio-economic and ecological prospects of the community (Cloutier et al., 2014; Huntjens & Zhang, 2016; Klein et al., 2017).

### 1.5. Outline of the paper & research framework

To begin with, this thesis outlines the theories and literature that describe and capture the potential of ICIs in incentivising collective action, namely, multi-level and transnational governance theories. Concepts of the transition theory are then presented to identify the context in which ICIs operate to achieve sustainable goals and to develop a framework to analyse the case studies. Secondly, the Methodology chapter defines the strategy followed by the research to collect and analyse data (Analysis Phase 1 and 2) and provide answers. Third, the Results chapter elaborates and presents the results obtained and offers a rationale for answering the research questions. Fourthly, the Discussion chapter addresses the research questions and reflect the critical issues of the research. The last chapter concludes and offers recommendations that consider the findings of the thesis and suggestions for further research.

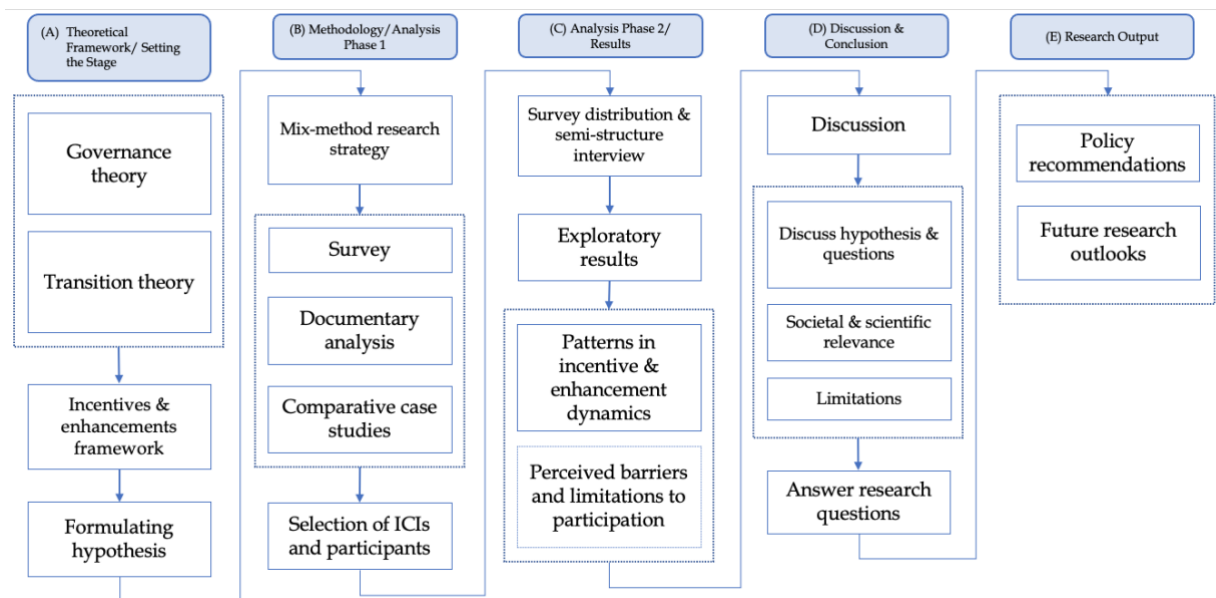


Figure 1 Research framework

## 2. Conceptual framework

Several theories were used to develop the conceptual design of this research project. First, to describe ICIs and to outline and characterise their potential in amplifying sustainable initiatives through incentives and enhancements mechanisms, we draw on theories of environmental governance, particularly multi-level (Scharpf, 1997; Hooghe & Marks, 2001; Conzelmann & Smith, 2008; Bauer & Steurer, 2014; Jänicke, 2017; Yi et al., 2019; Ishtiaque, 2021) and transnational (Abbott, 2012; Bulkeley et al., 2014; Roger et al., 2014) governance theories. Secondly, the multi-level perspective (MLP) of socio-technological transition theory (Geels, 2002; 2004; 2011) informs the framework of the context in which ICIs and local groups operate, advancing concepts including landscape, regimes, and niches. Within

MLP literature, the amplification framework (Lam et al., 2020a) is chosen to derive a framework for incentives and enhancements. The MLP is relevant as it provides key concepts on the role of the groups of actors, and their interactions, in achieving sustainable goals.

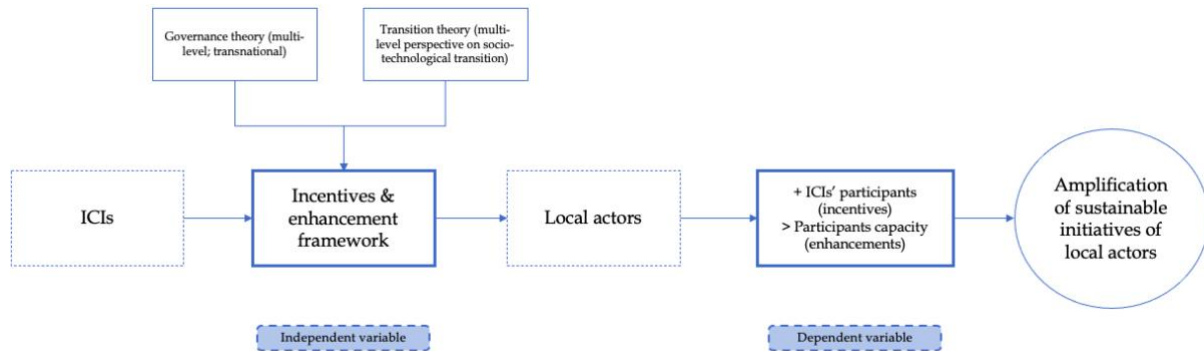


Figure 2 Conceptual framework

## 2.1. International cooperative initiatives in climate governance

ICIs are a subset of climate actions attributable to non-state or subnational actors. These institutions are characterised by their transnational scope and the number of participants (two or more, spread across different countries). These two characteristics raise high expectations on the ability of ICIs to produce significant results in climate change mitigation and adaptation. Some authors even argue that ICIs can contribute to more effective reporting and review processes under the Enhanced Transparency Framework established by the Paris Agreement (Van Asselt, 2016), designed to build trust and confidence that all countries are contributing to the global effort. Before delving into the concept of ICI, it is necessary to clarify what is meant by ‘non-state and subnational climate action’.

### 2.1.1. Non-state & subnational climate action

By non-state and subnational climate action we generally refer to those climate change management efforts that deviate from the UNFCCC regime (UNEP, 2013). These are climate change mitigation and adaptation actions conducted by actors other than national governments. In which, nevertheless, states often participate, at various jurisdictional levels. Non-state and subnational actions provide alternative governance models that complement and sometimes replace traditional schemes based on the law enforcement power of national governments (Bakhtiari, 2018). The action of non-state and subnational actors is recognised by the UNFCCC, which has developed and maintains a repository of information, i.e., the GCAP, that highlights their number, coverage and progress (UNFCCC, 2022). Some authors argue that the UNFCCC should do more than track existing actions, i.e. promote and coordinate the development (and possibly implementation) of minimum performance standards for ICIs (Hsu et al., 2016).

In 2016, during the 22nd UNFCCC Conference of the Parties held in Marrakech, the Marrakech Partnership was established. This partnership brings together national governments, non-state, and subnational actors to collaborate on global climate action in support of the implementation of the Paris Agreement. The mission of the Marrakech Partnership is to strengthen collaboration between governments and non-state and subnational actors to reduce emissions, increase resilience against climate impacts, and ensure a just transition (UNFCCC, 2022). In 2019, the Marrakech Partnership

launches the Climate Action Pathways. The pathways propose the systemic and technological changes needed within sectors that are compatible with limiting global warming to a maximum of 1.5 °C. These non-state and subnational actions can focus on climate mitigation (directly or indirectly reducing greenhouse gases), climate adaptation and resilience (directly or indirectly supporting adaptation to the impacts of climate change) or a mix of both. The thematic areas developed by the Marrakech Partnership are energy, land use, human settlements, industry, water, finance, resilience, transport and oceans and coastal zones. Although the Partnership warns that increased international cooperation is indispensable to achieve these goals (UNFCCC, 2022, p. 12), how international entities (such as ICIs) can and should assist and strengthen the efforts of local actors has not been elaborated.

## 2.2. Governance theories

In the literature studying ICIs with a theoretical governance lens, these actors are understood as ‘collaborative institutional arrangements’ that include different types of actors (transnational, international, national, local), as illustrated in Figure 3. These notions are important for this research to describe the characteristics and impact potential of ICIs.

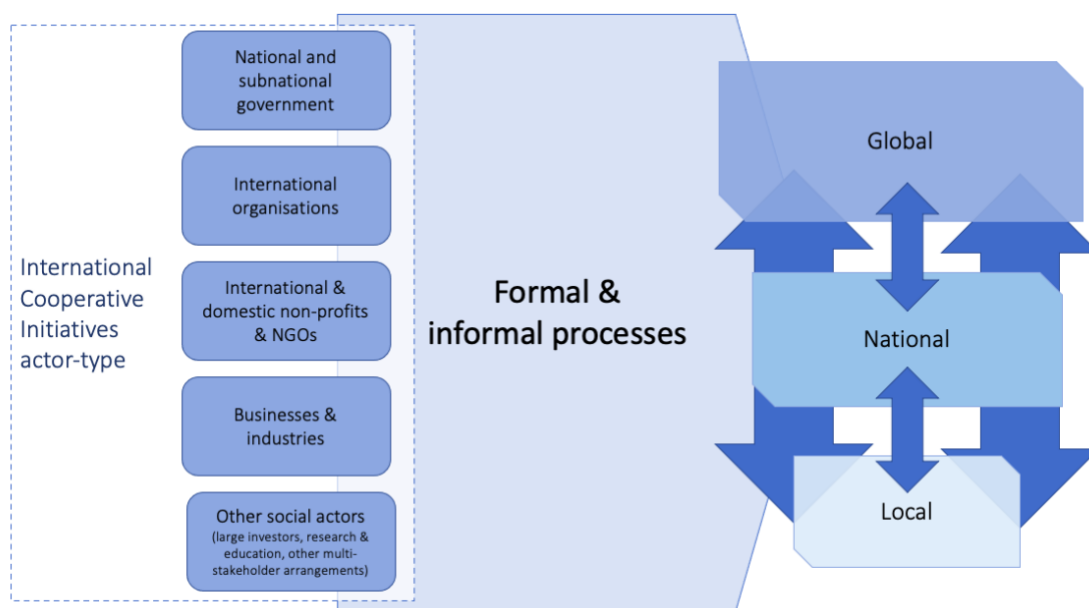


Figure 3 Multi-level governance

ICIs operate across national boundaries, performing governance functions in an attempt to guide society towards a common goal (Widerberg et al., 2016). Several concepts have been used to better describe ICIs, ranging from ‘transnational governance initiatives’ (Bulkeley et al., 2012), ‘multistakeholder’ (Pattberg & Widerberg, 2016), ‘multilevel’ (Bauer & Steurer, 2014) and ‘public-private’ partnerships (Börzel & Risse, 2005). Other scholars argue (Widerberg & Pattberg, 2015) that the nature and scope of ICIs are not a new phenomenon, but have previously been assessed under various umbrellas, including ‘transnational institutions’ (Abbott, 2012), ‘climate governance experiments’ (Hoffmann, 2011), ‘minilateralism’ (Eckersley, 2012), ‘networked climate governance’ (Pattberg, 2010) and ‘climate clubs’ (Weischer et al., 2012), among others.



Of all these theories, this research relies on the concepts of multi-level and transnational governance to describe the characteristics and potential of ICIs. This choice was made considering the constituent parts of ICIs (the levels at which they operate) and their geographical scope (transnational), and to align with current scholarly literature (Pattberg & Widerberg, 2016; Bakhtiari, 2018; Negacz et al., 2022). The two theories are introduced in the following paragraphs, but before delving into them, it is necessary to avoid confusion between concepts such as 'international' (e.g., as used in ICIs) and 'transnational' (e.g., used to delimit geographical scope). While the former commonly refers to interactions or agreements between national agencies (where nation is commonly considered synonymous with country), the latter refers to processes or agreements that cross the borders of two or more countries. The term transnational is often used to refer to processes or agreements generated by persons or organisations other than national governments (Rouse, 2019). For example, it usually refers to those institutions engaged in the pursuit of shared public policy objectives across national borders that include at least one non-state or subnational actor (such as businesses, civil society organisations or cities) (Chan et al., 2021). In this sense, the term international is used in ICIs, but transnational agreements are not excluded.

### 2.2.1. Multi-level governance

The concept of multi-level governance was originally used to describe the governance structure of the European Union (Benz & Eberlein, 1999; Hooghe & Marks, 2001; Conzelmann & Smith, 2008). Subsequently, this model has been extended to climate governance (Kern & Bulkeley, 2009; Jordan et al., 2012; Bates et al., 2013; Fidelman et al., 2013; Bauer & Steurer, 2014; Verkerk et al., 2015; Sattler et al., 2016; Jänicke, 2017). Multi-level governance was introduced in the sustainable development realm at the UN Rio Summit in 1992 as a new model to achieve a broad global mobilisation of different actors (Jänicke, 2017). This 'Rio model' of global sustainability governance was first developed in the Agenda 21 action plan (United Nations, 1992) and has subsequently been applied in other fields such as climate protection or the green economy (Schreurs & Tiberghien, 2007; Kern & Bulkeley, 2009; Jordan et al., 2012).

Multi-level governance implies a framework in which discussions and negotiations are needed continuously across levels. These require the participation of a wide range of actors, including national and local governments, international organisations, the private sector, non-governmental organisations, and other social actors (Bates et al., 2013; Bauer & Steurer, 2014; Ishtiaque, 2021). These decision-making processes can be formal or informal, adaptive, and flexible, and take place at different levels, including local, national, regional, and international (Ishtiaque, 2021). Studies that take a multi-level approach to climate change adaptation governance argue that the participation of multiple stakeholders operating at different levels is crucial to address sectoral causes and impacts and is necessary to provide an effective response (Eizaguirre et al., 2012; Jänicke, 2017; Ishtiaque, 2021; Sun & Baker, 2021). Other authors argue that fostering relationships between a wide range of governmental and non-governmental stakeholders vertically and horizontally (Yi et al., 2019; Sun & Baker, 2021) fosters the creation of policies and implementations focused on local needs (Iannuzzi et al., 2020). From these observations, we realised that multi-level structures and procedures offer opportunities for both top-down and bottom-up flow of resources and information. This can benefit local actors, enabling them to reach and influence larger scales and different contexts. Moreover, we know that they are able to mobilise actors operating at different levels and scales.

## 2.2.2. Transnational governance

According to Andonova et al. (2009), 'transnational climate governance' (TCG) occurs when transnational governance agents steer society towards public goals to address climate change. Hence, TCG implies a focus on shared goals concerning (at least) one component of climate action (i.e., mitigation or adaptation), a process of guiding specific groups of actors, and authority. In other words, it occurs "when networks operating in the transnational sphere [of climate governance] authoritatively guide constituents towards public goals" (Andonova et al., 2009, p. 56). The emergence of TCG theory has occurred in parallel with the evolution of the international climate change regime (Hale, 2018). Its development has been marked by the scale of environmental issues and institutions growing increasingly to a transnational (or global) level (Young, 2002). As a result, networks between international environmental groups have grown exponentially (Keck & Sikkink, 1998). In a continuous crescendo, global climate action has seen the emergence of new experimental approaches to climate change governance by a new constellation of actors, namely subnational governments, non-governmental organisations, businesses, individuals and other actors (Betsill & Bulkeley, 2004; Andonova et al., 2009; Hoffmann, 2011; Bulkeley & Newell, 2015).

The TCG framework depicts a fragmented landscape in which power and organisations, standards and programmes are disciplinarily diverse, dispersed and somewhat chaotic (Abbott, 2012). However, some authors argue that such a whole can produce effective collective action, support learning and, to some extent, function as a coherent system (Roger et al., 2014; Chan et al., 2015; Bellinson, 2018). From a study of TCG, we understand that transnational institutions are in the position to promote information-sharing and networking programmes, programmes that set standards, and provide funding or organise concrete projects. Indeed, transnational systems facilitate interaction, disseminate information and encourage learning, which is crucial for local non-state and subnational actors. Through these tools, local actors can observe their peers on a global scale, assess their strengths and weaknesses and learn from their successes and failures (Abbott, 2012).

From a study of governance theories, we infer that ICIs are representative of multi-level and transnational institutions and that they have the potential to play a significant role in the governance and implementation of sustainable transitions, such as Climate Action Pathways. However, these theories tell us little about how ICIs can practically implement the actions required for transitions. And they also say little about the role ICIs should play in practice. These theories provide us with a theoretical perspective that is useful for imagining what ICIs can do, given the number of participants, the levels at which they operate and their geographical scope. But to understand how these institutions can incentivise change and enhance existing efforts, we need to look at other theoretical concepts. In this regard, studies on sustainable transition can help.

## 2.3. Sustainable transition

### 2.3.1. Sustainable local pathways

Climate action is often designed, implemented, and led by local actors (Lam et al., 2020a). Although at the international level, as we have already seen, UNFCCC strives to design pathways through the development of Climate Action Pathways. However, these frameworks are more general sector guidelines and do not always consider the specificities of contexts and stakeholders. In fact, these guidelines are supposed to be adapted to the needs and specificities of different countries, regions, and

areas<sup>1</sup>. The relevance of involving local actors in participating in climate action lies in the benefits that can be derived from it. Indeed, besides contributing to the democratisation of environmental decision-making processes (Iannuzzi et al., 2020), participation has an important instrumental value. The participation of local actors in the governance of the natural resources in question not only increases social acceptance (Hatcher et al., 2000) but also improves the perception of governance and its legitimacy (Iannuzzi et al., 2020).

Sustainable initiatives for climate action include projects, products, practices, approaches, or technologies (Bennett et al., 2016; Gorissen et al., 2018). Sustainable solutions should take the form of innovations that differ from existing schemes. They usually emerge as a response to a change in the socio-technical landscape that pressures the existing socio-technical regime (Geels, 2002). Climate change, which occurs at the 'landscape' level, is the cause of pressure on traditional sectors of the regime, e.g., energy, transport, or agriculture. Through the case studies, this research applies the following framework to the agri-food, healthcare, and forest management sectors (e.g., wood industry, forestry). The challenges and changes that society faces have triggered a race to find solutions that open windows of opportunity and require broad participation. At the local level, existing research records a 'groundswell' of climate action efforts to cope with climate change and adapt to changes in extreme weather events (Chan & Hale, 2015; Pattberg et al., 2012). This wave of actions includes a significant number of mitigation-focused initiatives, mainly concentrated in the Global North, and another significant amount of climate actions in the Global South that address adaptation and resilience (Chan and Hale, 2015). Over time, these initiatives can coalesce to reshape dominant regimes and establish more sustainable pathways and thus foster transformative change (Lam et al., 2019; Pereira et al., 2021). The literature presented below explains how these regime-level changes can take place and what is the role of these sustainable local pathways in achieving this.

### 2.3.2. Transition theory

The MLP provides a framework for analysing so-called *socio-technical transitions* towards sustainability. The MLP defines transitions as long-term processes enacted by interactions between niches, regimes, and landscapes (Geels, 2002). According to the MLP literature, regime shifts occur when niche efforts to find innovative solutions align and stabilise into *dominant designs* (Geels, 2011). Dominant designs emerge when there is an alignment of expectations, which become precise and widely accepted (Geels, 2011). And when the various learning processes of thinking, doing, and organising give rise to a stable configuration (Geels, 2011). When dominant designs are missing, efforts lead to variety, and often to radical innovation. Although radical innovations appear promising at first,

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<sup>1</sup> For example, the objectives set by the guidelines for the transformation of Agriculture, Forestry and Other Land Uses (AFOLU) sector (consider in this research in two of the case studies) include "to understand how the system generates incentives for and influences capacities of actors to orient them towards behaviour that leads to a system transformation. [...] to facilitate the positive feedback that generates a self-sustained process of regeneration and performance improvement" (UNFCCC, 2021a, p. 3). Moreover, the targets set for the healthcare sector (another case study) state that "all individuals must be educated on the contribution of the operational emissions of the buildings they use to their carbon footprint, what behaviours they can change to reduce this and what the associated financial and well-being co-benefits are if such behaviour changes are adopted at scale. These changes in behaviour need to penetrate all sectors that service society, such as healthcare [...], and could be achieved by tracking and displaying live operating carbon emissions and cost performance (e.g., using smart meters). Minimizing demand on energy and water in buildings must become the new daily normal, and those who can must demand electrification and low-carbon, deep energy-efficiency retrofit of their existing buildings" (UNFCCC, 2021b, p. 4). These objectives are too general for a systematic analysis of ICIs operating in these sectors. For this reason, in chapter 3, we will use other sources to contextualise the sectors in which the case studies operate.



they do not guarantee success (Geels, 2022). Instead, when efforts result in a dominant design, new configurations open *windows of opportunity* and shape the socio-technical regime in place, steering society towards sustainable paths.

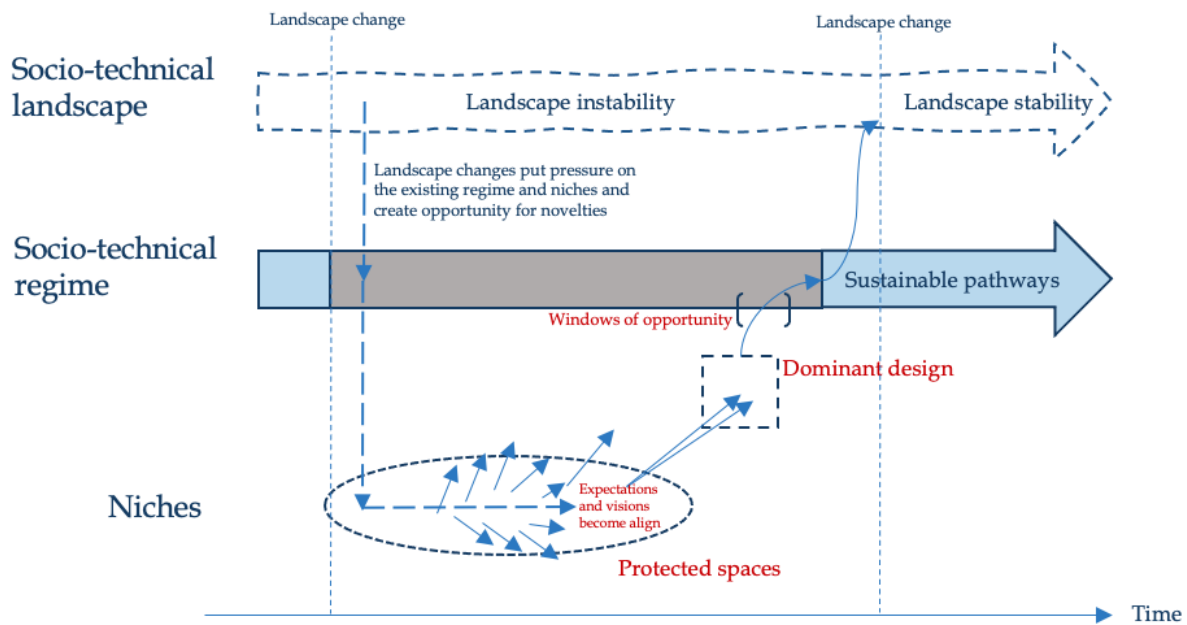


Figure 4 Multi-level perspective on transitions, adapted from Geels (2011). The red colour indicates where the role of ICI is realised. The original figure from Geels can be found in Annex I.

Niches are *protected spaces* where innovative solutions are explored in response to particular user needs (Geels, 2002). Niche actors, usually entrepreneurs or researchers of innovative solutions and civil society groups, work on innovations that differ from existing systems. ICI with their potential can create these protected spaces and can push new actors towards them.

The socio-technical regime is instead defined as the *deep structure* that keeps an existing socio-technical system stable (Geels, 2004). This concept refers to the set of rules, practices and institutions that guide and coordinate the activities of social groups that reproduce the various elements of socio-technical systems. Examples of deep structures that hold a regime in place are cognitive routines and shared beliefs, skills and competences, lifestyles and utilisation practices, institutional arrangements and favourable regulations and legally binding contracts (Geels, 2011).

Finally, the socio-technical landscape is the broader context in which regimes and niches operate at a given time and by which they are influenced (Rip & Kemp, 1998; Geels, 2011). In addition to highlighting the technical and material background by which the regime is defined, the landscape level includes elements that change slowly over time and are difficult to influence in the short term, such as demographic trends, political ideologies, social values, and macroeconomic patterns (Geels, 2011). When landscape changes occur, these put pressure on the regime and often require internal restructuring (Geels, 2004).

Innovation efforts that flourish at the niche level often draw on local, vibrant forms of knowledge, technology and experimentation, but for the most part remain segregated, focused on local needs for

sustainable development (Lam et al., 2020b). However, the literature analysed in the following paragraphs offers a framework to conceive how these efforts can be incentivised and enhanced.

#### 2.4. Incentives & enhancement framework

The final piece of the puzzle that completes the conceptual framework of this research is the *amplification* framework developed by Lam et al. (2020a). The amplification framework is based on notions derived from theories of governance and sustainable transition and is useful for this research insofar as it overlaps with the framework presented above, providing an explanation of the process in which niches become dominant in the regime. This framework focuses on amplification processes implemented by different actors (e.g., government, business, or civil society) to intentionally increase the impact of sustainable practices (e.g., replication of a sustainable practice in another city). These processes can be defined as strategies (Moore et al., 2015), mechanisms (Van den Bosch & Rotmans, 2008; Bennett et al., 2016; Gorissen et al., 2018), or models (Naber et al., 2017).

The emphasis of this existing framework deviates slightly from the focus of this research, as it focuses on the impact created when new ways of thinking, doing, and organising things (e.g., practices, processes, or products) are adopted and amplified (Leach et al., 2012). Instead, this research focuses on how actors X (i.e., ICIs) can help actors Y (i.e., local actors) in their amplification process. Thus, this new framework combines knowledge about niche development processes (Geels, 2011), in which we can identify the potential contribution that ICIs can make, and knowledge about transition initiatives amplification (Lam et al., 2020a). The term enhancement is deliberately used to reflect the support that actors with greater resources can bring to actors with fewer resources. As is often the case, ICIs have secretariats located in strategic areas, or even embedded within an international or governmental organisation, and may dispose of large budgets and experienced advisors.

The literature that studies niche innovations (Kemp et al., 1998; Schot & Geels, 2008; Geels, 2011) empirically identifies three fundamental processes for niche to emerge, and thus incentivise their practices and enhance the efforts of the actors involved.

1) *The articulation of expectations and visions.* These provide direction to learning processes and draw attention to and legitimise practices that differ from traditional ones (Geels, 2011). The most successful articulations are those that are (a) more solid (shared by several actors), (b) more specific (if expectations are too general, they give no direction) and (c) of higher quality (the content of expectations is backed up by ongoing projects) (Schot & Geels, 2008). ICIs, having actors operating at both regime and niche levels and having the ability to influence both, must act as a bridge to create awareness of problems and windows of opportunity for local actors to enter the niches. Moreover, having an authoritative character, they can and should share guidelines based on empirics, science, and common sense.

2) *The construction of social networks.* This process is important to create an interested community behind new pathways, facilitate interactions between stakeholders and provide the necessary resources (money, people, competences). The most effective social networks are those that are (a) broad and diverse, i.e., multiple types of stakeholders are included to facilitate the articulation of multiple views and voices; (b) deep, i.e., people representing organisations should be able to mobilise commitment and resources within their organisations and networks (Schot & Geels, 2008). In particular, the participation of influential actors can convey legitimacy and resources to niche innovations (Geels, 2011). Given their transnational character, ICIs have the potential to connect niche actors in different areas and unite them in joint efforts by sharing knowledge and resources through platforms that go beyond geographical

spaces (namely, online agreements). Furthermore, they can incentivise new participations by promoting collective action as a win-win solution. That is, by promoting networks that can benefit local actors on a socio-economic level, thus achieving economic as well as common goals for a sustainable transition.

3) *Multi-dimensional learning processes.* These processes include the articulation of learning and self-learning mechanisms on various dimensions (Geels, 2011), naming, social, economic and political. These processes can redirect the evolving dynamics towards the desired path, focusing on technical designs, market demands and user preferences, infrastructural requirements, organisational issues and business models, political instruments, and symbolic meanings. They are most effective when (a) external actors are present in social networks to enable a wide range of actions and (b) when they enable changes in cognitive frameworks and social assumptions (Schot & Geels, 2008). Given their multi-level character and their availability of various resources, influential actors and channels in which knowledge can flow globally, ICIs can contribute to the development of solutions that foster innovation by local groups operating in niches.

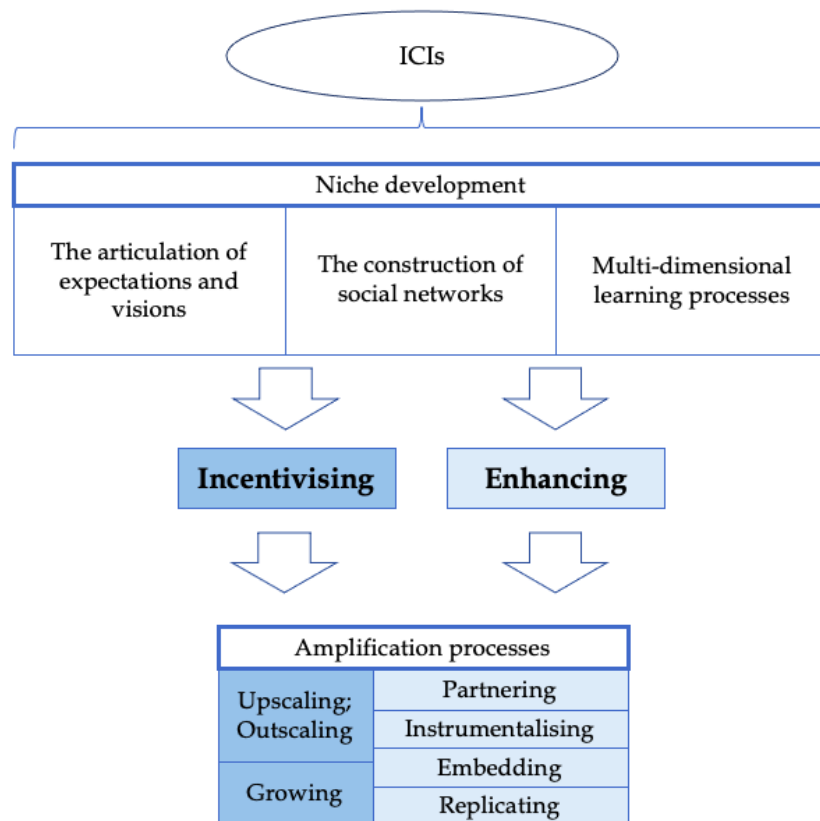


Figure 5 Incentive & enhancement framework

We now see how when an ICI assumes a role capable of developing a niche, thus fulfilling the three processes described above, it is also able to provide services for the amplification of the efforts of local actors. Processes aimed at amplifying (Lam et al., 2020a), or accelerating (Gorissen et al., 2018), the efforts of niches and their actors can be distinguished between incentive and enhancement practices. Processes with the ultimate aim of incentivising new actors in transition efforts can be defined as

'outscaling', 'upscaling' and 'growing'. Processes aimed at enhancing, i.e., supporting, empowering, and promoting the efforts of actors can be defined as: 'partnership', 'instrumentalisation', 'embedding' and 'replication'.

*Upscaling* (or *outscaling*) comprises practices aimed at spreading ideas and ways of doing and managing that are sustainable and innovative compared to traditional models (Millar & Connell, 2010; Hermans et al., 2016; Gorissen et al., 2018). Their aim is to influence more people, entities, systems, to adopt the same approaches or to cover a new geographical area beyond the scope and responsibility of the pioneering initiative. These practices are traditionally associated with the dynamics of adoption and diffusion of innovations (Rogers, 2003). Upscaling practices are measured by identifying users, who fall outside the core group of initial pioneers (Boyer, 2015), who take part in the initiative by adopting the innovative practices (Desa & Koch, 2014). In these scaling practices, the focus is on not compromising the values and operational models that constitute the innovative practices (Staggenborg & Ogrodnik, 2015).

*Growing* includes efforts to grow the initiative in terms of human, institutional or operational volumes (Naber et al., 2017). These practices are usually used in the early stages of an innovation, when it has yet to be recognised as effective, sustainable, and legitimised (Naber et al., 2017). The long-term results obtained by following these practices are reminiscent of scaling, i.e., influencing a large number of users and geographic areas.

*Partnering* encompasses the efforts and structures put in place to complement and ensure a synergy of the resources, skills, and capacities of the members of an initiative to ensure efficiency to effectiveness and continuity of the new ways of doing and managing (Gorissen et al., 2018). The aims of partnering also include enabling collective learning and addressing inequalities in projects through collaborations between actors (Devolder & Block, 2015) and co-production of services and knowledge (Sagaris, 2014; Healey, 2015).

*Instrumentalising* includes those practices aimed at capitalising on the opportunities that open up in the context in which they operate and is a key process for strengthening and giving continuity to new ways of doing and managing. On the one hand, this concept implies the ability of local actors to acquire resources available in the multi-level context in which they operate (Forrest & Wiek, 2015; Healey, 2015). On the other hand, awareness of the need for change, an approach of openness to transition of the agents forming the context (Chmutina et al., 2014). Instrumentalising practices are fundamental to revitalising local areas and innovating the tools and structures of local actors (Fraser & Kick, 2014).

*Embedding* refers to those efforts at the institutional level to integrate new ways of doing and managing that come from niches into existing models of governance (Gorissen et al., 2018). With this process, the agents and institutions that form the multi-level context in which local actors operate, align with emerging innovations and formalise emerging projects and methods (Bussu & Bartels, 2014); and align strategies, agendas and goals to drive collective actions (Boyer, 2015).

*Replication* is the process of extending local and niche knowledge to other places and contexts (Naber et al., 2017). This practice involves the adoption of new ways of doing and managing by new actors and institutions in order to spread these innovations (Gorissen et al., 2018). Typically, but not limited to, this is the last process of amplification of niche efforts. Replication is crucial to contribute to systemic change (Garcia et al., 2015), and to spread change through networks of actors dedicated to similar purposes (Boyer, 2015).

	Process	Definition	Source
Incentivising	<b>Outscaling</b>	Outscaling refers to the dissemination of “programs, products, ideas or innovative approaches in order to affect more people or to cover a larger geographical area”.	Hermans et al., 2016, p. 287.
	<b>Upscaling</b>	Upscaling refers to increasing the number of “members, supporters or users of a single transition initiative in order to spread these new ways of [thinking, doing and organising]”.	Gorissen et al. 2018, p. 173.
	<b>Growing</b>	Growing refers to “a dynamic in which an experiment continues, and more actors participate in the experiment or market demand increases – the experiment grows in size or activity”.	Naber et al. 2017, p. 344.
Enhancing	<b>Partnering</b>	To pool and/or complement “resources, competences, and capacities in order to exploit synergies to support and ensure the continuity of the new ways of [thinking, doing and organising]”.	Gorissen et al. 2018, p. 173.
	<b>Instrumentalising</b>	To tap into and capitalise on “opportunities provided by the multi-level governance context [...] in order to strengthen new ways of [thinking, doing and organising] locally”.	Gorissen et al. 2018, p. 173.
	<b>Embedding</b>	To align “old and new ways of [thinking, doing and organising] in order to integrate them into [...] governance patterns”.	Gorissen et al. 2018, p. 173.
	<b>Replicating</b>	To replicate means that “[t]he main concept of the experiment is replicated in other locations or contexts”.	Naber et al. 2017, p. 344.

Figure 6 Amplification processes

## 2.5. Relevance of the framework & hypothesis

There are other different approaches that study how changes and transitions take place in society, e.g. the technological innovation system approach (Hekkert et al., 2007), the disruptive innovation (Christensen et al., 1997), and technological discontinuity theories (Anderson & Tushman, 1990), and the long-wave theory of techno-economic paradigm shifts (Freeman et al., 2001). However, of these, MLP is the most appropriate because it focuses in detail on the various social groups, their strategies, resources, beliefs and above all their interactions (Geels, 2011). The others mentioned above, while taking into account a multidimensional context, do not, for instance, address the difficulties that emerging innovations face with emerging systems (technological innovation system approach). Or they do not take into account the cultural and social context, but only work with technological and market systems (disruptive innovation and technological discontinuity theories). Or they focus more on an aggregative outcome without paying attention to the details of particular actors or interactions (the long-wave theory of techno-economic paradigm shifts).

Therefore, referring to the MLP framework and notions derived from a study of governance theories related to the institutional structure of ICIs, we can formulate hypotheses to guide the research methodology towards answering the questions. The general hypothesis is that the key role of ICIs in regime transitions towards sustainable pathways lies in niche development and amplification of participants’ efforts. The general hypothesis is articulated in more specific hypotheses:

- 1) The first hypothesis to be evaluated is that the success or otherwise of a local actor in emerging from an innovative niche depends on the success of the niche development and amplification mechanisms deployed by ICIs.

- 2) The second hypothesis to evaluate is whether or not collective action for sustainable transitions takes on a significant scale in terms of the number of participants depends on the mechanisms that ICIs deploy to incentivise climate action.
- 3) The third hypothesis to be assessed is that the fact that local actors do or do not benefit from participation in an ICI depends on the presence of engagement and enhancement practices (amplification mechanisms) in the strategies of ICIs.

### 3. Methodology

#### 3.1. Research strategy: a mix-method approach

This research was initially developed inductively, as is common for a study that cannot be based on an exhaustive literature (Verschuren & Doorewaard, 2010). The research then turned to existing theories to find an explanation for a trait of the observed phenomenon and develop a general theory. The identification of the general theory (which finds validity, at least theoretically, in governance and transition theories), namely that ICIs can promote collective participation and amplify sustainable transition initiatives through incentives and enhancements practices, starts from three general observations. First, individual climate actions at the local level summed up collectively are unable to achieve resilience goals by 2030 (Kuramochi et al., 2021). Second, ICIs continue to emerge and the effectiveness of their impact is beginning to be recognised (Hsu et al., 2018; UNFCCC, 2022a), especially in mobilising participants (Bakhtiari, 2018; Negacz et al., 2022). Third, actors in the Global South represent only about 22% of the total number of actors involved in climate action (UNFCCC, 2022a; Chan et al., 2022). Subsequently, a deductive method - which guided the research strategy - was applied to assess whether and how the ICIs apply the patterns of the general theory and what are the prospects for improvement in the future.

The research strategy involves a mixed methods approach, including case study analysis, survey, and desk research. The relevance of each method to answering the research questions is highlighted in Figure 7.



	Questions	Methodology	Type of knowledge
Main research question	How do International Cooperative Initiatives incentivise and enhance local non-state and subnational actors in the Global South to participate in collective climate action for sustainable transitions?	All the following	Explanatory knowledge
Sub-question	What requirements must local groups fulfil to become members of an International Cooperative Initiative?	Survey; semi-structured interviews	Descriptive knowledge
Sub-question	How do International Cooperative Initiatives engage with local non-state and subnational actors in the Global South?	Survey; semi-structured interviews; desk-based research	Explanatory/ descriptive knowledge
Sub-question	What are the benefits of participating in an International Cooperative Initiative according to ICIs representatives?	Semi-structured interviews	Descriptive knowledge
Sub-question	What are the perceived benefits of participating in an International Cooperative Initiative according to local non-state and subnational groups?	Semi-structured interviews	Descriptive knowledge

Figure 7 Research strategy

### 3.1.1. Online survey

The ICI survey questions developed for this research were part of the annual UNFCCC GCAP ICI Data Collection Survey (2022). The survey was sent out prior to the start of the interviews with ICIs and participants. The ten questions included in the survey explore the participation requirements that ICIs demand from their participants (questions can be consulted in Appendix I)<sup>2</sup>. This research step is aimed at answering the first sub-question. Starting from large-N research, the survey results broadened my knowledge about the structure, participants, progress, goals achieved and limitations of ICIs, and guided the desk-based research and subsequently helped to develop the interview forms and were a source of discussion for barriers to participation. The survey was sent to 629 ICIs. 48 ICIs completed the survey (response ratio 7.63 %)<sup>3</sup>. The survey results contributed to the research by providing insight into the requirements of ICIs for actors wishing to become members.

<sup>2</sup> During my internship at the Global Center on Adaptation (GCA), I had the opportunity to work on the development of this survey in collaboration with the German Institute for Development and Sustainability (IDOS), the Communication and Engagement Division of the UNFCCC Global Climate Action team, and the Africa Research and Impact Network (ARIN). At a later stage, I concluded the project by changing affiliation to the Communication and Engagement Division of the UNFCCC Global Climate Action team, where I completed a 6-months internship. Among other tasks and responsibilities, in this latter role I had the opportunity to analyse the responses of survey participants.

<sup>3</sup> The results of the survey in their entirety are saved in an Excel file located in a OneDrive folder at Utrecht University and can be consulted upon request. The survey results specifically contribute to answering question 3, but also support the answer

### 3.1.2. Desk-based research

Once the survey data had been analysed and the case studies selected (next paragraph), desk-based research was used to study the contexts of the sectors in which the case studies operate. That is, to study the regime and the environmental problems related to it, the niches involved in finding innovative sustainable solutions and those proposed by the selected ICIs. In addition, a number of documents related to the ICIs and their projects were analysed. The documents included project plans, PowerPoint presentations, case studies published online, scientific publications concerning the principles of participation of ICIs and blog posts published on the online websites of the ICIs or their participants. These documents were retrieved via the Internet and from direct correspondence with interviewees. In the phase before the interviews, these documents were used for the preparation of the questionnaires. Subsequently, these data were of great help in providing facts and contextualisation to the statements and anecdotes of the interviews, as well as providing details and aspects that could not be addressed due to the time constraints of the interviews. This method was particularly helpful in the data processing and analysis phase, during which the interviewees' answers were put into a broader context.

### 3.1.3. Case studies

This method was chosen to obtain an in-depth and comprehensive view of a small number of cases, each with its own characteristics (Yin, 2009; Verschuren & Doorewaard, 2010; Crowe et al., 2011). Three ICIs participated in the research as case studies. In addition, nine individuals who fit into, or represent, the category of local actors were considered as participants in ICIs (Figure 9). As I conducted this research alone and did not use secondary data, the small-N research design ensured control and reliability in data collection and processing. The quality of the data was ensured by using top research software for interviews, transcription, and coding.

This phase of the research answered questions that required more knowledge and real-life practical demonstrations. In particular, it was crucial to understand how ICIs engage with local actors, what practices they put in place to bring new participants into their network and what they perceive to be the benefits of being part of their network. The findings on common patterns in the dynamics of incentives and enhancements of local actors in the case studies form the basis for the discussion in the dedicated chapter.

#### 3.1.3.1. Selection criteria

The initiatives were selected from the Climate Cooperative Initiatives Database (C-CID), a database of the project "Strengthening Non-state climate action in the global South" (ClimateSouth)<sup>4</sup>. A strategic sample of case studies was selected. The selection criteria for the ICIs to be met were as follows. ICIs were selected from those that, firstly, implement projects aimed at achieving a sustainable transition to adapt to or mitigate climate change and/or other environmental problems; secondly, that implement projects in the Global South; and thirdly, that had strategies that include the participation of local non-

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to question 2. Indeed, in the survey, ICIs were able to explain what their criteria for participation were and, at times, provided more comprehensive explanations of what participatory mechanisms are in place in the governance of their initiative.

<sup>4</sup> While writing this thesis, I had the opportunity to work on data collection on ICIs and access database information during my internship at the Global Center on Adaptation (GCA) and later as a research assistant at the German Institute for Development and Sustainability (IDOS).



state or subnational actors in the geographical area where they implement their projects. Selected ICI participants fall into one of the following categories: small businesses, civil society organisations, national NGOs, local education and research institutions, indigenous communities, or activist groups. Furthermore, ICIs operating in different geographical areas were favoured in order to obtain a diversity of data and viewpoints to give voice to the broadest spectrum of countries in the global South. Finally, cases with different sizes and operating in different sectors were favoured in order to obtain a holistic view of ICIs. In selecting the participants in the ICIs, preference was given to belonging to different types of actors.

The selected initiatives are: The Global Forum for Agriculture and Innovation (GFAR); Health Care Without Harm Southeast Asia (HCWH SEA); PROAmazonía. The areas in which the selected ICIs operate are (in order of appearance): 1) internationally (headquartered in Italy), the selected participants are based and operate in India and Kenya and other countries in Africa, Latin America, and Asia; 2) in Southeast Asia and Africa (headquartered in the Philippines), the selected participants are based and operate in Taiwan and South Africa; 3) in the Amazon region (headquartered in Ecuador), the selected participant is based and operates in Ecuador.

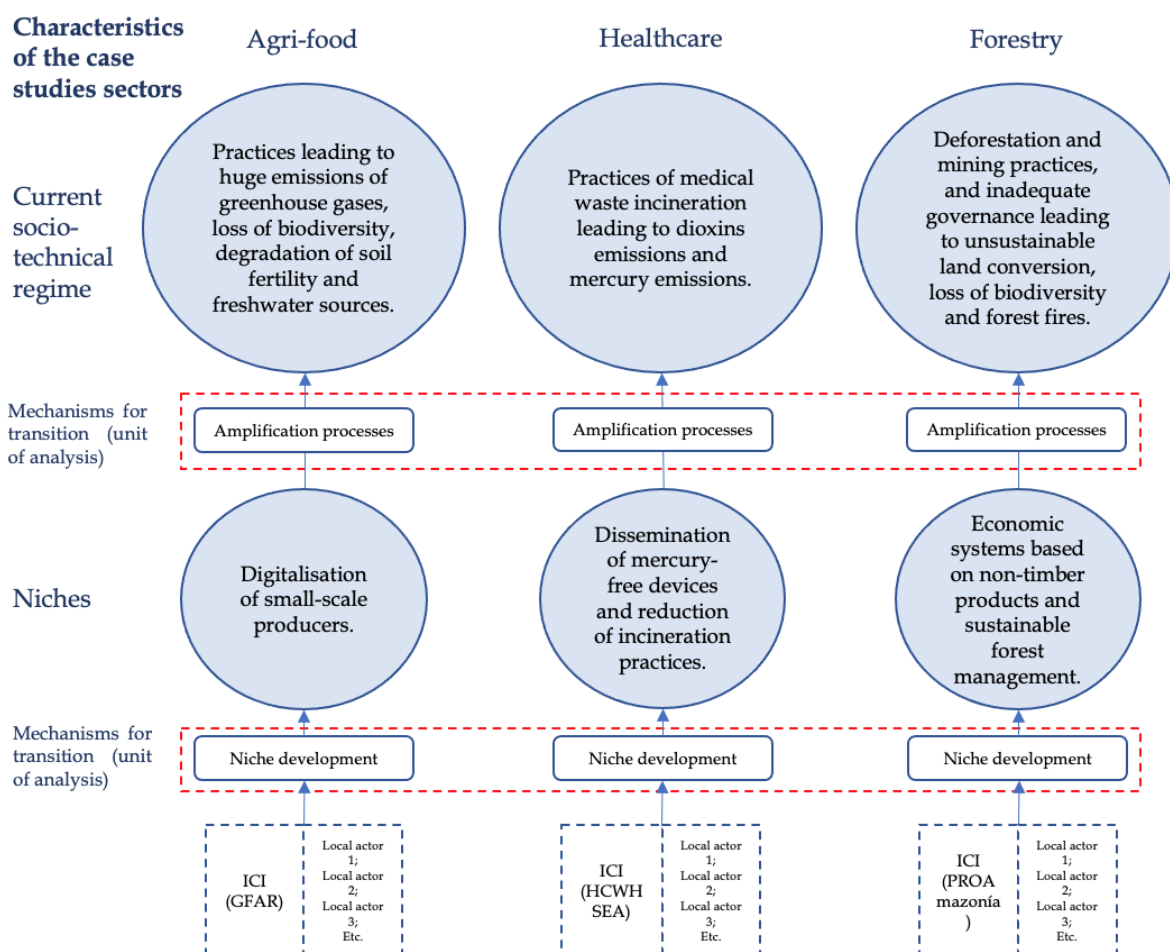


Figure 8 Characteristics of the case study context

### 3.1.3.2. Semi-structured interviews

For the collection of data through semi-structured interviews, this research project used a hierarchical approach, i.e., the cases were first treated individually and only then were the questions discussed to allow for a comparative study (Verschuren & Doorewaard, 2010). The questions posed to the interviewee were firstly elaborated with a tailor-made approach individual to the specific ICI. And secondly, in order to extract useful information for data comparison, questions were asked about the degree to which participation mechanisms are present and the forms in which they are applied locally<sup>5</sup>.

	Organisation/ affiliation	Type	Date
Interview 1	Global Forum for Agricultural Research & Innovation	International Cooperative Initiative	15-7-2022
Interview 2	Access Agriculture	Non-governmental organisation	12-7-2022
Interview 3	AgBoost Tech Consultancy	Business (SME)	14-7-2022
Interview 4	Health Care Without Harm Southeast Asia	International Cooperative Initiative	24-8-2022
Interview 5	Health Care Without Harm Southeast Asia	International Cooperative Initiative	21-9-2022
Interview 6	Health Care Without Harm Southeast Asia	International Cooperative Initiative	21-9-2022
Interview 7	Buddhist Dalin Tzu Chi General Hospital	Hospital	14-9-2022
Interview 8	Pholosong Hospital	Hospital	30-9-2022
Interview 9	PROAmazonía	International Cooperative Initiative	14-9-2022
Interview 10	PROAmazonía	International Cooperative Initiative	14-9-2022
Interview 11	PROAmazonía	International Cooperative Initiative	14-9-2022
Interview 12	Universidad Técnica Particular de Loja	Education & research	17-10-2022

Figure 9 Interviewees and their organisations/affiliations

Two interview forms were developed, one for ICIs and one for ICI participants (questionnaires can be consulted in Appendix IV). The interview questions for the ICIs were divided into five sections. The first section, Introductory Questions, explored with the ICI spokespersons general information about the ICI and asked how important or not it was for the initiative to have a large number of participants. They were then asked what their strategy was to achieve a sustainable transition to low-carbon

<sup>5</sup> The interviews were carried out via Zoom and lasted 60 minutes. They were recorded with the participants’ permission and the consent forms are saved, together with the interview recordings, in a folder on the University of Utrecht’s OneDrive. This information is available for consultation upon request.

practices (if not applicable, other transitions were discussed). The next section, Questions on Participant Expectations, delved into what ICIs require and expect from their participants. The third section, Questions on Participant Engagement, asked and discussed how ICIs seek to incentivise the involvement of new local actors and how they seek to maintain the involvement of existing participants. Furthermore, we discussed which actors the ICIs target, whether the ICIs have a dedicated staff or division for the engagement of new and existing actors, what the goals are for attracting new participants and how to achieve these goals. The fourth section, Questions on Participant Enhancement, asked and discussed how ICIs intend to promote and support their participants. In addition, the fourth section asked whether ICIs coordinate their participants' activities and how they do so; what strategies are in place to provide these services and how ICIs intend to improve their services; and from a spokesperson's perspective, what the ICI where they work can do to improve the provision of services to their participants. The last section, Closing Questions, asked, from the subjective but professional perspective of the ICI spokesperson, how they think participants benefit from the partnership with the ICI, what types of local actors are most prominent within the ICI and which ones are missing, and finally, what are the most important things they have learnt from a management and governance perspective from working with the ICI.

The questionnaire developed for the ICI participants followed the same structure. However, questions were asked with an a posteriori approach, often asking for concrete examples. In addition, an attempt was made to validate or refute ICIs' statements through the participants' perceptions.

## 3.2. Data processing

### 3.2.1. Coding

The interview recordings were transcribed using the online software Otter.ai. The transcripts were then uploaded into NVivo document analysis software. Each transcript relating to an ICI, or an ICI participant formed a Case on NVivo. The codes created on NVivo for file coding were developed according to the incentive and enhancement methods that the interviewee emphasised during the interview. These were subsequently classified into the categories listed in Figure 5. Other important elements that characterised the interview or facilitated the discussion (e.g., barriers to participation; future perspectives on incentive and enhancement methods) formed further codes on NVivo<sup>6</sup>.

The results of the data processing phase through coding were compared between the ICIs and also between the results of the interviews with the spokespersons of the ICIs and their participants. Typical or divergent results were noted and formed the basis of the Discussion section.

## 3.3. Limitations

The methodology of this research has a number of limitations that must be acknowledged here. First, there is a limitation at the level of theoretical conception and application of the multi-level perspective on transition. Indeed, this framework is complex and studies that have used it before have had more time than this research has had. For instance, the literature describes socio-technological regimes as a set of 'dimensions' (see Annex I), such as markets and user preferences, industry, science,

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<sup>6</sup> The original NVivo file is saved in a OneDrive folder of the University of Utrecht and can be consulted upon request. The NVivo codes can be consulted in Appendix V, while the conclusions on the results can be found in the Results chapter of each case study.

politics, culture, technology. The detailed analysis of the dimensions considering the sectors selected for research has been simplified by analysing the overall context (see Figure 4). Moreover, traditionally, the framework has been applied to the analysis of socio-technological transitions in society in a retrospective manner (e.g., Geels, 2002). This strategy allows for a (quasi-)complete perspective of the events and elements that characterise a successful transition.

Moreover, the results of the survey came relatively late. None of the institutions involved had anticipated such a delay, which meant that the time for data analysis, case study selection and interviews was considerably reduced. During this delay, I was able to devote myself to the drafting of the final report and the in-depth study of the literature that formed the conceptual design. Furthermore, the pressure of reduced and fixed time forced me to conduct 1-hour interviews, in which it was not possible to cover all the research material but only key and significant points for understanding real-life practices. These gaps were filled with the study of audio-visual material but neglected the perceptions of individuals which instead emerged during the interviews.

### 3.4. Ethical considerations

#### 3.4.1. Data validity & reliability

Data validity was ensured by following certain prerequisites stated in the research design literature (Yin, 1994; Merriam, 1998; Malterud, 2001; Verschuren & Doorewaard, 2010; Crowe et al., 2011; Yazan, 2015; Ebneyamini & Sadeghi Moghadam, 2018; Grix, 2019; Holmes, 2020). During all stages of the research, the four conditions for design quality were considered: *construct validity*, *internal validity*, *external validity* and *reliability* (Yin, 1994; Merriam, 1998). Construct validity was considered using multiple sources of evidence (Yin, 1994; Ebneyamini & Sadeghi Moghadam, 2018). For each case study, data collection was deepened using *triangulation of methods* (Verschuren & Doorewaard, 2010). That is, the research involved interviews with ICI spokespersons, interviews with ICI participants and a content analysis of textual and audio-visual material found online or received through personal correspondence with research participants. Furthermore, given the availability that HCWH SEA and PROAmazonía showed for interviews (three people per ICI), in their case data collection went even deeper by using *triangulation of sources*. The latter is a typical strategy of case study researchers involving multiple sources for a given case study (Verschuren & Doorewaard, 2010; Crowe et al., 2011; Ebneyamini & Sadeghi Moghaam, 2018). GFAR compensated by providing extensive textual material. Internal validity was considered using pattern matching and explanation construction when analysing the results (Yin, 1994; Merriam, 1998; Ebneyamini & Sadeghi Moghadam, 2018). Furthermore, it was ensured through peer review and explanation of the researcher's position in relation to the study (next section). External validity was considered using a holistic approach to research the mechanisms of ICIs to incentivise and enhance local actors (Yin, 1994; Merriam, 1998; Ebneyamini & Sadeghi Moghadam, 2018). The results are applicable to ICIs that intend to amplify sustainable transitions in terms of volume and impact regardless of sector or geographical area, and the use of the framework presented in this research is encouraged to be used in other case studies. Reliability was considered firstly by following research protocols outlined in the literature cited in this chapter, and secondly by building a database of all data collected during the research (Yin, 1994; Ebneyamini & Sadeghi Moghadam, 2018).

### 3.4.2. Researcher positionality

Through a process of self-reflexivity, I reflected on my positionality in the research process, which is disclosed here to ensure the validity of the study, as I recognise that the researchers' worldview and position towards a research task and its social and political context can influence all aspects and stages of a research process (Foote & Bartell, 2011; Holmes, 2020). Malterud (2001) and Grix (2019) invite to reflect on positionality with respect to the object of study (i.e., personal positions that may have influenced the research), positionality with respect to the research participants (insider-outsider debate), and positionality with respect to the research context and process.

Regarding the former aspect, it is important to consider that my worldview, which originated in my studies of international relations and economics and matured through my studies of sustainable development and systems thinking, leads me to believe that, on the one hand, local communities have the skills and knowledge to manage their own natural resources, as they are the first to use them (see Ostrom, 1990). Subsequently, I am led to believe regulation on the use of these resources should be done at the local level, and not by central authorities who have no direct interaction and knowledge with the resources. On the other hand, I believe that significant changes in society occur through a combination of multiple factors and events that are driven by institutional rather than market actors. These beliefs, which motivated me to study the phenomenon of ICIs and their interactions with local communities, may have influenced theoretical design and data analysis in favour of a romanticised harmony between these two actors.

Furthermore, it is important to note that I conducted this research from the Netherlands and then Germany and never visited the geographical areas discussed in this research. The contextualisation of discussions and anecdotes is based on interviews with people living in these areas and related studies. In relation to the research participants, I see my positionality as being an outsider to their culture (i.e., independent of culturally specific terminology or references). However, in terms of using terminology that is meaningful to and from the perspective of the people I interviewed (particularly the ICI spokespersons) in relation to the subject of study and the topics covered, I could consider myself an insider (we rarely had to clarify what we meant when we talked about governance for sustainability, the role of local communities and institutions). Therefore, on the one hand, not having a strong cultural background close to the countries studied, my position may have caused me to leave out important elements in the analysis of the results and the design of the research (e.g., the design of the interview questionnaire). On the other, I had no difficulty in detaching myself from cultural influences that might have affected the participants' subject matter in order to study it without bias (Kusow, 2003). Moreover, possessing an a priori knowledge of the subject matter, I was still able to ask meaningful and insightful questions.

I acknowledge that no matter how critical my reflective process may be, I can never objectively describe something as it is. Reality cannot be described objectively (Dubois, 2001). Therefore, I recognise that no matter how critical I may be, there will always be some form of bias or subjectivity. However, through reflexivity, I strive to become aware of areas where I may have potential biases and, over time, be better able to identify them in order to take them into consideration (Ormston et al., 2013). Finally, I want to disclose that during the processes of this research I have tried to maintain an empathetic neutrality to avoid obvious, conscious, or systematic bias and to be both as neutral as possible in the

collection, interpretation and presentation of data, and to do justice to the words of the research participants<sup>7</sup>.

## 4. Results

### 4.1. Requirements for participation

Survey results sent to ICI focal points show that the requirements for joining an ICI are varied. Only a few repetitive patterns were found. As we can see from Figure 10, 35 ICIs (out of a total of 44 responding to the question) stated that their participants are required to make their knowledge available to other participants. Similarly, 33 ICIs state that participants are required to sign an official declaration stating that they will work towards achieving the goals and objectives of the ICIs in which they participate. Furthermore, 32 ICIs state that participants are required to periodically report the progress of their work to the ICI in which they participate. Finally, 25 ICIs state that their participants are required to attend regular meetings. A brief description of other ‘General Participation Criteria’ provided by the ICIs in the survey can be found in Appendix III.

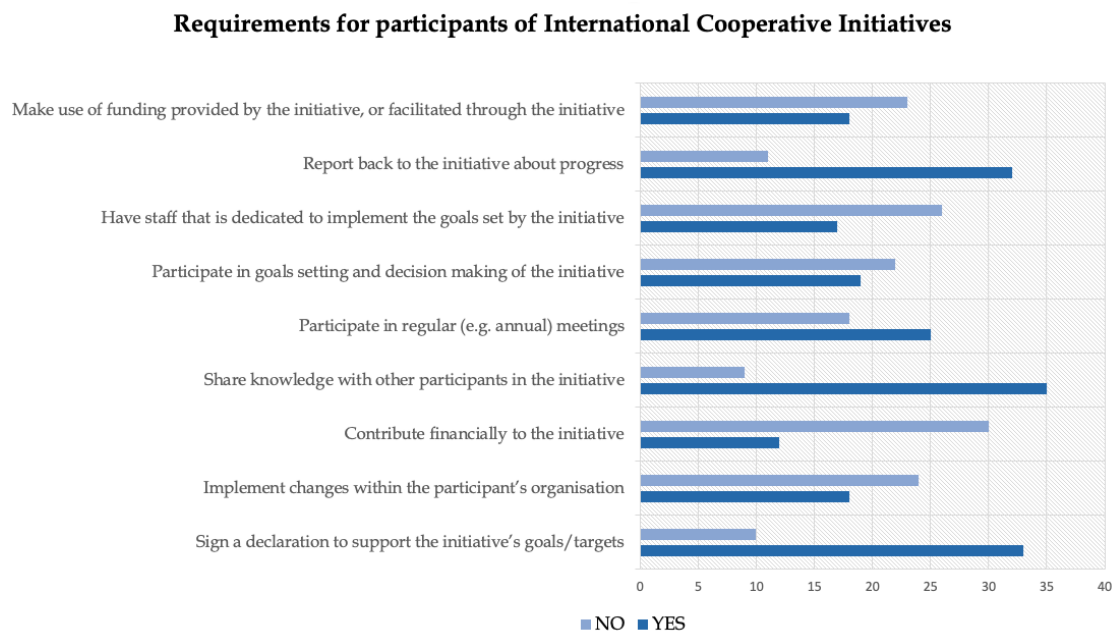


Figure 10 Requirements for participants of ICIs – Annual ICI Data Collection Survey (2022).

As we saw in chapter 2.3.2. on transition theory, in order for niches to emerge and influence the socio-technological regime in which they operate, it is crucial that they are aligned in their knowledge, their ways of doing things, their technologies and their narratives (Geels, 2011). From a study of the participation requirements of ICIs, we can deduce that ICIs play an important role in aligning visions, goals, and narratives (by requiring their participants to sign collective action statements), in correcting and monitoring them (by requiring periodic progress reports from participants), and in sharing

<sup>7</sup> Nevertheless, I recognise that this aspiration can never be fully achieved, as all research will be influenced by the researcher and it is not possible to be completely ‘neutral’ or ‘objective’ in the creation of knowledge (Ormston et al., 2013).



knowledge and resources (by requiring this effort from their participants and organising periodic meetings to exchange information). As the results show, most ICIs are already trying to fulfil this role, but as discussed in chapter 3.1.3.2, the survey results are not sufficient (response ratio 7.63%) to generalise assumptions.

Furthermore, the survey results (Appendix II) reveal little about the importance of the number of participants for the achievement of the ICI objectives. A future analysis of these data by sector might be beneficial in this regard. Results providing more detailed data on the growth of ICIs in terms of number of participants from 2015 to 2022 are available in Appendix II.

In the following sections, through the study of selected case studies, we take a closer look at the strategies used by ICIs to incentivise and enhance participants operating at the local level.

## 4.2. Global Forum on Agricultural Research & Innovation (GFAR)

### 4.2.1. Setting the stage

#### 4.2.1.1. Contextual specifications: regime & sustainable niches

The sector in which GFAR operates, agriculture and food production (in short, agri-food), along with others, is a major contributor to greenhouse gas emissions and other environmental problems on a global scale (IPCC, 2022b, p. 12). In terms of CO<sub>2</sub> emission reduction or equivalent, the agricultural sector represents the second largest share of the agriculture, forestry, and other land use (AFOLU) sector in terms of mitigation potential (IPCC, 2022b, p. 108). For example, in addition to climate change due to the huge emission of greenhouse gases, we find the loss of biodiversity, the degradation of soil fertility and freshwater sources (Foley et al., 2011; Hermans et al., 2016). The socio-technological regime of the agri-food sector therefore needs sustainable solutions to reduce its negative impacts on the environment, but at the same time continue (and increase) the supply of sufficient food and improve local conditions in rural areas (Odegard & van der Voet, 2014). Foley et al. (2011) argue that the main problems related to the unsustainability of the current agri-food regime are the expansion without any regulatory control of agricultural land (when crops and pastures expand into new areas, replacing natural ecosystems), the intensification of this productive land (often through the use of irrigation, fertilisers, biocides and mechanisation) and the consequent lack of attention to the efficiency of different crops that can close 'yield gaps' on less performing land. Other problems are the lack of attention to world diets and wastage.

GFAR's mission is to contribute to the necessary transitions by implementing global climate action to digitalise the sector towards climate-smart technology, especially small-scale producers. The innovation of this solution lies in its intentions. Until recently, in fact, if agricultural paradigms did not take into account environmental consequences to improve production, environmental conservation strategies did not take into account food production needs (DeFries et al., 2004; Reid et al., 2005; Foley et al., 2011). Hence, one choice was at the expense of the other. According to GFAR, climate-smart agricultural technology (henceforth, "digital agriculture" – to use the term GFAR uses to refer to these technologies) contributes to a number of sustainable goals. For example, both increasing agricultural production and adapting to and mitigating the effects of climate change, promoting more efficient use of natural resources, reducing risks and improving the resilience of agriculture, and making agri-food value chains more efficient (IPCC, 2022a, p. 108; GFAR, 2022c). However, to date, digital agriculture is

still only developing evenly in niches in advantaged contexts, in the richer countries of Europe and the United States, mainly in large-scale production and research projects (GFAR, 2022c). While in less advantaged contexts and at smaller production scales, digital solutions are used to a lesser degree or not at all (GFAR, 2022c). This is worrying because in order to achieve the necessary global goals, smallholder farmers are key actors that would increase the scale of development to achieve sufficient transition.

GFAR's project focus on small-scale producers and the amplification of niches that master digital solutions. GFAR wants to help the agricultural transition by developing business models that digitalise small-scale farmers and make them more open to new practices. Therefore, GFAR, in collaboration with its members, intends to promote agricultural technology and infrastructure, as well as policies and support for best practices, so that these are designed together with smallholder farmers to be context-specific and suitable both for increasing their income and for adapting and mitigating environmental problems.

#### *4.2.1.2. ICI background information & governance structure*

The Global Forum on Agricultural Research and Innovation (GFAR) is a global initiative based at the Food and Agriculture Organisation of the United Nations (FAO) in Rome. In 1996, FAO, International Fund for Agricultural Development (IFAD), the World Bank, and the Consultative Group on International Agricultural Research (CGIAR) jointly established the GFAR to strengthen cooperation between the National Agricultural Research Systems (NARS) and CGIAR system. In 2003, a memorandum of understanding between IFAD and FAO formally established the GFAR Secretariat. The initiative is a global multi-stakeholder forum which, through Collective Actions, aims to enhance research and innovation systems with small-scale producers as key actors in the transition of agri-food systems (Khetarpal & Lingnau, 2022). GFAR has been given a broad mandate to "mobilise all actors involved in agricultural research for development and support their efforts to alleviate poverty, increase food security and promote more sustainable use of natural resources" (GFAR, 2022b). GFAR's mission is to make agri-food research and innovation systems more inclusive, participatory and accountable to spur the agri-food sector to be more inclusive, efficient and resilient and towards achieving a sustainable transition (GFAR, 2022a). Specifically, the areas GFAR targets are food and nutrition security, sustainable agricultural intensification, and poverty reduction, while preserving environmental resources.

Their governance structure includes representatives of international institutions, regional forums (called Regional Fora) of national research organisations, international networks and grassroots organisations representing small-scale producers. The Rome Secretariat provides support to the Assembly of Partners, the Steering Committee and the GFAR partners. Working together, partners and members of the initiative operating at national, regional, and international levels pool their resources to create a greater impact that can achieve the necessary sectoral transitions. The Secretariat is composed of the Executive Secretary of GFAR, senior officials/consultants responsible for specific operational areas, and administrative and technical staff.



4.2.1.3. Key findings

GFAR – Key findings		
Participants	<b>&gt;600</b>	
Incentives dynamics	<b>Outscaling</b>	The ICI disseminates programmes, products, ideas and technologies via online campaigns and workshops to influence more actors to use them in their practices. Also, through word of mouth among members, the ICI receives voluntary registrations.
Enhancement dynamics	<b>Partnering</b>	The ICI established Collective Actions, such as partnerships in which members shares resources and knowledge to collaborate towards a common goal.
	<b>Embedding</b>	The ICI, through a multi-level governance system, including Members’ Assembly, Regional Fora and a Steering Committee, incorporate and align knowledge and narratives coming from the niches.
	<b>Instrumentalising</b>	Local actors exploit and capitalise on the opportunities offered by the GFAR network that enables communication through a multi-level and transnational structure.
Main benefits (and lacks thereof) for participants		
Interview with GFAR	Access to the global and regional knowledge platforms; advice offered by GFAR experts; funding opportunities; recognition and visibility of small-scale producers and other organisations.	
Interview with local actors	Lack: Limited possibility of contact between ICI members; limited ability of ICI to provide fundings.	Benefit: Possibility to access knowledge and information online; possibility to access ‘best practices’ published online; increased visibility given by GFAR member databases available online.
Barriers to participation and future outlooks		
Barriers	Limited human resources; limited functionality and effectiveness of the online platform.	
Future outlooks	The ICI is working on the development of an online platform for members structured in ‘knowledge and learning hubs’. The expectation is to increase communication between members, encourage self-governance of member groups and foster the sharing of resources.	

Figure 11 GFAR - Key Findings

GFAR is an initiative with a long history and an intricate network of established actors. **The ICI consists of over 600 members and 13 constituencies.** The initiative makes a clear distinction between two types of participants: members and partners. GFAR members are all small-scale producers and other organisations that have joined the initiative and are part of it sharing its purpose, vision, and mission. While the term partner refers to those organisations, including small-scale producers, with which the initiative is interested in having formal agreements, with a high level of commitment to the ICI-led Collective Actions. “[Partners involved in Collective Actions are] primarily multi-stakeholder organisations that are part of agricultural innovation systems, with a mandate that overlaps with or complements that of GFAR, or actors that can implement some of the work of GFAR, but also funding bodies and facilitating agencies” (GFAR, 2022b). Therefore, members are considered partners when they begin to actively and formally collaborate with each other and with the GFAR, joining efforts in Collective Actions. In a nutshell, Collective Actions are the ICI’s main tool to incentivise commitment to sustainable transitions based on shared values and visions among ICI participants. This is further explained in the following paragraphs.

#### 4.2.2. Incentivising new participations

At the moment, the ICI is working on how to consolidate and strengthen the current members and “about 150 new applications” are being evaluated (Interview 1). The testimony of the ICI spokesperson and the analysed documents show that GFAR implements a strategy to disseminate programmes, products, or ideas to involve more actors and areas (Interview 1; GFAR, 2022b; 2022c). These incentive practices are referred to as **outscaling** (Hermans et al., 2016). GFAR focuses on means (technologies, narratives, products, etc.) as well as the users who use them. The narrative and values promoted by the ICI are ‘inclusiveness’ (GFAR, 2022c). The ICI intends to include (by means of representation) as many farmers (especially small producers) as possible in the identification and design of digital solutions, so that they are incentivised to use them. An analysis of the documents explaining the objectives of the Collective Action for the digitalisation of agriculture shows that the technologies referred to by GFAR include all the solutions that in the Global North would be considered as simple technologies, for example, the computer, the smartphone, or basic mobile phones. But also, more complex devices such as geo-locators, tablets, and drones. Also included is the availability of internet connection, to allow access to online social platforms, e.g. WhatsApp, electronic mail (e-mail), meeting platforms (Zoom or similar), social media (Facebook, YouTube, Instagram, etc.), internet search engine, cloud storage, banks, municipal or government applications, telephone messaging, agriculture-related applications (GFAR et al., 2022)<sup>8</sup>. After the adoption phase of the means by local actors to digitalise agriculture, the ICI aims to promote new actors to use and apply these means. This strategy is typical of agricultural development and the term outscaling appeared in the literature on rural development in the 1990s (Millar & Connell, 2010). Since then, the concept has been associated with the goals of sharing and incorporating sustainable agricultural practices and standards to raise awareness and benefit as many people as possible (Scoones & Thompson, 1994; Pretty et al., 2003).

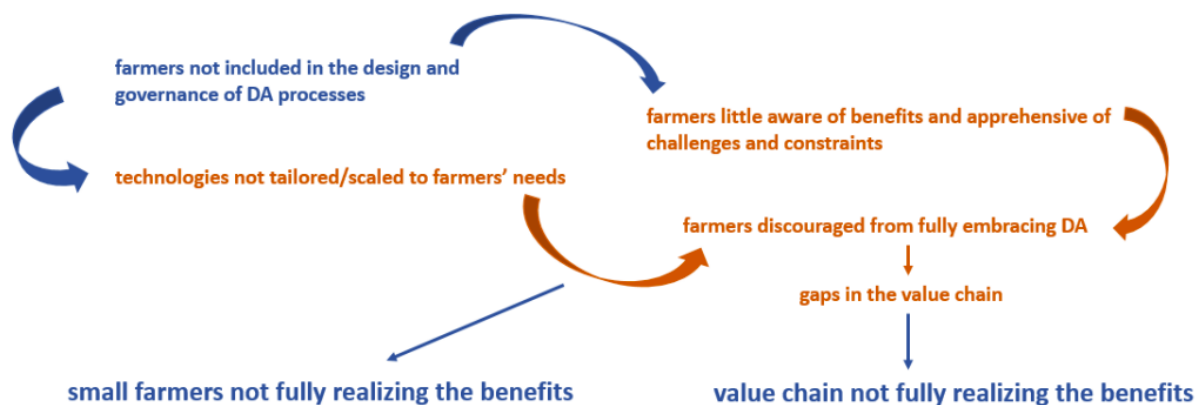


Figure 12 GFAR's perception of the limits of technology deployment (from GFAR, 2022c).

<sup>8</sup> Research by the Global Association of Mobile Systems (GSMA) shows that 24 million people in Latin America do not have access to mobile telephony, and almost all of them are inhabitants of rural areas (GSMA, 2020). Furthermore, even if the region has Internet coverage, more than half of the population does not have a mobile Internet subscription, and again most are concentrated in rural areas (GSMA, 2020). For a more in-depth overview of trends in the use of these technologies in the Global South, see Annex II.

The way in which GFAR ultimately increases its participants includes voluntary registration: *“Whenever someone approaches us, either through the website, where you can click on a button and say ‘I am interested in becoming a member’, or by writing an e-mail, we are happy to welcome new members”* (Interview 1). The interviewee mentions that there have been recent online efforts, prompted by the COVID-19 pandemic, to encourage new local actors to participate collectively in the initiative: *“We did a webinar together with the Swiss Academy of Sciences and International Science for development. So, we hope to bring together a critical number of actors to [realise new partnerships]”* (Interview 1). Furthermore, the interviewee also mentions that a major project is underway to restructure the web platform for members of the initiative. This project aims to attract new contributors, to mobilise existing ones in their research practices and in their connection with other members, and to boost the outputs generated by members by expanding their visibility. This topic is discussed in more detail in the chapter 4.2.6.

#### 4.2.3. Enhancement of existing participants

GFAR’s participants engage in climate action through Collective Actions. This is a partnership mechanism in which several members agree to collaborate, engage, and generate resources to work together in complementary roles towards a sustainable transition to benefit groups most vulnerable to the consequences of climate change in agri-food systems (Khetarpal & Lingnau, 2022). These mechanisms aim at the **construction of social networks** and the creation of synergies through the integration, pooling, and deployment of resources, skills, and capabilities to sustain and ensure the perpetual and effective diffusion of ways of thinking, doing, and organising that arise from niches. These practices are referred to as **partnering** (Gorissen et al., 2018). Collective Actions are initiated and co-created by three or more members, which always include small-scale producers and focus on women and youth (GFAR, 2022b; Meschinelli et al., 2022). Collective Actions address an issue or demand or need that is recognised and selected together with initiative participants (or rather, their representatives - as explained below) that cannot be addressed by one organisation alone and that has an impact on the inclusive and equitable transformation of agri-food systems. Collective Action partners must directly incorporate the agenda and commit their efforts and resources (Interview 1).

GFAR participants are included in the governance structure of the ICI by means of representation. Participants are part of both the Members’ Assembly and the constituencies. The aim of the former is to define priorities for the Collective Actions, which are then approved by the Steering Committee. The representatives of the constituencies, on the other hand, form ‘Regional Fora’ that participate by representing their members in the Steering Committee (GFAR, 2022b). This multi-level method of participation and representation is applied to implement and incorporate strategies and knowledge through representative forums. In this way, the GFAR is able to **articulate expectations and visions** and align the innovations and practices of local actors into the regional schemes that dominate the socio-technical regime of the agri-food sector (Interview 1). This strategy of enhancing efforts from niches is referred to as **embedding** (Gorissen et al., 2018). In the case of the Collective Action aimed at empowering local actors through the digitalisation of agriculture, the strategy adopted by GFAR includes: a) surveys for the assessment of farmers’ needs/concerns; b) multi-stakeholder consultations for the co-design of fair business models for farmers and for digital transformation; c) capacity building tools and events; d) inputs for the launch of pilot implementations; e) policy support (GFAR, 2022c).

Moreover, given the opportunities offered by the transnational, and multi-level, context in which GFAR network operates, local actors can leverage and capitalise on (i.e., **instrumentalise**) resources and knowledge to strengthen innovations at the local level (Gorissen et al., 2018). Similarly, the GFAR

can develop **multi-dimensional learning processes**, resulting in local campaigns and regional and **international lobbying**. Furthermore, GFAR employees themselves work to develop best practice case studies to be published on their online platform accessible to members. The case studies are developed based on the successes of the Collective Actions (Interview 1). Regional Fora are the ICI's preferred channel for engaging national and local actors and vice versa (GFAR, 2022b). The Regional Fora have a special role in co-management efforts, together with the Secretariat, aimed at decentralisation and local impact. Regarding direct contact with the participants in the initiative, the interviewee recounts that the GFAR used to go on 'missions' to visit its members to establish trust and loyalty, but since the pandemic broke out, contacts and meetings take place online: *"Since I joined the GFAR, we have not done missions to any of our members, and no one has come here because we also have a very strict policy on COVID-19. From what I heard, the previous GFAR CEO was always flying. This is no longer the case. Most of the meetings take place online"* (Interview 1).

#### 4.2.4. Benefits of participation according to ICI

This section presents the benefits of the partnership, instrumentalisation and embedding practices implemented by the ICI as explored through the research and as discussed with the GFAR spokesperson. The next section presents the results of interviews with GFAR participants in which the perceived benefits were discussed.

**Among the benefits discussed with the GFAR spokesperson were access to the global and regional knowledge platform, advice offered by GFAR experts, funding opportunities, recognition of small-scale producers and other organisations, and increased regional and global visibility** (Interview 1). The online platform GFAR provides for its members is filled with research and guidelines co-created with its partners and made available to all members. Through networking at local, national, regional, and global levels, GFAR promotes dialogue between all stakeholders in agricultural research and rural development. This transnational and multi-level governance structure, typical of ICIs, supports stakeholder learning and co-creation of innovations by mobilising knowledge from different sources for research and innovation systems. In turn, research and innovation results better connected, more inclusive and strengthened, thus ensuring widespread access to knowledge and the use of systemic, sustainable, and context-specific solutions. Actors at the local level benefit from mutual learning and have a say in the collective identification of challenges and the definition of solutions to be implemented for the sustainable transition of the sector. The GFAR spokesperson discussed two further points, giving practical examples of how participants of the initiative benefit from partnering with the ICI.

The spokesperson described how GFAR has initiated two new Collective Actions in 2022 that will bring widespread scientific and technical advice and support to local actors in their transition to digital agriculture. One concerns 'Transformative Learning' and the other 'Family Farming' (Khetarpal & Lingnau, 2022). In the first case, the GFAR aims to incorporate teachings that can provide young people with the necessary skills to engage in the digital transition. On the other, GFAR aims to rebalance global land ownership gaps by empowering smallholder farmers through digitalisation and awareness-raising. In September 2022, GFAR participated in the first global consultation on land rights and the importance of this for climate change adaptation, because most people do not own the land they work. As a result, there is no incentive to work on it in a sustainable way. GFAR is sensitive to the fact that *"70 or 80 per cent of the world's farms have access to about 10 per cent of the land, while 1 per cent of large farmers own the remaining majority."* (Interview 1).

Moreover, GFAR, even though it has limited financial resources at its disposal, with which it nonetheless supports the initial stages of Collective Actions, works as a facilitator between funders and innovators of agri-food niches. *“Last week, I was contacted by a large philanthropy in the United States. They wanted to show that it is possible [to contribute financially to small-scale producers] without going through the big systems that take forever before reaching the real small-scale producer and being able to support them”* (Interview 1). The philanthropic organisation chose GFAR to identify the beneficiaries of the funds. GFAR identified *“nominators, who would then nominate the candidates so that it is not [GFAR] who decides who will receive funding from this foundation. But it is the people in our network who identify the people to be supported”* (Interview 1). These funds are intended for emerging start-ups or young or female researchers. *“This is exactly the role we are playing, but as I said, not with our own money, but I am happy to bring them the money that [GFAR] can get.”* (Interview 1).

#### 4.2.5. Benefits (& lacks thereof) perceived by local actors

The participants interviewed are a small NGO and a small business based in Nairobi, Kenya, and Noida, India. The NGO called Access Agriculture works to improve rural livelihoods and sustainable food systems in the Global South through capacity building and South-South exchange of farmer-to-farmer training videos in local languages. In addition, the NGO promotes agro-ecological principles and rural entrepreneurship. AgBoost Tech Consultancy, on the other hand, is a hi-tech consulting company that promotes automated solutions to track, monitor and manage crop growth. While the former NGO has been a GFAR Collective Action partner for over 10 years, the tech-consultancy firm only joined two years ago.

The interview with Agboost reveals that for one member, who is not yet a formally involved partner in a Collective Action, the platform provided by GFAR to connect with other participants is not so useful. Since the company aims to offer advice to small producers, the spokesperson believes that connecting with other actors is crucial (especially through an institution that spreads similar visions and missions, such as GFAR). But the ICI platform proved to be limited in the perception of the interviewee. On the other hand, the company feels it has benefited from the knowledge and information available for access online (Interview 3). The company believes that sharing information and learning about sustainable transition best-practices in the agricultural sector is beneficial for both GFAR and local actors. Finally, the company has high expectations of what it can learn from the information disclosed by GFAR and those shared by its members.

Access Agriculture recounts that during its long association with GFAR, not only did they never receive funds from ICI, but witnessed ICI's inability to provide funding in general. On the other hand, Access Agriculture expressed recognition in the benefit that the GFAR portal has brought to the NGO to connect to other actors. The NGO spokesperson recounted how in the past, users of the GFAR platform have learned about the NGO activities in the areas of land enrichment, water management in agricultural systems, and measures to overcome flooding (Interview 2). Since online visibility for the NGO is an important element in increasing its work and attracting new users, as the interviewee says, Access Agriculture was able to take advantage of this (Interview 2). Furthermore, during the several years of partnership with GFAR, the interviewee tells how the NGO was able to share and receive knowledge and information from other GFAR members. One example is the importance of developing resources and knowledge in the local language (the NGO creates films on agricultural practices with local people in the local language). GFAR promoted the NGO's resources and incorporated the need to



communicate in the local language. The NGO took part in the meetings GFAR held at regional level and during the interview echoes the importance of networking.

#### 4.2.6. Barriers to participation & future outlooks

Among the barriers to participation discussed with the GFAR spokesperson are the limited human resources of the initiative, in terms of staff dedicated to engagement and project activities, and the limited functionality and effectiveness of the online platform to connect members (Interview 1).

Regarding the first point, GFAR highlights the fact that ICIs are often incorporated by international organisations or state agencies that dedicate part-time staff and scarce resources, with high expectations on the contribution and self-governance their members can bring. This approach, certainly aimed at decentralising governance, can undermine the effectiveness of ICIs' role in uniting and guiding local niches and actors towards impactful outcomes. GFAR intends to tackle the two problems jointly. The spokesperson talks about how there are high expectations for the ongoing 'online hub platforms' project. "What we call knowledge and learning hubs are dedicated platforms where we will not only have, as we do now, a database of members, but we want it to be a platform with many hubs, so that we have different ways of communicating in the regions or in collective action or in our own constituency" (Interview 1). These hubs resemble a cascade strategy, whereby, on the one hand, members can communicate and find each other more easily by searching by topic area, project, or geographic area and, on the other hand, they encourage self-governance of more manageable groups of members in terms of numbers. In particular, through these platforms, members will be able to share their work, interests and visions with a global community and join with others to address what concerns them, offering a network that goes far beyond access to organisations, reaching vertically and horizontally across the globe. It also encourages the involvement of all agricultural actors at all levels through inclusive demand-driven partnerships, enhanced multi-stakeholder collective actions and national/local projects within existing collective actions through innovation initiatives.

### 4.3. Health Care Without Harm Southeast Asia (HCWH SEA)

#### 4.3.1. Setting the stage

##### 4.3.1.1. Contextual specifications: regime & sustainable niches

Healthcare systems, the focus of HCWH, are important sources of greenhouse gas emissions, waste, pollution, and energy consumption. Combined net GHG emissions from the healthcare sector account for 4.4% of total annual emissions, which means that if the global healthcare sector were a country, it would be the fifth largest climate polluter (Mortimer & Pencheon, 2022). Among the main problems, or 'hot spots', related to CO<sub>2</sub> emissions and equivalents and other sustainability issues of the current healthcare regime are pollution from incinerated materials and chemicals, supply chain items (such as pharmaceuticals and medical equipment), certain anaesthetic gases, and patient or staff travel (NHS, 2020). In addition, healthcare systems contribute to plastic pollution and air pollution (Mortimer & Pencheon, 2022). Although the full extent of the climate impacts of the healthcare sector are not known, emerging evidence confirms their importance and the need for transition strategies (Watts et al., 2015). To cite some striking examples, the National Health Service (NHS) in the United Kingdom (UK) has a carbon footprint of over 18 million tonnes of CO<sub>2</sub> or equivalent per year, accounting for 25% of total public sector emissions (NHS, 2009). Furthermore, in 2018, the UK NHS purchased around 163 million plastic cups (Public Health England, 2014). While in the USA, healthcare systems' GHG

emissions increased by 6% from 2010 to 2018, accounting for 8% of the country's total GHG emissions (EPA, 2011). Research states that the healthcare sector, having some of the largest sectoral purchasing power globally, could significantly reduce its impact through the purchase of low environmental impact products and investment in its infrastructure (i.e., hospitals, outpatient services and clinics) (Watts et al., 2015). As research reports, much of the health system's climate impact is due to clinical care itself (EPA, 2011; Watts et al., 2015). This sector creates a significant demand for buildings, transport and catering, equipment, and pharmaceuticals. Therefore, by applying the principles of sustainable healthcare (i.e., prevention, patient empowerment and self-care, and low-carbon alternatives), providers in this sector can contribute significantly to the sustainable transition (Watts et al., 2015). Solutions to be implemented for the sustainable transition include the use of non-polluting materials, e.g., mercury-free devices; training of healthcare personnel; and improving the design of social care facilities to make them more climate-sensitive, e.g., increasing green infrastructure (Mortimer, 2010; WHO, 2021). This also entails mitigation effects to reduce air pollutants, which in turn reduce the health and environmental consequences of air quality.

Among the causes for which HCWH is committed to contributing to the sustainable transition of the industry, this research considers the abandonment of the use of mercury. Although the discussions with the ICIs participants were not limited to this topic, they included other energy efficiency and procurements solutions. The use of mercury is very common in the current health sector regime (Karlner, 2010). Mercury is one of the most widespread neurotoxic heavy metals in the world. The negative effects caused by mercury pollution, especially through its incineration, have been identified as a major global environmental and human health problem (WHO, 2021). Mercury, in its non-natural form, such as emissions from health care systems, is transported in the atmosphere over long distances, undergoes chemical changes in the atmosphere and can bioaccumulate in food chains and reach people through fish consumption (WHO, 2021). Reducing the use and accumulation of mercury in the health sector is a global priority identified by the UNEP Governing Council (UNEP, 2007). Since mercury has been widely used in the health sector since ancient times, the transition is not a foregone conclusion. Indeed, mercury has been a key element in the development of many medical devices, especially thermometers and blood pressure devices (sphygmomanometers) (Karlner, 2010). The paradox of mercury use is evident: health institutions and health professionals, who should care for and promote the health of society, have contributed to a significant environmental problem that may affect the entire world through the use of medical devices on a global scale.

In response to growing awareness of the health implications of mercury exposure, the transition in wealthier countries in Europe and the United States has been gradual over the past decade (Harvie & Karlner, 2008). Unfortunately, despite these efforts, mercury-based medical devices are still used in less advantaged settings, especially in the global South (WHO, 2021). Under the auspices of the WHO-HCWH Global Initiative to Replace Mercury-Based Medical Devices and with the support of HCWH regional offices, several developing countries have initiated a transition that favours sustainable niche practices that provide mercury-free healthcare (WHO, 2021). Due to social and scientific pressure from niches in the Global South, the technical and economic feasibility of alternatives has gained momentum in the last decade (Karlner, 2010). In particular, the health ministries of Argentina and the Philippines have issued national policies to phase out mercury-based medical devices (Karlner, 2010).

#### 4.3.1.2. ICI background information & governance structure

Health Care Without Harm Southeast Asia (HCWH SEA) is the largest regional branch of the international organisation Health Care Without Harm with regional offices in Brussels, Manila, and

Washington, DC. HCWH SEA has a strong network of hundreds of members. The headquarters, based in Manila, Philippines, manages all regional programmes and projects including those of the Association of Southeast Asian Nations (ASEAN) countries. In addition, HCWH SEA also works with Taiwan, South Korea, and Japan, and since there is no regional office in Africa, the same team also works with African countries. The initiative aims to be at the centre of the global health sector transition and to achieve ambitious goals without compromising safety and patient care. In 1996, 28 organisations came together in Bolinas, California, to form the Health Care Without Harm coalition. This initiative was created in response to the serious threat identified by the US Environmental Protection Agency, namely the incineration of medical waste as a major source of dioxins, one of the most potent carcinogens (Ahlborg et al., 1994). Subsequently, in 2003, HCWH SEA gained momentum by obtaining a mandate to steer the transition away from medical waste incineration practices by committing to improving health systems in the region. To date, the initiative has become a key network in the health sector with representatives from various frontlines.

Members of the initiative include hospitals and health systems, medical professionals, community groups, health constituencies, trade unions, environmental health organisations and religious groups. Among the greatest successes of HCWH SEA is the Philippine Measles Eradication Campaign (PMEC) in 2004, during which it was demonstrated that it was possible to conduct a large immunisation campaign without incinerating the resulting waste. Another success was the campaign that addressed the problem of mercury in medical and scientific equipment in 2006. The initiative organised the first mercury conference in Southeast Asia. The conference, together with a historic mercury-related incident at St Andrew's School in Manila (Calanog, 2022; Interview 5), strengthened public opinion towards this toxic substance and led to a transition away from the intensive use of mercury in health centres. HCWH's mission is "to transform health care worldwide so that it reduces its environmental footprint, becomes a community anchor for sustainability and a leader in the global health and environmental justice movement" (HCWH, 2022).

The HCWH SEA works through research and innovation, identifying and testing opportunities for health care to implement innovative, cost-effective, and science-based solutions to environmental health problems. In particular, the ICI focuses on capacity building at the local level, creating implementation tools, education and training for health workers and developing solutions in their networks, in the health sector and in the communities where they work. Furthermore, the initiative focuses on targeted policy and market change, i.e., it strives to unite the influence and buying power of hospitals, health systems, health professionals and organisations to drive the market towards sustainability and advocate for policies that create change worldwide.



4.3.1.3. Key findings

HCWH Southeast Asia – Key findings		
Participants	250 ca.	
Incentives dynamics	<b>Upscaling</b>	The ICI aims to increase membership in order to disseminate ICI’s methods and beliefs for a sustainable transition. Practices to do this include showcasing the best practices of other members in on-site workshops and word-of-mouth of members leading to voluntary memberships.
Enhancement dynamics	<b>Partnering</b>	The ICI forms partnerships with its members to implement sustainable transition projects. The ICI supports organisations and individuals at all stages of the project, from obtaining funding, emission calculations and environmental footprint analysis to the development of an action plan and its implementation.
	<b>Instrumentalising</b>	ICI actors can instrumentalise their membership thanks to the multi-level structure of the ICI and the platforms provided, such as GGHH Connect, Google Mail Group and other medias.
	<b>Replication</b>	The ICI showcases its members’ best practices by sharing them in their online platforms, and by bringing case studies to online and on-site workshops that the ICI holds.
Main benefits (and lacks thereof) for participants		
Interview with HCWH SEA	Access to resources such as funding, human resources allocated by the ICI; awareness raising and knowledge sharing via online platforms; advice and policy development from ICI experts.	
Interview with local actors	Lack: In-person relationships with the ICI representative; lack of funds; ad-hoc trainings to achieve ICI’s goals; limited user-friendly platforms to connect and share with others.	Benefit: Local actors perceive that they benefit from the expertise of other ICI members via GGHH Connect and beyond platforms; from the resources made available by the ICI, such as consultancy; from the knowledge shared by the ICI via online platforms and on-site workshops.
Barriers to participation and future outlooks		
Barriers	Lack of personnel at regional level; language problems with local actors; limited budget; limited participation of public and private actors with high regional influence.	
Future outlooks	The ICI is in the process of formulating a financial plan that will enable it to recruit more staff at regional level who can mediate culturally and linguistically with local actors; the ICI is seeking to develop partnerships with public and private actors with high regional influence (e.g., in the field of public procurement); the ICI is developing key sustainability performance indicators to be incorporated into the objectives of all local actors.	

Figure 13 HCWH SEA - Key findings

HCWH SEA attracts different types of local actors that we can divide into two macro-categories: hospitals and health systems (defined here as organisations) and health workers or health professionals (defined here as individuals). Actors in these two categories engage in collective climate action through two separate programmes initiated by HCWH. Among these programmes, HCWH SEA has about 250 members. The first programme is the Global Green and Healthy Hospital (GGHH), established by HCWH, which has formed an extensive network of organisations. Its network is managed in Manila (Philippines). The GGHH is an international network of hospitals, health facilities, health systems and health organisations dedicated to reducing their environmental footprint and promoting public and environmental health (GGHH, 2022a). For individual participation, HCWH established the RISE - Southeast Asia Alliance for Health and the Climate. RISE’s main objectives and strategies include awareness and capacity building, strengthening and dissemination of resilient practices, decarbonisation of health care and expansion of research, campaigning, and policy advocacy (HCWH, 2020). Speaking of the role of local actors in climate action, the interviewee comments: “We believe that health workers are trusted communicators and advocates who will be effective in driving change forward”

(Interview 6). RISE actors come from a health care background, whether they work in health care facilities or in public and private health, but also from academia, such as researchers, medical students and other advocates who are not exclusively concerned with health, but who want to work on climate and health.

Through these two instruments, HCWH SEA is committed to the **construction of social networks**. The results on the description of ICI participants show that HCWH SEA, unlike GFAR, differentiates its members qualitatively and not on the basis of ties (i.e., 'members' and 'partners'). This characteristic does not seem to have any influence on actors' engagement in ICI activities, at least on the basis of online communication and engagement, as we will see in the next section. On the contrary, having fewer participants than GFAR, the spokesperson perceives fewer passive actors than in the previous ICI.

#### 4.3.2. Incentivising new participations

HCWH SEA has several strategies to stimulate collective climate action and attract new members to the initiative. Targets for achieving a sustainable transition, including switching to mercury-free devices, and reducing incineration practices, are defined by the ICI and imposed top-down on participants. Whereas the way to achieve them requires a co-creation approach, often bottom-up. HCWH pursues **upscaling** strategies, i.e., to increase the number of members, supporters and users of the practices designed for a sustainable transition by the ICI in order to spread methods and beliefs (Gorissen et al., 2018). The interview reveals that the main channel to engage with new participants is **on-site workshops**. The ICI organises on-site workshops with strategically selected existing participants (those who can leverage their influence in the local area or who have achieved remarkable results) to raise awareness of the environmental consequences of mercury use and incineration practices. During the workshops, ICI shows examples of good practice, presenting how a hospital system - or, in smaller settings, a health professional - has undertaken structural change to adopt mercury-free tools and avoid environmentally harmful practices. With these on-site activities, the spokesperson states, *"we meet our potential members"* (Interview 4). Another method that works for HCWH SEA is word of mouth. *"Our members usually recommend our network to their colleagues in other hospital systems"* (Interview 4).

HCWH SEA is an ICI with a long history and has proven its effectiveness in the field of sustainability, but word of mouth that works could not happen if existing members were not truly satisfied with the services, goals, and visions the initiative offers and shares. This reputation resulted in HCWH SEA receiving many voluntary partnership registrations. Through voluntary registration, the initiative is able to gather a considerable number of participants: *"We have a registration form that we circulate online when [participants] want to sign up sign the letter of commitment and identify the goal they want to achieve [among those we list]"* (Interview 4). **Another important channel to reach local actors used by HCWH SEA are digital campaigns.** *"We are very active on social media,"* says the interviewee (Interview 4). **The interviewee adds that there are many individuals or organisations in the regional area that are interested in undertaking sustainable positive change, and since the initiative is one of the few that helps local actors to make this transition, they are able to attract a considerable number of participants through online campaigns** (Interview 4, 6).

#### 4.3.3. Enhancement of existing participants

**To contribute to a sustainable transition out of mercury use and incineration practices, HCWH SEA supports organisations and individuals at all stages of the transition, starting with obtaining funding,**

emission calculations and environmental footprint analysis, designing an action plan and implementing projects. These **partnering** strategies were discussed during the interviews with ICI spokespersons. The interview reveals that although the ICI does not provide direct funding, they assist their members and put them in contact with other organisations or institutions to receive funds. Due to their limited capacity, the spokesperson states that they favour quality over quantity when it comes to partnerships. *"We make sure that members or those seeking to join are really committed to at least two sustainability goals"* (Interview 6). However, the interviewee adds that they are exploring new ways to include more participants because they feel it is necessary to have more climate advocates within the initiative. *"We want to make sure that these leaders, these advocates, can actually affect change, that they are interested in spending time and effort to learn more about building their capacity to campaign, advocate and achieve goals"* (Interview 4).

Furthermore, ICI actors are able to **instrumentalise** their membership due to the multi-level structure that ICI has, and due to the platforms provided. HCWH SEA has a multi-level governance structure to interact with its participants and for them to interact in turn, where knowledge and information flows, benefiting local actors. As we saw in the previous paragraph, at the global level, members can come together through the GGHH programme. While at the local level, members can interact via the RISE programme. The global GGHH network requires the commitment of leaders of participating hospitals or health systems. Organisations must commit to climate action by committing to at least two of the goals set by HCWH to become sustainable. The HCWH agenda is structured around the following objectives: replace harmful chemicals with safer alternatives; reduce, treat and safely dispose of medical waste; implement energy efficiency and clean, renewable energy production; reduce water consumption in hospitals and provide clean water improve transportation strategies for patients and staff; purchase and serve healthy and sustainable food; manage and safely dispose of pharmaceuticals; support the design and construction of green and healthy hospitals; and purchase safer and more sustainable products and materials (HCWH, 2022). In addition, the GGHH offers a service called GGHH Connect, a platform that all health organisations can use. There is a discussion forum that they can access and participate in. Participants can access guidance documents, discuss, and ask questions that other members can answer.

When members achieve their goals locally, HCWH, through GGHH Connect, but also through workshops, seminars, and online publications, encourages **replication** of sustainable initiatives. GGHH Connect presents case studies of members from all over the world. Participants can access them, learn from them, and share their own case studies through this platform. As for individuals, HCWH SEA offers a closed Google Mail group where participants can share their initiatives, knowledge, and experiences. In addition to the group on Google, the ICI provides thematic groups on WhatsApp. In this way, individuals can share ideas, resources, knowledge, or events. For individuals, HCWH SEA also organises virtual 'coffee meetings' where preliminary ideas in the early stages of a project can be discussed. In addition, HCWH organises quarterly regional meetings for health workers and, at least once a year, a regional meeting with all health workers in the Philippines. Through these platforms and events, HCWH SEA has the opportunity to **articulate expectations and visions** in order to align them in a dominant design, which is flexible (i.e., can be replicated in other areas) and dynamic (i.e., can consider new innovations and new challenges to be addressed). After the restrictions caused by the impact of COVID-19, these meetings are mostly virtual, and discussions are organised by the health systems. Before COVID-19, biannual conferences were also held in Manila. The interviewee reports that an on-site meeting with health facilities and health systems will be held in Manila in 2023, the first one after COVID-19.

#### 4.3.4. Benefits of participation according to ICI

This section presents the benefits of the partnership, instrumentalisation and replication practices implemented by the ICI, as explored by the research, and discussed with the HCWH SEA spokesperson. The next section presents the results of interviews with HCWH SEA participants in which the perceived benefits were discussed.

The interviews reveal that ICI participants can improve their institutional capacity by capitalising on the opportunities offered by HCWH SEA. For example, by obtaining funding to complete a project or by using the human resources provided by the initiative to implement change in a hospital system. Over the past year, HCWH SEA has supported a South African health system in transitioning LED lights to illuminate their buildings. *“Although we did not directly provide the hospital, and their network of members, with the funds to do so, we facilitated third party funding and provided them with the capacity to actually switch to LED lighting”* (Interview 6). The ICI facilitates partnerships and collaborations with third parties when its members can favour them in resources or capacities. *“Since HCWH is unable to provide financial support internally, we play the role of facilitators through partnerships and participation in projects”* (Interview 4). The spokesperson argues that *“not only does [HCWH SEA] produce tools, but we actually provide capacity building support, and we also support our members through awareness raising and knowledge sharing”* (Interview 6). Members can access capacity-building resources and tools, advice on policy development and adoption in structures, networking, and key partnerships. Another benefit of instrumentalising the opportunities of HCWH SEA network is the visibility that local actors can exploit, through the social media and online platform channels mentioned in the previous section. Finally, another way in which participants benefit from membership in the ICI is through the counselling and training workshops that the ICI organises periodically. In addition to providing counselling and training in early or even embryonic stages (when the project has not even been planned), the ICI, in their members' hospitals, provides support during implementation through continuous capacity building.

#### 4.3.5. Benefits (& lacks thereof) perceived by local actors

HCWH SEA participants who took part in the interview are the Buddhist Dalin Tzu Chi General Hospital, located in the city of Hualien in Taiwan, and the Pholosong Hospital, located in Tsakane in the Gauteng region of South Africa. Both are part of the GGHH programme and have implemented changes within their systems to facilitate a sustainable transition. While the former has been a member of the ICI for 12 years, the latter has been a member for 20 years.

The results show that apart from via online communication platforms, e.g., GGHH Connect, (which work well to disseminate information and knowledge and to catalyse momentum and willingness to address the changes required by the transition), participants perceive a lack of relationship with the ICI (which is important for maintaining relationships and feeling part of a collective action). Furthermore, neither of the two interviewed members reports having received significant funding from the ICI to complete transition projects. Only Pholosong Hospital reports that they received a budget to launch a catering service when the hospital organised workshops and an awareness-raising campaign for the local community. Other shortcomings reported by both interviewed parties are ad hoc training to complement the ICI guidelines, more user-friendly platforms to communicate and share material with other members.

Dalin Tzu Chi General Hospital expresses some difficulties related to the limited use of the local language. Although the interviewee states that HCWH SEA *“does its best”* (Interview 7), it should be



noted that an influential ICI operating in different territories together with local actors should provide services and advice in the mother tongue, involving professionals from the territory. Furthermore, although the HCWH SEA guidelines are clear, the interviewee states, each country has different situations. The hospital did not find the specifics relevant to their case on the HCWH SEA transition frameworks. On this front, however, the verification of the perspectives and their adaptation by the GGHH experts was a key element in achieving their objectives.

The spokesperson goes on to describe the benefits of belonging to the GGHH network: “[Through the GGHH] we can get in touch with other like-minded colleagues in the field of health and healthcare” (Interview 7). The hospital has significantly reduced the incineration of hospital waste by following the framework provided by GGHH professionals and has achieved significant results in the elimination of mercury, although it has yet to complete the transition to the use of 100 per cent mercury-free devices. Another example of how the hospital has been able to instrumentalise ICI resources is that the hospital used the knowledge developed in the GGHH to implement a grey water recycling system (i.e., relatively clean wastewater from toilets, sinks, kitchen, and appliances) in two piping systems that allow the hospital to reuse grey water for a total of 30% of the total water used (Interview 7). Furthermore, the hospital tells how tools and software to monitor the carbon footprint and environmental impact of hospital processes have helped to raise awareness among hospital operators and managers. Finally, the interview reveals that the downloadable information, resources, and case studies published by HCWH SEA on its website are a significant advantage for the hospital, which can check its own progress and solutions against the advances and innovations of other professionals in the field, in order to be constantly inspired.

The interview with Pholosong Hospital in South Africa reveals that the lack of personal relationships with the ICI, due to the fact that the HCWH SEA regional offices are limited and not present in the vicinity of all members, has been a major difficulty for the hospital in learning how to transition. Furthermore, the hospital spokesperson recounts how funding that had been discussed with ICI at an early stage of the project was never finalised.

On the other hand, the hospital was inspired by the visions and missions of HCWH SEA from the first meeting. In this case, the interview reveals that the local actor in question was not fully aware of the environmental problems that the health sector (globally) was encountering. The South African hospital spokesperson enthusiastically recounts the first meeting with the ICI: “it was great, and that motivated us as an institution to make a change in our system” (Interview 8). Subsequently, the hospital used the momentum generated by participating in sustainability workshops on household waste recycling and the environmental damage caused by incineration. Pholosong participated in the implementation and sharing of some awareness-raising campaigns on its own territory together with other hospitals that joined the initiative. The spokesperson emphasises the economic benefit this transition has brought: “We have decreased the amount we pay to the municipality for waste” (Interview 8). Furthermore, the hospital, by developing a home garden in which both hospital officials and patients work, was able to solve the problems of non-delivery of vegetables for the main kitchen, where they cook for the patients. “This vegetable garden helps us when we have problems with the supply of vegetables for our kitchen” (Interview 8). This latest project, the hospital garden, was an initiative inspired by other stories from other hospital systems that are part of the GGHH. The spokesperson says that they managed to equip members of their community with gardening skills and that those who work in this garden also receive a certain incentive because they can sell the surplus to the rest of the community. “We have benefited because we have empowered our community financially and in terms of skills. And it also helped our occupational

therapy department, which deals with rehabilitation patients and had a shortage of activities for in-patients. They took their patients to the garden for physical activity” (Interview 8). Furthermore, the Pholosong spokesperson relates that through the online platform connecting the ICI members, they were able to share their results and be inspired by other case studies.

#### 4.3.6. Barriers to participation & future outlooks

The interview results revealed that the barriers to participation faced by the ICI are the lack of personnel at the regional level, language problems (related to the first problem) and a limited budget to fund local transition projects. Furthermore, it was discussed how the ICI can have a broader impact at the regional level for a sustainable transition and how it can better incentivise local actors. The lack of partnerships with public or private actors in the procurement of large systems and the lack of policy frameworks that include sustainability goals in the key performance indicators of all individuals and systems in the health sector emerged.

The HCWH SEA spokesperson points out that language and the presence of a local player in the area where members operate is one of the biggest obstacles to the participation and engagement of actors in collective action. “We do not have sufficient funds to hire someone at the regional level who is actually able to help the professionals. We need a person separate from the climate and health programme management to take care of this involvement and provide all the guidance and supervision on the mission of this alliance” (Interview 4). Regional focal points serve to break down not only linguistic but also cultural problems (Scharpf, 1997; Sattler et al., 2016; Iannuzzi et al., 2020; Lam et al., 2020b). The interviewee recounts how in his experience he noticed that, for instance, in the Philippines, Singapore and Malaysia an effective communication approach has to be individual, face-to-face with members to enable a bottom-up approach and arrive at solutions through the co-creation of knowledge. While in Indonesia and Taiwan members tend to follow a leader who shares guidelines in a top-down manner, the ICI found that in these territories the guidelines shared by the Manila headquarters were more consensually adhered to. While in the other countries mentioned “ad hoc approaches have to be adopted and members cannot be treated equally” (Interview 4). The ICI is working on a financial plan that would allow the regional expansion of the initiative and ensure more direct and ad hoc contact with its members.

Concerning the impact on the territory and the incentive for climate commitment by local actors, interesting points emerged from the interview. On a global, regional, and local level, public or private actors involved in the procurement of large systems have great influence. The interviewee (Interview 5) argues that if there were a global procurement policy that did not allow the purchase of unsustainable instruments, such as mercury-based instruments, the entire health sector would purchase mercury-free instruments. Future perspectives of the ICI will work on this front. ICI aims to attract suppliers who prefer clean and sustainable procurement and to attract actors who can influence local, national, and global policies on this front. The interviewee states that they would like to see health ministers in their network, which is currently lacking, and are therefore working to encourage their participation.

Furthermore, to provide more meaningful incentives for action by local actors, the HCWH SEA aims to develop policies that incorporate sustainability goals into the key performance indicators of all individuals and systems in the health sector. “Sustainability is more easily achieved when it is embedded in people’s work. If sustainability is part of a person’s key performance indicators, it means that they will constantly work towards this goal because they want to do their job well. But these indicators must also meet the requirements of their work” (Interview 5). Whether it is an individual or whether it is a hospital at the local level, a province, or a national system, HCWH SEA believes that as ICI they can help incorporate sustainability



indicators into the work of individuals in the sector, to make everyone accountable. “When we say we want the health sector to reduce its GHG emissions, to develop tools and metrics to measure its footprint, and to understand which areas of the health system are the most problematic, unless there is an indicator that mandates someone who has oversight to reduce emissions in each of these national areas, we will never see true sustainability or true implementation of its full potential, because it will always rely on someone’s goodwill” (Interview 5). Therefore, the ICI is committed to deconstructing this ‘abstract’ requirement left to the will of individuals by developing, together with regional professional actors, measurable tools such as key performance indicators in which there is a personal responsibility.

#### 4.4. PROAmazonía

##### 4.4.1. Setting the stage

###### 4.4.1.1. Contextual specifications: regime & sustainable niches

In terms of CO<sub>2</sub> emission reduction or equivalent, the forestry sector represents the largest share of the AFOLU sector in terms of mitigation potential (IPCC, 2022b, p. 108). Simulation models show that, with the practices included in current regimes, especially deforestation, production, and agriculture, the Amazon, PROAmazonía’s area of interest, is approaching its breaking point (Amigo, 2020). For instance, Marin et al. (2022) calculate that, with the current regime, in 15 years another worrying area of the Amazon, some 5.7 megahectares of forest and savannah (mainly near Brazil), will be converted to make way for agricultural soya production, releasing 1,955 megatonne CO<sub>2</sub>e into the atmosphere and a loss of biodiversity and carbon sink. It is estimated that soon the Amazon will no longer be able to generate its own rainfall and thus no longer be able to sustain its ecosystems (Nobre et al., 2016; Amazon Conservation, 2022). According to Amazon Conservation, the NGO working to conserve the biodiversity of the Amazon basin since 1999, the main problems in the socio-technological regime that governs the Amazon can be summarised the following points. The uncontrolled expansion of ranching and unsustainable agricultural practices that eradicate forests and make areas more prone to fires that can quickly become uncontrolled. In 2019 alone, more than 20 million hectares of the Amazon were devastated by fires (Amazon Conservation, 2022). The Amazon experienced massive land conversion for agriculture many decades ago (1970s-1990s), and today only a minor part of the native vegetation remains (Marin et al., 2022). Illegal, informal gold mining causes not only direct deforestation and mercury contamination, but also significant ecological and social impacts. Illegal logging outside designated areas and the selective cutting of high-value tree species that weakens interconnected rainforest ecosystems. Data show that between 1990 and 2000, average gross annual deforestation was 129,943 hectares per year, while in the period 2000-2008 it was 108,666 hectares per year (FAO, 2020). Inadequate decision-making on critical issues due to lack of proper natural resource management and governance and lack of law enforcement to curb illegal activities. Mitigation measures include protection, improved management, and restoration of forests to sequester significant tonnes of CO<sub>2</sub> and equivalent per year (IPCC, 2022b, p. 108).

PROAmazonía aims to break out of the standing regime with a transition in the agricultural and forestry sectors of the Amazon region that establishes more sustainable management and production practices. The initiative aims for a “transition to sustainable land-use practices to significantly reduce deforestation and restore degraded ecosystems, improve the livelihoods of some of Ecuador’s most impoverished communities, and establish viable economic markets for sustainably produced and deforestation-free products” (UNEP, 2019). PROAmazonía aims to achieve its goals through the

conservation and restoration of forests that are themselves a natural solution to environmental problems (PROAmazonía, 2019). One of ICI's main interventions is to enhance niches based on economic systems that are not based on timber products. Indeed, in addition to timber, the Amazonia can provide products such as seeds, fruits, plants, oils, fibres, and fungi, which can be used sustainably for medicinal, food, cosmetic and cultural purposes (PROAmazonía, 2019). In this way, the initiative's interventions would help decrease deforestation and conserve ecosystems to restore degraded forest systems. PROAmazonía aims to enable agricultural and forestry transition with economic purposes as well by supporting "local entrepreneurial efforts to sustainably develop non-timber forest products, thereby increasing the economic value of forests, maintaining ecosystem function and diversifying income sources for local communities" (PROAmazonía, 2019).

#### 4.4.1.2. ICI background information & governance structure

PROAmazonía is a Quito (Ecuador) based initiative promoted by the Ministry of Environment, Water and Ecological Transition (MAATE), and Ministry of Agriculture and Livestock (MAG), implemented with the support of the United Nations Development Programme (UNDP). The initiative aims to link efforts to reduce greenhouse gas emissions with the priority agendas and policies of the productive sectors to reduce the causes and agents of deforestation. The geographical area of interest of the ICI encompasses the entire Amazon area; however, being relatively young, the ICI is currently mainly concentrated in Ecuador. Here, the ICI aims to promote sustainable and integrated management of natural resources, within the framework of Ecuador's REDD+ (The United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation) Action Plan 'Forests for a Good Life' 2016-2025. Furthermore, the ICI, by promoting integrated natural resource management, aims to contribute to poverty eradication and sustainable human development.

In 2017, PROAmazonía started its activities as an initiative led by the implementing partners: the MAATE, the MAG, and the UNDP, who form the Steering Committee. In the first-year agreements are signed with water funds (FONAPA, FONAG and FORAGUA), these water funds conserve watersheds with a REDD+ approach (PROAmazonía, 2022). In 2018, agreements were signed with new partners such as: the Commonwealth of the Dry Forest (Municipalities of Celica, Pindal, Puyango, Zapotillo, Macará, Paltas), and the Confederation of Indigenous Nationalities of the Ecuadorian Amazon (CONFENIAE). The former seeks to understand management as a responsible integral approach from a territorial vision with new management models for the solution of their problems and to enhance their strengths and common interests. The latter is a regional indigenous organisation representing about 1500 communities, belonging to the Amazonian nationalities, Kichwa, Shuar, Achuar, Waorani, Sapara, Andwa, Shiwiar, Cofan, Siona, Siekopai and Kijus. CONFENIAE seeks to improve the quality of life of indigenous communities through the strengthening of affiliated organisations, the promotion of community development programmes, community defence of the environment and natural resources (PROAmazonía, 2022). In 2019, the Programme begins to work with the UN Women organisation dedicated to promoting gender equality and women's empowerment to reduce gender gaps.

PROAmazonía initiative consists of three programmes whose main objective is to reduce deforestation in order to reduce CO<sub>2</sub>e emissions in the country. The programmes are being implemented and progress is being made in each of the programme components and indicators. The first programme involves policy and institutionalisation, i.e., it focuses on enabling policies through the main spatial planning instruments at the level of local governments, communities, indigenous peoples, and nationalities to reduce the factors that promote deforestation and associated emissions.

The second programme concerns the transition to sustainable agricultural systems: the implementation of fiscal and economic incentives in non-forest areas to support the transition to deforestation-free agricultural production systems, in coordination with the MAG. The last programme, coordinated by the MAATE, includes the conservation, restoration, and sustainable management of forests: implementation of financial and non-financial mechanisms for the restoration, conservation, and sustainable management of forests.

4.4.1.3. Key findings

PROAmazonía – Key findings		
Participants	25	
Incentives dynamics	<b>Growing</b>	The ICI strategically selects its members on the basis of their capacity to provide technical assistance for project implementation, as well as to provide co-financing, thus enabling the ICI's actions to grow in size or activity.
Enhancement dynamics	<b>Partnering</b>	The ICI works with local actors by establishing partnership processes to develop 'life plans' for local communities. The ICI's role is primarily that of a consultant. The ICI provides an overview of opportunities and resources that local actors can use to achieve their goals.
	<b>Instrumentalising</b>	The ICI has a strong public-private multi-level network, which includes the participation of public ministries; local actors can instrumentalise these partnerships to capitalise on the opportunities and resources made available for those undertaking sustainable development projects.
	<b>Embedding</b>	The ICI exploits social platforms (or roundtables) with its members, which occur on multiple levels, to incorporate the knowledge derived from niches into socio-technical structures.
	<b>Replication</b>	The ICI brings successful case studies to the different roundtables held at provincial and local level, thus encouraging replication to continue practices with other actors in different contexts.
Main benefits (and lacks thereof) for participants		
Interview with PROAmazonía	Capacity of local actors for autonomous replication of sustainable practices; socio-economic benefits; institutional capacity building through training and counselling; and resource mobilisation.	
Interview with local actors	Lack: Lack of support from ICI specialists in the field during and after the COVID-19 period.	Benefit: Consultancy and facilitation services with government agencies and other public agents in the area that ICI makes available; mobilisation of resources.
Barriers to participation and future outlooks		
Barriers	Long timescales to gain the trust of local and indigenous communities who live off forest products and services in the face of the timelines required by government agencies; difficulties brought about by the COVID-19 pandemic; limited participation of research and educational actors.	
Future outlooks	Creation of lasting partnerships with the research and educational sector, with the main aim of publishing scientific papers on the effectiveness of co-creation knowledge for natural resources management; the development of a label for sustainable products made from Amazonian forest resources.	

Figure 14 PROAmazonía - Key findings

PROAmazonía has a diverse engagement team. This team includes social safeguard specialists, indigenous people specialists, stakeholder engagement specialists, and finally, REDD+ agenda specialists. Together, they develop and implement strategies to ensure the involvement of stakeholders in PROAmazonía projects. The engagement team is also part of the steering committee that designs the guidelines to achieve the REDD+ programme’s goals. The ICI reported that it currently collaborates, or has collaborated, with 25 organisations (PROAmazonía, 2019). These include government agencies, local governments (i.e., Decentralised Autonomous Governments of the Amazon), research and

education centres, indigenous organisations, financial institutions, and private sector actors. The local actors targeted by PROAmazonía, and who should ultimately benefit are, indigenous peoples, local communities, local producers working in cocoa, coffee, livestock, and palm oil production. *“But we are also talking about people who live in or around the forest and who are in areas at risk of deforestation. These are the main beneficiaries of our projects”* (Interviewee 9).

The engagement team identify the organisations and local governments that are responsible for implementing the planned actions. The interviews reveal that PROAmazonía started to collaborate first with the Decentralised Autonomous Governments of the Amazon, and through them they built partnerships with the regional organisation, i.e., CONFENIAE, that coordinates the actions of 11 indigenous peoples and nationalities in Ecuador. **The ICI led the process that brought the Ecuadorian government to sign an agreement between the MAATE, the MAG and CONFENIAE, that formalise implementation and coordination of action in six provinces with indigenous peoples. With them, the ICI works to implement their projects.**

Talking about goals achieved and important aspects of the initiative, the spokesperson adds: *“The key and important aspect, or milestones that are part of these programmes, is the creation of awareness on climate change and the involvement of local actors who were already working in conservation strategies, trying to raise awareness on REDD+ opportunities and how to join forces with the MAATE and the government, and how important it is to achieve common goals and achieve better results and greater impact on the territory”* (Interview 9).

#### 4.4.2. Incentivising new participations

**The results of interviews with PROAmazonía spokespersons suggest that this ICI implements more strategic processes than the other ICIs analysed above to amplify and incentivise involvement in sustainable actions.** This choice is based on the conclusions of analyses and studies conducted by ICI partners in the Amazon area (MAE, 2016; Secretaría Técnica Planifica Ecuador, 2019). Research concludes that there are several factors that have an impact on deforestation, either because they contribute to forest degradation (replaced by grazing or cultivation) or because they directly encourage deforestation for agricultural production, especially in the Amazon region (Nobre et al., 2016). Therefore, **one of the criteria for the selection of participants used by the ICI is to assess the capacity of these partners to provide technical assistance for project implementation, as well as to provide co-financing (PROAmazonía, 2019).** These practices are referred to as **growing dynamics**. **These are dynamics that can foster continuation and replication through the participation of new actors taking part in the execution of the initiative, thus allowing the actions of the initiative to grow in size or activity (Naber et al., 2017).** The activities in which PROAmazonía is involved include sustainable production of cocoa, palm, coffee, and forest conservation, i.e., sustainable forest management, bio-enterprises, conservation, and restoration (PROAmazonía, 2022). Strategic partners may provide monetary and non-monetary contributions to complement and enhance the implementation of the measures and actions of the project plan. Another criterion that is considered is the geographical area of influence of the participants, in order to establish synergies and work together with partners operating in the same locations (PROAmazonía, 2019). Finally, the interviewee adds that, *“the experience and knowledge of the issues addressed by the project, as well as the operational capacity of these partners to carry out budgets and actions directly in the field are evaluated”* (Interviewee 11).

**Therefore, PROAmazonía approaches its participants for the construction of social networks in a strategic manner. Applicants can submit applications to PROAmazonía projects via various channels.**



Local governments mediate applications and take registrations of interest. The interviewee adds that calls are permanently open during the ICI's term and applicants are invited to submit proposals (Interviewee 10). Furthermore, to ensure that all stakeholders and potential applicants are reached, PROAmazonía organises on-site and online workshops. The workshops are aimed at creating awareness on gender and intercultural aspects in participatory spaces, and to disseminate and inform of emerging opportunities fostered by the ICI agenda.

#### 4.4.3. Enhancement of existing participants

PROAmazonía programmes are managed by a Steering Committee consisting of the highest authorities of the MAATE and the MAG and UNDP representatives. This Steering Committee is described by PROAmazonía spokesmen as the first roundtable at the top of other cascades. The roundtables are perceived as social platforms. PROAmazonía manages relations with its participants through these social platforms, as they call them. *"We have these social platforms of participation to actively engaged in the programme and the stakeholders. We have platforms for the development and processing of deliverables, but also platforms for spatial planning"* (Interviewee 9). These platforms take the form of recurring roundtables where stakeholders meet and discuss the fate of the project. These round tables take place on several levels, and they have the potential to establish **multi-dimensional learning processes**. As mentioned, at the top we find the general REDD+ roundtable held by the government, attended by the ministers mentioned, the ICI and representatives of the organisations involved. As a cascade, we find the involvement of regional and local actors.

One of the main objectives of the roundtables is to produce 'life plans'. These are proposals from the communities themselves that set out ideas to address not only the transition to sustainable practices to cope with climate change, but also socio-economic needs. These plans are first formed at local level, and then approved at regional and national levels. PROAmazonía works with local actors by setting up **partnering processes**. Partnering dynamics allow parties to complement each other's resources and knowledge (Gorissen et al., 2018). The interview results show that the ICI's role in the embryonic phase of projects is that of an advisor. The ICI provides an overview of opportunities and resources that actors at the local level can instrumentalise to achieve their socio-economic goals, which turn out to be win-win solutions for the surrounding environment. Through this multi-level public-private network, the ICI fosters **instrumentalisation** processes for local actors to capitalise on the opportunities and resources available to them (Gorissen et al., 2018). Later, when the project gets off the ground, the PROAmazonía spokesperson explains that the ICI assumes *"a partner role more than an advisor, because we are learning from them too"* (Interviewee 10). Starting from a top-down flow of information, where guidelines are passed on multi-level, and challenges and opportunities are presented, the flow takes on a bottom-up nature to work out potential solutions. In this way, **expectations and visions are articulated** vertically, while through stakeholder interactions in the Steering Committee and other social platforms, they are aligned horizontally. The ICI aims to embed the transferable knowledge generated from life plans, and the best practices to develop and share case studies to foster replication of sustainable initiatives that fit the socio-economic needs of local communities. Thus, we find an **embedding** process aimed at aligning and integrating existing knowledge with innovative findings from local actors (Gorissen et al., 2018). And in the last phase, we find a **replication** process in which the main concepts are transferred to other actors to continue the practices in other places and contexts (Naber et al., 2017).

Life plans consider the needs, structures, and knowledge for planning the future of communities and PROAmazonía projects. These documents elaborate on how to manage the land, how to achieve the goals set by the REDD+ programme, and how to achieve socio-economic objectives. A PROAmazonía spokesperson explains how *“sitting down and listening to people in the community who know the ecosystem better than [university graduate] engineers is a good experience from a participatory point of view to create a programme or project, a document that is presented to the MAATE with [local actors’] vision of how to manage the ecosystem”* (Interviewee 10).

#### 4.4.4. Benefits of participation according to ICI

This section presents the benefits of partnership, instrumentalisation, embedding and replication practices implemented by ICI, as explored by the research, and discussed with the PROAmazonía spokesperson. The next section presents the results of interviews with PROAmazonía participants in which perceived benefits were discussed.

Among the main benefits that the ICI brings to local actors, discussed with PROAmazonía spokespersons, are the replication capacity of sustainable practices that the initiative generates, socio-economic benefits, institutional capacity building through training and consultancy, and resource mobilisation. The results show that in 2019 PROAmazonía addressed gender gaps related to the management of Amazon areas by collaborating with the UN Women organisation, dedicated to promoting gender equality and women’s empowerment. In 2021, activities began with the Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), the Instituto Interamericano de Cooperación para la Agricultura (IICA) and the Asociación Nacional de Cultivadores de Palma Aceitera (ANCUPA) to establish sustainable agriculture schools. The ICI aims to create a sustainable and lasting impact by engaging local governments and persuading them to incorporate or add climate change action and attention strategies as part of their land-use plans to promote sustainable development capacity (Interviewee 11). In addition, initiatives for the sustainable marketing of coffee and cocoa have been initiated with the Unión de Organizaciones Campesinas Cacaoteras (UNOCACE), and with partners Altrópico and Hivos, with whom they are also working on restoration issues.

The PROAmazonía spokesperson adds that forest restoration, carried out in collaboration with local actors, aims to plant species that not only restore forest ecosystems, but also provide services to the community (Interviewee 10). *“In the restoration initiatives, it probably took us a year to understand the needs of these communities and to know which trees we needed to plant, which species are part of the forest ecosystems that were already part of them, but we also identified which species provide services to the community”* (Interviewee 10). In addition, PROAmazonía provided training and advisory services to local actors to inform them about the different processes they were implementing and how they could instrumentalise them. Interviews revealed that ICI had to conduct many workshops on site, visiting communities and showing them that everything they would do or plan to do with them would have a real benefit and impact on the community and its environment (Interviewee 9).

Finally, one of the spokespersons tells how local governments, thanks to ICI’s advice and training, were able to access funding programmes on their own. The spokesperson gives the example of a local government in the Amazon region of Pastaza, home to 7 indigenous nationalities, that collaborated with PROAmazonía to create a livelihood plan that obtained \$1.35 million in funding to implement an agroforestry scheme with limited impact on surrounding ecosystems and that has formed the basis of the alimentary systems of indigenous nations in the Amazon for millennia (Selibas, 2022). In addition, one of the spokespersons tells of other funds that local actors have received, directly from



PROAmazonía that pay for e.g., internet access that many communities living in or around the forest do not have (Interviewee 11).

#### 4.4.5. Benefits (& lacks thereof) perceived by local actors

Participating in the research interview was a professor and researcher from the Universidad Técnica Particular de Loja (UTPL). UTPL is an Ecuadorian university located in the southern city of Loja. The interviewee's ongoing research is aimed at supporting communities living in biodiversity hotspots in enhancing the resources and services of their environment (Interview 12). The challenges for these communities are many, says the interviewee. They are usually poor communities, which often do not own or manage the surrounding land. Moreover, the land is constantly changing due to climate change and deforestation practices. The aim is therefore to protect them and at the same time enhance them, so that they can lift themselves out of poverty (Interview 12).

UTPL joined PROAmazonía in 2018. The university and ICI came into contact through MAG, to which the university had presented a project for the conservation and development of a forest area. In this project, the university works with CONFENIA. Since 2018, PROAmazonía has taken on the role of facilitator between the funder, i.e., the ministry, and the university, which in turn works with the indigenous communities. The interview revealed that during and immediately after the COVID-19 pandemic, the ICI was not able to be physically present with representatives in the field. The interviewee's perception was that the ICI was severely limited by the pandemic and had difficulty organising itself to manage the ongoing projects, which were nevertheless managed by the UTPL. In the contexts in which PROAmazonía operates, direct contact with stakeholders is crucial to building trust between stakeholders and the project itself. In fact, UTPL never stopped going to the indigenous communities, even during the pandemic, and in such a situation, ICI did not measure up (Interview 12).

On the other hand, the UTPL spokesperson says that the collaboration with PROAmazonía has brought benefits such as advice and facilitation with government agencies and other public agents in the area. These benefits are achieved through processes of partnership and capitalising on ICI's resources and knowledge. As examples of practical actions, the interviewee recounts that PROAmazonía collaborated in the business development of non-timber products that indigenous communities started to produce thanks to the university's work (Interview 12). UTPL, together with the indigenous communities and a team of biologists, ecologists, industrial engineers, and chemists provided by the ICI, identified five products that the communities could produce. PROAmazonía was also involved in developing a marketing plan for the products and obtaining a sustainable, forest-friendly label under which to sell them. The interviewee adds that with some indigenous communities, UTPL and PROAmazonía are also involved in the installation of extraction plants to obtain non-timber products from the forest in a sustainable manner (Interview 12).

For these projects, a progress report must be submitted to MAG every six months in order to obtain the necessary funds. PROAmazonía facilitates this process. The interviewee emphasises that the link between them (UTPL) and the ministry is the greatest benefit that local actors like them can obtain. The paperwork for obtaining funds and sending projects to the government for approval is usually lengthy and fraught with bureaucratic hurdles. Finally, the interviewee says that PROAmazonía has not only helped projects carried out by the university or indigenous organisations by attracting government funds, but also by contributing ICI funds itself. The university is currently writing a scientific paper, to be delivered to PROAmazonía and published in scientific journals, on its achievements with indigenous

communities in the conservation and valorisation of forest resources. PROAmazonía will use this knowledge to replicate these actions in other areas with other local actors (Interview 11).

#### 4.4.6. Barriers for participation & future outlooks

Among the barriers to participation discussed with PROAmazonía, it emerged that a major obstacle that can be encountered is the lengthy time required to gain the trust of local and indigenous communities living off forest products and services. These timeframes, which are difficult to predict, have to meet other timeframes, usually requiring more expedition, imposed by government agencies. A PROAmazonía spokesperson recounts how it required two or three years to gain the trust of some communities, which, like them, had seen other initiatives pass by and ask for their cooperation for development projects (Interview 10). Moreover, even when trust is gained and communication exchanges begin, restoration projects for the forest take a long time and require a lot of ongoing and scientific research. The interview revealed that ICI spent more than a year together with local communities to determine the right species to plant that would provide restoration, services and not harm the surrounding species (Interview 9).

PROAmazonía also mentions the difficulties brought about by the COVID-19 pandemic and explains how indeed ICI had to undergo preventive measures and lockdowns, during which, *“we had to be very creative to keep the stakeholders engaged, obviously with all the complications that entails, but in any case, I think we managed to involve them in the implementation of the product, even during the pandemic”* (Interview 9).

Furthermore, a PROAmazonía spokesperson talks about how the research and educational sector needs to be more involved. The collaboration with UTPL proved so fruitful that the ICI is trying to involve other universities, but with great difficulty as they often lack their own funds and personnel to commit to PROAmazonía projects (Interview 10). In order to ensure that PROAmazonía vision and mission are replicated, even after the ICI's mandate runs out, PROAmazonía is trying to publish scientific data with UTPL. *“We are creating this relationship with universities because they work with local communities. But I think we need to start working on creating scientific knowledge. Also, as [the interviewer] said before, knowledge created by communities is important, but also showing that the impact we have as a programme has a scientific basis behind it is important”* (Interview 10).

Finally, PROAmazonía future outlooks to contribute to the restoration, conservation and enhancement of forest resources include the recognition of the sustainability label that the ICI is establishing together with other private partners (Interview 11). The label is aimed at promoting the marketing of non-timber forest products in Ecuador and the countries to which they export, in order to find new markets and raise awareness among customers to buy sustainable products.

## 5. Discussion

This study aims to contribute to the ongoing academic debate on the influence and role of ICIs involving international, national, regional, and local actors beyond national governments to achieve sustainable transitions. The results contribute to the debate by providing an empirical study on three sectors (agri-food, healthcare, and forest management), analysing how ICIs incentivise and enhance local actors in implementing solutions that lead to sustainable pathways. This approach represents a still relatively unexplored empirical area in the current literature. The analysis of the results shows that the potential of ICIs lies in their ability to create protected spaces for the development of niche innovations and in the mechanisms put in place to amplify the efforts of local actors to emerge and

**influence socio-technological regimes.** The discussion chapter firstly makes explicit the connections between the research findings outlined in the previous chapter and the questions posed at the opening of the study. Second, it presents the managerial implications of the findings based on the lessons learnt through the case study analysis. Thirdly, it discusses the scientific and societal relevance of this study, highlighting the applicative potential of the framework and methodologies used for future studies. Finally, it reflects on the limitations of the research and proposes ideas for further research.

### 5.1. Incentives & enhancements dynamics for sustainable transition

From the results presented above, it is possible, on the one hand, to identify the processes implemented by the ICIs of incentive and enhancement that are recurrent among the three case studies, and, on the other hand, the more creative and authentic processes. The following section outlines the similarities and differences that emerged.

#### 5.1.1. Governance structure

To discuss the results of the analysis of the empirical evidence presented in the previous chapter and their variations, it is important to consider the results in the broader perspective of the contexts in which ICIs operate and their structures. **The governance structures of the analysed ICIs are diverse, and this factor may have influenced the practices of the ICIs.** First, the three ICIs differ in terms of the actors that constitute governance, GFAR and PROAmazonía are led by UN offices (FAO and UNDP respectively) and benefit from the presence of other influential international or national actors (e.g., in GFAR, there are IFAD, World Bank, CGIAR, and for PROAmazonía, there are MAATE and MAG). HCWH SEA does not have these types of leading actors. The lack of actors in the political sphere at the international, national but also local (municipal) level, as discussed with the interviewee (Interview 4), **affects the ability of the ICI to create multi-dimensional learning processes.** Although the 'dimensions' of the MLP framework have not been analysed in detail (as explained in chapter 3.3.), **by considering this factor we can understand, for example, the limitations HCWH SEA encounters in influencing the political sphere of the regions in which it operates, and thus in bringing niche innovations in this sector (in many countries where HCWH SEA operates, there are no laws prohibiting the purchase and use of mercury-based products in the healthcare sector).**

Secondly, ICIs have a different multi-level structure. In GFAR and PROAmazonía, we find that **local actors do not participate directly in the governing bodies of ICIs but are represented by advocacy groups.** In GFAR, decision-making power is distributed between the regional forums, the partners' assembly, and the steering committee. Similarly, in PROAmazonía it is distributed between regional round tables with local stakeholders and a steering committee. Furthermore, we have seen that **PROAmazonía develops 'life plans' to align visions and expectations and include the voice of local stakeholders.** These operations are led by an engagement team that works closely with indigenous communities. HCWH SEA, on the other hand, is managed from a regional office in Manilla and has no other offices in the areas where it operates. ICI members can participate in governance through online programmes, one for global and one for local actors. In all three case studies, ICIs exploit their multi-level and transnational structure to engage and interact with their participants and develop social networks where niche actors can share, learn, and emerge. **Apart from the development of multi-dimensional learning processes, we find no significant consequences from the highlighted differences in the articulation of expectations and visions and the construction of social networks.**

### 5.1.2. Requirements for participation

Examining the results obtained on the requirements that local groups must fulfil in order to become members of an ICI (Figure 10), we note that there are no dominant standards. Combined with the fact that the number of participants observed in the responding ICIs varies widely (as shown in Appendix II), doubts remain as to the importance of local participation from the perspective of ICIs. These findings are worrisome, since transition theory emphasises the importance of the participation of local actors for the success of sustainable transitions (Forrest & Wiek, 2015; Lam et al., 2020a). In order to have a clearer idea in this respect, a more in-depth study by thematic areas is necessary.

However, what emerges from the results as a common pattern and is interesting for this research is that ICIs are trying to develop dominant designs among their participants. The survey results show that ICIs strive to articulate expectations and visions, incentivising their members to act along specific trajectories; in fact, participants are required to sign declarations of action to support ICIs' goals. Furthermore, we see that another common pattern is the promotion of cooperation and knowledge sharing, often through participation in recurring events organised by ICIs or through communication on (online) social platforms. As we saw in the conceptual framework, these are the most obvious ways to develop niches through the construction of social networks where participants can communicate and share knowledge and resources (de Haan & Rotmans, 2011; Geels, 2011). However, empirical evidence from the case studies shows that social interaction platforms are not sufficient to create adequate protected spaces in which local actors can emerge. The local actors interviewed expressed a certain degree of difficulty in undertaking the necessary transitions required by ICI, mainly due to the costs involved. In this regard, it is interesting to note from Figure 10 that more than half of the ICIs stated that their participants do not have to use funds. Empirical evidence confirmed that lack of funds is indeed a common theme among local actors. Transition theory explains how local actors should have the freedom to experiment and innovate unsustainable practices without the pressure of external constraints such as market competition or maintenance costs (Boyer, 2015). In this regard, the challenge of creating a budget for the creation of protected spaces in contexts of competing priorities remains an urgent issue that needs to be addressed through the involvement and collaboration of different stakeholders. The lack of financial means, the burden of poverty and the environmental problems that the Global South continues to suffer show that climate action efforts must be addressed simultaneously with efforts to solve social injustices.

### 5.1.3. Niche development

From all interviews with ICI spokespersons, it was reiterated that expectations and visions, as well as guidelines, targets, deadlines, and opportunities for achieving sustainable transitions are planned at the top of the governance structure and shared in a top-down manner. While strategies for finding solutions to problems, the practices, and technologies to be used vary. The literature explains how, despite the normative nature of sustainability, transitions towards sustainability often require consideration of different values and principles (Horcea-Milcu et al., 2019). In the case of the digitalisation of agriculture, visions for the transition must assume a certain level of social legitimacy as the connection between technology, production levels and environmental issues is not so straightforward. In the previous chapter, we saw how GFAR is trying to develop together with small-scale farmers technologies adapted to their needs. This strategy involves discussion and sharing at the local level in a bottom-up manner. Similar strategies were found in PROAmazonia in the testimonies of the ICI spokespersons and local actors interviewed. While in the case of the mercury transition, the

connection between the use of this metal and environmental risk has strong scientific evidence behind it, HCWH SEA urges its participants to follow some top-down guidelines. On the other hand, the interviewed hospitals, discussing other transition examples, testified how bottom-up strategies can also be followed in this ICI. Transition theory and empirical evidence indicate how it is crucial to incorporate locally generated knowledge and ways of doing things at the institutional level (e.g., Taiwanese, and South African hospitals sharing experiences on GGHH and UTPL sharing best practices for non-timber production through scientific papers). Finally, the empirical examples brought by GFAR and the HCWH SEA and confirmed by the interviews with their participants revealed the importance of online platforms and social media in communication for spreading awareness, dissemination of knowledge (presenting best practices), education and trainings, networking (connecting members with each other), and collaboration.

#### 5.1.4. Amplification processes

The results provide evidence that ICIs implement the amplification mechanisms outlined in Figure 6 to incentivise and enhance local actors. We learnt that the multi-level structures typical of ICIs give rise to a recurring element, namely the capitalisation of resources, knowledge, and opportunities that local actors operating within niches can exploit once they become part of an ICI (instrumentalisation). For instance, the results show how the two hospitals in the health sector used the consulting services of GGHH Connect. But also, how ICIs themselves can exploit the windows of opportunity in the regime in which they operate to enhance and catalyse the efforts of the niches and local actors they work with. For example, the results show how PROAmazonía has harnessed the momentum and opportunities offered by the REDD+ agenda to mobilise and empower indigenous communities in the transition towards sustainable forest management and production. Despite the fact that this study is exploratory and still rather confined, the results showed how ICIs create dynamics to incentivise new actors to participate in their network, through out-scaling, up-scaling, and growth mechanisms. Furthermore, research results indicate that ICIs play an important role in complementing resources, knowledge, and efforts between different local actors, or between local and regional, national, and international actors, and between actors operating in sustainable niches and those operating in socio-technological regimes (partnering).

As we saw in the transition theory and empirical evidence in the previous chapter, amplification mechanisms result in niches being discovered, and supported by an increasing number of traditional actors (as explained in the case of the HCWH SEA spokesperson, which relies on the sharing of its participants' achievements to scale up its actions). In contrast, regional and national schemes discover the functionality and effectiveness of niches or supplement their shortcomings to mature and emerge (as we have seen with collective actions in the case of GFAR). However, from the results of the case studies we find that only two ICIs (HCWH SEA and PROAmazonía) emphasise the importance of the role of these institutions in promoting the replication of sustainable practices in different geographical areas (replication). In these two cases, we find a similar implementation pattern. The two ICIs promote best practices through their online or social platforms (workshops and trainings, stakeholder roundtables), exploiting their transnational nature to influence other actors or sectors operating in a different geographical area. Furthermore, looking at Figure 10 and analysing the empirical evidence from the case studies, we find that ICIs consider the institutional embedding of knowledge and ways of doing things emerging from local actors to be fundamental to their role.



## 5.2. Main takeaways & reflection on hypothesis

The results show that ICIs play a key role in the development of niches (visions, social networks) and in the amplification of the efforts of local actors, as hypothesised in chapter 2.5. These conclusions can be interpreted by analysing the results against the other hypotheses formulated in the research. The other hypotheses formulated are as follows. Firstly, the success or otherwise of a local actor in emerging from an innovative niche depends on the success of the niche development and amplification mechanisms put in place by ICIs. As seen from the case studies, ICIs generally possess the institutional and operational capacity to forge social networks. Furthermore, ICIs can promote ideas and innovations directly to local actors already engaged in climate action. Or they can build visions and expectations together with local actors and promote the resulting ideas. Interviews with ICI spokespersons revealed that local actors through ICIs can amplify their action in terms of scale or efficiency (e.g., by reducing transition costs). But we also saw how, despite the technological innovations that one of the GFAR participants proposes, it is struggling to emerge and network with other participants due to the limited functionality of the online tools that ICI offers.

The second hypothesis is that whether or not collective action for sustainable transitions takes on a significant scale in terms of the number of participants depends on the mechanisms that ICIs put in place to incentivise climate action. This hypothesis was examined through reported discussions with both ICIs and local participants. The enthusiasm found by local actors in recounting how they came into contact with the ICI and how through it they were able to inspire other actors or be inspired by them, shows that ICIs play a role with high persuasive capacities. However, what is meant by 'significant scale in terms of number of participants' remains an unknown. As explained in chapter 5.5, the results on the number of participants reported in Appendix II and the testimonies of ICI spokespersons are varied and leave doubts as to the perceived importance of the participation of local actors by ICIs.

The third hypothesis was that whether or not local actors benefit from participation in an ICI depends on the presence of engagement and enhancement practices (amplification mechanisms) in the ICI's strategies. The results explored how ICIs implement the processes of partnership, instrumentalisation, embedding and replication and revealed that each ICI approaches these processes creatively and with the means and networks at its disposal. Despite the perceived limitations discussed with local actors, all interviewees showed a degree of appreciation of the benefits that being a member of an ICI entails. We saw that ICIs organise campaigns, workshops, and trainings, create collective actions, develop partnerships to strengthen commitment to action and implement strategies for multi-dimensional learning processes. In the case of PROAmazonía, the ICI strategically collaborates with specific agencies and public organisations, while in the case of GFAR and HCWH SEA, the ICI does its best to accommodate everyone and encourage large-scale replication. Furthermore, we have seen how the institutional structure, representing multi-level governance, creates a system in which local actors can instrumentalise knowledge sources and resources. Moreover, they can connect with others, make themselves known by increasing their visibility and raising awareness of problems and opportunities.

## 5.3. Lesson learnt & managerial recommendations

Based on the empirical results of this study, the following recommendations can be formulated. Ad-hoc groups with different actors (not only local) collaborating in targeted collective actions, such as those institutionalised by GFAR, can foster engagement on specific issues, instrumentalise practitioners' knowledge and facilitate information exchange. Online platforms (such as online hubs in



the case of GFAR and GGHH Connect, and other social media used by HCWH SEA) are important tools that can amplify valorisation processes (partnership, instrumentalisation, embedding and replication). In addition, due to the visibility and ease of communication offered by online services, incentive processes can also be amplified. The development, publication, and dissemination of good practices as case studies (as seen in all three case studies) incentivises the engagement and replication of sustainable initiatives, valorises actors who have achieved important goals through visibility and prestige, and contributes to the scientific and technological advancement of the sector. These implications aim to equip the ICI's leading actors to support them in achieving niche development through the involvement and incentivisation of local actors engaged in climate action and to amplify their efforts to reduce transition costs and accelerate processes leading to sustainable pathways.

#### 5.4. Societal & scientific relevance

The framework used in this research offers a systematic approach to the analysis of incentive and enhancement mechanisms of local actors for the implementation of collective actions and sectoral transitions. The results show the lack of certain processes that make up the incentive and enhancement framework, or highlight the difficulties encountered in their implementation. In principle, this framework demonstrates how society would benefit from the existence of ICIs not only through the realisation of sectoral transitions that society faces in climate change mitigation and adaptation, but also through the benefits that such sustainability institutions can bring to communities. Theories of change that rely on the participation of local actors have proven to be effective, however, for this to happen, local stakeholders and community actors must be involved, and resources and benefits must be shared. Current efforts by research and institutions (such as the UNFCCC) focus on monitoring the overall progress of ICIs. The tendency is to compare the situation before and after the intervention of ICIs, which is important, but the scientific community itself questions this way of measuring the effectiveness and impact of ICIs and holding them accountable for the change they promote. In response, this research proposes that the mobilisation of local actors and the redistribution of resources among them can be a unit of measurement. The research community must therefore strive to find other optimal case studies by applying the framework of this research.

#### 5.5. Limitations & further research

The limitations of this research include a limited representation of how climate action can be incentivised to local actors, here only the efforts of ICIs are analysed. But incentives also derive from climate adaptation needs, mitigation policies, societal pressures, and scientific knowledge on technological innovation. Although these elements outside the research influence the climate action of local actors, they were not considered because they lie outside the research analysis unit. However, further research should investigate whether ICIs are able to catalyse these external incentives to exploit momentum and demonstrate capacity in developing effective dominant designs and multi-dimensional learning mechanisms. Another limitation concerns the number of ICIs' participants involved in the research. The number is not sufficient to conclude general assumptions about the selected ICIs. Indeed, the aim of this research is to show how the framework can be applied to the analysis of case studies rather than to evaluate the performance of these ICIs. Furthermore, the research design of this study, which was conceived for an exploratory study of the incentive and enhancement mechanisms of local actors, does not allow for an assessment of the effectiveness of these mechanisms in terms of overall progress in implementing transitions. Finally, another limitation emerges from the

potential desire of the ICI spokespersons interviewed to achieve a positive portrayal of the initiative through this research, and of local actors not to give negative publicity to the ICI partner. This may have led to biased interview responses, exalting the positive aspects of the ICIs, and downplaying or not stating the weak points.

Further research should focus on a single field by including more ICIs and more participants and this can be done with the survey method. Furthermore, further research should focus on answering the question of how important it is for ICIs to have many participants under their perception of change as the results of this research could not provide answers on this matter. The results of an analysis of the importance of local participation for the transition to sustainability compared between different subject areas might reveal the need for more or less participation in relation to different areas.

## 6. Conclusion

There are still many goals to be achieved and transitions to be undertaken in the global political agenda to adapt to and mitigate the threats of climate change. Each year, a significant number of ICIs are announced at international climate conferences (for example, more than a dozen ICIs were announced at COP27 in Egypt alone). This research, through a mixed-methods approach, explores the role of ICIs in realising some of these transitions. In particular, this study contributes to the existing literature by answering the following research question: *How do ICIs incentivise and enhance local non-state and subnational actors in the Global South to participate in collective climate action for sustainable transitions?* The research concludes by firstly analysing, through a large-N survey, what the institutions themselves require from local actors to become their members and participate in collective climate action. Second, through a small-N analysis of selected case studies, the research examines how ICIs engage and collaborate with their members, enhance them and what strategies they use to attract new members. Finally, the research explores what are the perceived benefits of participating in an ICI. The results show the perceptions of ICI representatives and those of their participants. These findings are contextualised by the sectors that characterise the case studies, such as agri-food production, healthcare, and forest management. Although the contexts in which these ICIs operate differ in terms of subject area and geography, common patterns emerged. Empirical findings gathered through surveys and semi-structured interviews with representatives of ICIs and participating local actors indicate that the role of these institutions is, on the one hand, to develop protected spaces for innovative niches where participants can experiment and create a space for mutual learning and self-correction. On the other hand, ICIs reinforce the efforts of their participants through amplification mechanisms. These findings contribute to the literature on environmental governance, offering novel results and providing a framework for studying ICIs with a theoretical lens that complements traditional governance studies by integrating concepts provided by transition theory.

In conclusion, these empirical findings confirm that theories of change that rely on the participation of local actors are valid. However, for sustainable transitions to occur effectively, rapidly, and legitimately, local stakeholders and community actors must be involved, and resources and benefits must be shared. This study invites us to reflect on the mobilisation of local stakeholders and the redistribution of resources as a unit of measurement, which is not sufficiently considered in the current literature. In light of the results of this research, it can be argued that ICIs complement national efforts in the pursuit of sustainable development goals. It is clear that ICIs still have great opportunities to increase their effectiveness in developing niches and amplifying local efforts. However, these

institutions have significant potential and their presence on the global environmental governance scene is crucial.

## Bibliography

- Abbott, K. W. (2012). The Transnational Regime Complex for Climate Change—Kenneth W Abbott, 2012. *Environment and Planning C*, 88(3), 543–564.
- Ahlborg, U. G., Becking, G. C., Birnbaum, L. S., Brouwer, A., Derks, H., Feeley, M., Golor, G., Hanberg, A., Larsen, J. C., Liem, A. K. D., Safe, S. H., Schlatter, C., Waern, F., Younes, M., & Yrjänheikki, E. (1994). Toxic equivalency factors for dioxin-like PCBs. *Chemosphere*, 28(6), 1049–1067. [https://doi.org/10.1016/0045-6535\(94\)90324-7](https://doi.org/10.1016/0045-6535(94)90324-7)
- Amazon Conservation. (2022). *Threats to the Amazon*. Amazon Conservation Association. <https://www.amazonconservation.org/the-challenge/threats/>
- Amigo, I. (2020). When will the Amazon hit a tipping point? *Nature*, 578(7796), 505–507. <https://doi.org/10.1038/d41586-020-00508-4>
- Anderson, P., & Tushman, M. L. (1990). Technological Discontinuities and Dominant Designs: A Cyclical Model of Technological Change. *Administrative Science Quarterly*, 35(4), 604–633. <https://doi.org/10.2307/2393511>
- Andonova, L. B. (2010). Public-Private Partnerships for the Earth: Politics and Patterns of Hybrid Authority in the Multilateral System. *Global Environmental Politics*, 10(2), 25–53.
- Andonova, L. B., Betsill, M. M., & Bulkeley, H. (2009). Transnational Climate Governance. *Global Environmental Politics*, 9(2), 52–73. <https://doi.org/10.1162/glep.2009.9.2.52>
- Asselt, H. van. (2016). The Role of Non-State Actors in Reviewing Ambition, Implementation, and Compliance under the Paris Agreement. *Climate Law*, 6(1–2), 91–108. <https://doi.org/10.1163/18786561-00601006>
- Bäckstrand, K. (2006). Multi-stakeholder partnerships for sustainable development: Rethinking legitimacy, accountability and effectiveness. *European Environment*, 16(5), 290–306. <https://doi.org/10.1002/eet.425>
- Bakhtiari, F. (2018). International cooperative initiatives and the United Nations Framework Convention on Climate Change. *Climate Policy*, 18(5), 655–663. <https://doi.org/10.1080/14693062.2017.1321522>
- Bates, L., Green, M., Leonard, R., & Walker, I. (2013). The Influence of Forums and Multilevel Governance on the Climate Adaptation Practices of Australian Organizations. *Ecology and Society*, 18(4). <https://doi.org/10.5751/ES-06120-180462>
- Bauer, A., & Steurer, R. (2014). Multi-level governance of climate change adaptation through regional partnerships in Canada and England. *Geoforum*, 51, 121–129. <https://doi.org/10.1016/j.geoforum.2013.10.006>
- Bellinson, R. G. (2018). Connecting the Dots: The Politics of Governing Urban Climate Adaptation Innovations Through Transnational Municipal Networks. In S. Hughes, E. K. Chu, & S. G. Mason (Eds.), *Climate Change in Cities: Innovations in Multi-Level Governance* (pp. 183–202). Springer International Publishing. [https://doi.org/10.1007/978-3-319-65003-6\\_10](https://doi.org/10.1007/978-3-319-65003-6_10)
- Bennett, E. M., Solan, M., Biggs, R., McPhearson, T., Norström, A. V., Olsson, P., Pereira, L., Peterson, G. D., Raudsepp-Hearne, C., Biermann, F., Carpenter, S. R., Ellis, E. C., Hichert, T., Galaz, V., Lahsen, M., Milkoreit, M., Martín López, B., Nicholas, K. A., Preiser, R., ... Xu, J. (2016). Bright spots: Seeds of a good Anthropocene. *Frontiers in Ecology and the Environment*, 14(8), 441–448. <https://doi.org/10.1002/fee.1309>
- Benz, A., & Eberlein, B. (1999). The Europeanization of regional policies: Patterns of multi-level governance. *Journal of European Public Policy*, 6(2). <https://doi.org/10.1080/135017699343748>
- Berkhout, F., Leach, M., & Scoones, I. (2003). *Negotiating Environmental Change*. Edward Elgar. <https://econpapers.repec.org/bookchap/elgeebook/2388.htm>
- Betsill, M. M., & Bulkeley, H. (2004). Transnational Networks and Global Environmental Governance: The Cities for Climate Protection Program. *International Studies Quarterly*, 48(2), 471–493. <https://doi.org/10.1111/j.0020-8833.2004.00310.x>
- Börzel, T., & Risse, T. (2005). Public-Private Partnerships. Effective and Legitimate Tools of International Governance? In *Omplex Sovereignty. Reconstituting Political Authority in the Twenty-First Century* (pp. 195–216). University of Toronto Press. [https://www.polsoz.fu-berlin.de/en/polwiss/forschung/international/atasp/publikationen/4\\_artikel\\_papiere/69/index.html](https://www.polsoz.fu-berlin.de/en/polwiss/forschung/international/atasp/publikationen/4_artikel_papiere/69/index.html)
- Boyer, R. H. W. (2015). Grassroots innovation for urban sustainability: Comparing the diffusion pathways of three ecovillage projects. *Environment and Planning A: Economy and Space*, 47(2), 320–337. <https://doi.org/10.1068/a140250p>
- Bulkeley, H., Andonova, L. B., Betsill, M. M., Compagnon, D., Hale, T., Hoffmann, M. J., Newell, P., Paterson, M., Roger, C., & VanDeveer, S. D. (2014). *Transnational Climate Change Governance*. Cambridge University Press.
- Bulkeley, H., Andonova, L., Bäckstrand, K., Betsill, M., Compagnon, D., Duffy, R., Kolk, A., Hoffmann, M., Levy, D., Newell, P., Milledge, T., Paterson, M., Pattberg, P., & VanDeveer, S. (2012). Governing Climate Change Transnationally: Assessing the Evidence from a Database of Sixty Initiatives. *Environment and Planning C: Government and Policy*, 30(4), 591–612. <https://doi.org/10.1068/c11126>
- Bulkeley, H., & Newell, P. (2015). *Governing Climate Change* (2nd ed.). Routledge. <https://doi.org/10.4324/9781315758237>
- Bussu, S., & Bartels, K. P. R. (2014). Facilitative Leadership and the Challenge of Renewing Local Democracy in Italy. *International Journal of Urban and Regional Research*, 38(6), 2256–2273. <https://doi.org/10.1111/1468-2427.12070>
- Calanog, S. (2022). *St. Andrew's Mercury Spill*. [https://response.epa.gov/site/site\\_profile.aspx?site\\_id=2291](https://response.epa.gov/site/site_profile.aspx?site_id=2291)
- Chan, S., Boran, I., van Asselt, H., Iacobuta, G., Niles, N., Rietig, K., Scobie, M., Bansard, J. S., Delgado Pugley, D., Delina, L. L., Eichhorn, F., Ellinger, P., Enechi, O., Hale, T., Hermwille, L., Hickmann, T., Honegger, M., Hurtado Epstein, A., La Hoz

- Theuer, S., ... Wambugu, G. (2019). Promises and risks of nonstate action in climate and sustainability governance. *WIREs Climate Change*, 10(3), e572. <https://doi.org/10.1002/wcc.572>
- Chan, S., Deneault, A., Hale, T., Shrivastava, M., & Mbeva, K. (2022). *Climate – Cooperative Initiatives Database (C-CID)*. German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE), Global Center on Adaptation (GCA), Blavatnik School of Government at Oxford University (BSG), The Energy and Resources Institute (TERI), African Centre for Technology Studies (ACTS).
- Chan, S., Eichhorn, F., Biermann, F., & Teunissen, A. (2021). A Momentum for Change? Systemic effects and catalytic impacts of transnational climate action. *Earth System Governance*, 9, 100119. <https://doi.org/10.1016/j.esg.2021.100119>
- Chan, S., & Hale, T. (2015). *Galvanizing the groundswell of climate actions in the developing world* (p. 18) [Working Paper]. German Institute of Development and Sustainability - IDOS, The Energy and Resources Institute (TERI), and Galvanizing the Groundswell of Climate Actions. [https://static1.squarespace.com/static/552be32ce4b0b269a4e2ef58/t/55afedf9e4b05618327de34c/1437593081002/W\\_P\\_Galvanizing+the+Groundswell+of+Climate+Actions+in+the+Developing+World%284%29.pdf](https://static1.squarespace.com/static/552be32ce4b0b269a4e2ef58/t/55afedf9e4b05618327de34c/1437593081002/W_P_Galvanizing+the+Groundswell+of+Climate+Actions+in+the+Developing+World%284%29.pdf)
- Chan, S., Hale, T., Deneault, A., Shrivastava, M., Mbeva, K., Chengo, V., & Atela, J. (2022). Assessing the effectiveness of orchestrated climate action from five years of summits. *Nature Climate Change*, 12(7), 628–633. <https://doi.org/10.1038/s41558-022-01405-6>
- Chan, S., van Asselt, H., Hale, T., Abbott, K. W., Beisheim, M., Hoffmann, M., Guy, B., Höhne, N., Hsu, A., Pattberg, P., Pauw, P., Ramstein, C., & Widerberg, O. (2015). Reinvigorating International Climate Policy: A Comprehensive Framework for Effective Nonstate Action. *Global Policy*, 6(4), 466–473. <https://doi.org/10.1111/1758-5899.12294>
- Chmutina, K., Wiersma, B., Goodier, C. I., & Devine-Wright, P. (2014). Concern or compliance? Drivers of urban decentralised energy initiatives. *Sustainable Cities and Society*, 10, 122–129. <https://doi.org/10.1016/j.scs.2013.07.001>
- Christensen, C. M., Christensen, C. M., Ganser, L. J., & Leslie, D. (1997). *The innovator's dilemma: When new technologies cause great firms to fail*. Harvard Business School Press.
- Cloutier, G., Joerin, F., Dubois, C., Labarthe, M., Legay, C., & Viens, D. (2014). Planning adaptation based on local actors' knowledge and participation: A climate governance experiment. *Climate Policy*, 15, 1–17. <https://doi.org/10.1080/14693062.2014.937388>
- Conzelmann, T., & Smith, R. (2008). *Multi-Level Governance in the European Union: Taking Stock and Looking Ahead*. Nomos. <https://www.nomos-shop.de/nomos/titel/multi-level-governance-in-the-european-union-taking-stock-and-looking-ahead-id-70142/>
- Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. (2011). The case study approach. *BMC Medical Research Methodology*, 11(1), 100. <https://doi.org/10.1186/1471-2288-11-100>
- de Haan, J. (Hans), & Rotmans, J. (2011). Patterns in transitions: Understanding complex chains of change. *Technological Forecasting and Social Change*, 78(1), 90–102. <https://doi.org/10.1016/j.techfore.2010.10.008>
- DeFries, R. S., Foley, J. A., & Asner, G. P. (2004). Land-Use Choices: Balancing Human Needs and Ecosystem Function. *Frontiers in Ecology and the Environment*, 2(5), 249–257. <https://doi.org/10.2307/3868265>
- Desa, G., & Koch, J. L. (2014). Scaling Social Impact: Building Sustainable Social Ventures at the Base-of-the-Pyramid. *Journal of Social Entrepreneurship*, 5(2), 146–174. <https://doi.org/10.1080/19420676.2013.871325>
- Devolder, S., & Block, T. (2015). Transition Thinking Incorporated: Towards a New Discussion Framework on Sustainable Urban Projects. *Sustainability*, 7(3), Article 3. <https://doi.org/10.3390/su7033269>
- Dubois, M. (2001). Ideology, Sociology of. In N. J. Smelser & P. B. Baltes (Eds.), *International Encyclopedia of the Social & Behavioral Sciences* (pp. 7177–7182). Pergamon. <https://doi.org/10.1016/B0-08-043076-7/01896-9>
- Ebneyamini, S., & Sadeghi Moghadam, M. R. (2018). Toward Developing a Framework for Conducting Case Study Research. *International Journal of Qualitative Methods*, 17(1), 1609406918817954. <https://doi.org/10.1177/1609406918817954>
- Eckersley, R. (2012). Moving Forward in the Climate Negotiations: Multilateralism or Minilateralism? *Global Environmental Politics - GLOB ENVIRON POLIT*, 12, 24–42. [https://doi.org/10.1162/GLEP\\_a\\_00107](https://doi.org/10.1162/GLEP_a_00107)
- Eizaguirre, S., Pradel, M., Terrones, A., Martinez-Celorrío, X., & García, M. (2012). Multilevel Governance and Social Cohesion: Bringing Back Conflict in Citizenship Practices. *Urban Studies*, 49(9), 1999–2016. <https://doi.org/10.1177/0042098012444890>
- EPA. (2011). *Inventory of US greenhouse gas emissions and sinks: 1990–2009* (Notice No. 2011–3999; p. 10026). US Environmental Protection Agency (EPA). <https://www.govinfo.gov/content/pkg/FR-2011-02-23/pdf/2011-3999.pdf>
- FAO. (2020). *Global Forest Resources Assessment 2020 – Key Findings*. <https://doi.org/10.4060/ca8753en>
- Fidelman, P. I. J., Leitch, A. M., & Nelson, D. R. (2013). Unpacking multilevel adaptation to climate change in the Great Barrier Reef, Australia. *Global Environmental Change*, 23(4), 800–812. <https://doi.org/10.1016/j.gloenvcha.2013.02.016>
- Foley, J. A., Ramankutty, N., Brauman, K. A., Cassidy, E. S., Gerber, J. S., Johnston, M., Mueller, N. D., O'Connell, C., Ray, D. K., West, P. C., Balzer, C., Bennett, E. M., Carpenter, S. R., Hill, J., Monfreda, C., Polasky, S., Rockström, J., Sheehan, J., Siebert, S., ... Zaks, D. P. M. (2011). Solutions for a cultivated planet. *Nature*, 478(7369), Article 7369. <https://doi.org/10.1038/nature10452>
- Forrest, N., & Wiek, A. (2015). Success factors and strategies for sustainability transitions of small-scale communities – Evidence from a cross-case analysis. *Environmental Innovation and Societal Transitions*, 17, 22–40. <https://doi.org/10.1016/j.eist.2015.05.005>



- Fraser, J. C., & Kick, E. L. (2014). Governing urban restructuring with city-building non- profits. *Environment and Planning A: Economy and Space*, 46, 1445–1461.
- Freeman, C., Louçã, F., Freeman, C., & Louçã, F. (2001). *As Time Goes By: From the Industrial Revolutions to the Information Revolution*. Oxford University Press.
- Garcia, M., Eizaguirre Anglada, S., & Pradel-Miquel, M. (2015). Social innovation and creativity in cities: A socially inclusive governance approach in two peripheral spaces of Barcelona. *City, Culture and Society*, XXX 2015, 1–15. <https://doi.org/10.1016/j.ccs.2015.07.001>
- Geels, F. W. (2002). Technological transitions as evolutionary reconfiguration processes: A multi-level perspective and a case-study. *Research Policy*, 31(8), 1257–1274. [https://doi.org/10.1016/S0048-7333\(02\)00062-8](https://doi.org/10.1016/S0048-7333(02)00062-8)
- Geels, F. W. (2004). From sectoral systems of innovation to socio-technical systems: Insights about dynamics and change from sociology and institutional theory. *Research Policy*, 33(6), 897–920. <https://doi.org/10.1016/j.respol.2004.01.015>
- Geels, F. W. (2011). The multi-level perspective on sustainability transitions: Responses to seven criticisms. *Environmental Innovation and Societal Transitions*, 1(1), 24–40. <https://doi.org/10.1016/j.eist.2011.02.002>
- GFAR. (2022a). *About us | GFAR*. <https://www.gfar.net/about-us>
- GFAR. (2022c). *GFAR Collective Action on Inclusive Digital Agriculture*. Global Forum on Agricultural Research and Innovation (GFAR). <https://www.gfar.net/sites/default/files/GFAR%20Collective%20Action%20-%20Inclusive%20Digital%20Agriculture.pdf>
- GFAR. (2022b). *Working with GFAR*. Unpublished.
- GFAR, COPROFAM, & FORAGRO. (2022). *Current Scenario and Needs for the Development of an Inclusive Digital Agriculture Program for Latin America and the Caribbean*. Global Forum on Agricultural Research and Innovation (GFAR), Confederation of Family Producers' Organizations of Greater Mercosur (COPROFAM), The Forum of the Americas for Agricultural Research and Technological Development. (FORAGRO). <https://www.gfar.net/sites/default/files/Report%20IDA%20LAC%20-%20final.pdf>
- GGHH. (2022a). *About | GGHH*. <https://greenhospitals.org/about>
- Gorissen, L., Spira, F., Meynaerts, E., Valkering, P., & Frantzeskaki, N. (2018). Moving towards systemic change? Investigating acceleration dynamics of urban sustainability transitions in the Belgian City of Genk. *Journal of Cleaner Production*, 173, 171–185. <https://doi.org/10.1016/j.jclepro.2016.12.052>
- Grix, J. (2019). *The foundations of research / Jonathan Grix*. (Third edition.). Macmillan International Higher Education.
- GSMA. (2020). *Digital Agriculture Maps: 2020 State of the Sector in Low and Middle-Income Countries (online)*. the Global Association of Mobile Systems (GSMA) AgriTech Programme. <https://www.gsma.com/r/wp-content/uploads/2020/09/GSMA-Agritech-Digital-Agriculture-Maps.pdf>
- Hale, T. (2018). *The Role of Sub-state and Non- state Actors in International Climate Processes*. 17.
- Harvie, J. P., & Karliner, J. (2008). *End of An Era: The Phase-Out of MercuryBased Blood Pressure Measurement Devices in the United States* (pp. 23–25). Health Care Without Harm. [https://noharm-global.org/sites/default/files/documents-files/1022/End\\_of\\_an\\_Era\\_Mercury\\_0.pdf](https://noharm-global.org/sites/default/files/documents-files/1022/End_of_an_Era_Mercury_0.pdf)
- Hatcher, A., Jaffry, S., Thébaud, O., & Bennett, E. (2000). Normative and Social Influences Affecting Compliance with Fishery Regulations. *Land Economics*, 76. <https://doi.org/10.2307/3147040>
- HCWH. (2020). *RISE SOUTHEAST ASIA ALLIANCE FOR HEALTH AND CLIMATE | A Virtual Launch*. Health Care Without Harm. <https://noharm-uscanada.org/RISESoutheastAsiaLaunch>
- HCWH. (2022). *HCWH-Asia*. Health Care Without Harm. <https://noharm-asia.org/content/asia/hcwh-asia>
- Healey, P. (2015). Citizen-generated local development initiative: Recent English experience. *International Journal of Urban Sciences*, 19(2), 109–118. <https://doi.org/10.1080/12265934.2014.989892>
- Hekkert, M. P., Suurs, R. A. A., Negro, S. O., Kuhlmann, S., & Smits, R. E. H. M. (2007). Functions of innovation systems: A new approach for analysing technological change. *Technological Forecasting and Social Change*, 74(4), 413–432. <https://doi.org/10.1016/j.techfore.2006.03.002>
- Hermans, F., Roep, D., & Klerkx, L. (2016). Scale dynamics of grassroots innovations through parallel pathways of transformative change. *Ecological Economics*, 130, 285–295. <https://doi.org/10.1016/j.ecolecon.2016.07.011>
- Hoffmann, M. J. (2011). *Climate Governance at the Crossroads: Experimenting with a Global Response after Kyoto*. Oxford University Press.
- Holmes, A. G. D. (2020). Researcher Positionality – A Consideration of Its Influence and Place in Qualitative Research – A New Researcher Guide. *Shanlax International Journal of Education*, 8(4), 1–10. <https://doi.org/10.34293/education.v8i4.3232>
- Hooghe, L., & Marks, G. (2001). *Multi-Level Governance and European Integration*. Rowman & Littlefield. <https://rowman.com/ISBN/9780742510197/Multi-Level-Governance-and-European-Integration>
- Horcea-Milcu, A.-I., Abson, D. J., Apetrei, C. I., Duse, I. A., Freeth, R., Riechers, M., Lam, D. P. M., Dorninger, C., & Lang, D. J. (2019). Values in transformational sustainability science: Four perspectives for change. *Sustainability Science*, 14(5), 1425–1437. <https://doi.org/10.1007/s11625-019-00656-1>
- Hsu, A., Cheng, Y., Weinfurter, A., Xu, K., & Yick, C. (2016). Track climate pledges of cities and companies. *Nature*, 532(7599), 303–306. <https://doi.org/10.1038/532303a>



- Hsu, A., Widerberg, O., Weinfurter, A., Chan, S., Roelfsema, M., Lütkehermöller, K., & Bakhtiari, F. (2018). Bridging the gap: The role of non-state and subnational actors. In *Emissions Gap Report 2018, UNEP - UN Environment Programme*. United Nations Environment Programme. <http://www.unep.org/resources/emissions-gap-report-2018>
- Huntjens, P., & Zhang, T. (2016). *Climate Justice: Equitable and Inclusive Governance of Climate Action*. 29.
- Iannuzzi, G., Santos, R., & Mourato, J. M. (2020). The involvement of non-state actors in the creation and management of protected areas: Insights from the Portuguese case. *Journal of Environmental Planning and Management*, 63(9), 1674–1694. <https://doi.org/10.1080/09640568.2019.1685475>
- IPCC. (2022a). *Sixth Assessment Report, Climate Change 2022: Impacts, Adaptation and Vulnerability – Working Group II*. <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>
- IPCC. (2022b). *Sixth Assessment Report, Climate Change 2022: Mitigation of Climate Change, Summary for Policymakers – Working Group III*. <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>
- Ishtiaque, A. (2021). Chapter 10 - Multilevel governance in climate change adaptation: Conceptual clarification and future outlook. In A. Fares (Ed.), *Climate Change and Extreme Events* (pp. 171–185). Elsevier. <https://doi.org/10.1016/B978-0-12-822700-8.00009-3>
- Jänicke, M. (2017). The Multi-level System of Global Climate Governance – the Model and its Current State. *Environmental Policy and Governance*, 27(2), 108–121. <https://doi.org/10.1002/eet.1747>
- Jordan, A., van Asselt, H., Berkhout, F., Huitema, D., & Rayner, T. (2012). Understanding the paradoxes of multi-level governing: Climate change policy in the European Union. *Global Environmental Politics*, 12(2), 43–66. [https://doi.org/10.1162/GLEP\\_a\\_00108](https://doi.org/10.1162/GLEP_a_00108)
- Karliner, J. (2010). *Toward the Tipping Point: WHO-HCW Global Initiative to Substitute Mercury Based Medical Devices in Health Care – A Two-Year Progress Report*. World Health Organization - Health Care Without Harm. [https://noharm-uscanada.org/sites/default/files/documents-files/743/Toward\\_the\\_Tipping\\_Point.pdf](https://noharm-uscanada.org/sites/default/files/documents-files/743/Toward_the_Tipping_Point.pdf)
- Keck, M. E., & Sikkink, K. (1998). *Activists beyond Borders: Advocacy Networks in International Politics*. Cornell University Press. <http://www.jstor.org/stable/10.7591/j.ctt5hh13f>
- Kemp, R., Schot, J., & Hoogma, R. (1998). Regime shifts to sustainability through processes of niche formation: The approach of strategic niche management. *Technology Analysis & Strategic Management*, 10(2), 175–198. <https://doi.org/10.1080/09537329808524310>
- Kern, K., & Bulkeley, H. (2009). Cities, Europeanization and Multi-level Governance: Governing Climate Change through Transnational Municipal Networks\*. *JCMS: Journal of Common Market Studies*, 47(2), 309–332. <https://doi.org/10.1111/j.1468-5965.2009.00806.x>
- Khetarpal, R., & Lingnau, H. (2022). *The Global Forum on Agricultural Research and Innovation (GFAR) Revived and Rebooted*. Global Forum on Agricultural Research and Innovation (GFAR). <https://www.gfar.net/sites/default/files/A%20strategy%20for%20GFAR.pdf>
- Klein, J., Juhola, S., & Landauer, M. (2017). Local authorities and the engagement of private actors in climate change adaptation. *Environment and Planning C: Politics and Space*, 35(6), 1055–1074. <https://doi.org/10.1177/0263774X16680819>
- Kuramochi, T., Smit, S., Hans, F., Horn, J., Lütkehermöller, K., Nascimento, L., Emmrich, J., Höhne, N., Hsu, A., Mapes, B., Wang, X., Roelfsema, M., Chan, S., Deneault, A., de Souza Nagasawa, B., Mohan, M., Whitney, M., Brehm, J., Hassel, J., ... Hale, T. (2021). *Global climate action from cities, regions and businesses – Edition 3*. <https://newclimate.org/resources/publications/global-climate-action-from-cities-regions-and-businesses-2019>
- Kusow, A. M. (2003). Beyond Indigenous Authenticity: Reflections on the Insider/Outsider Debate in Immigration Research. *Symbolic Interaction*, 26(4), 591–599. <https://doi.org/10.1525/si.2003.26.4.591>
- Lam, D. P. M., Hinz, E., Lang, D., Tengö, M., Wehrden, H., & Martín-López, B. (2020b). Indigenous and local knowledge in sustainability transformations research: A literature review. *Ecology and Society*, 25(1). <https://doi.org/10.5751/ES-11305-250103>
- Lam, D. P. M., Horcea-Milcu, A. I., Fischer, J., Peukert, D., & Lang, D. J. (2019). Three principles for co-designing sustainability intervention strategies: Experiences from Southern Transylvania. *Ambio*, 49(9), 1451–1465. <https://doi.org/10.1007/s13280-019-01302-x>
- Lam, D. P. M., Martín-López, B., Wiek, A., Bennett, E. M., Frantzeskaki, N., Horcea-Milcu, A. I., & Lang, D. J. (2020a). Scaling the impact of sustainability initiatives: A typology of amplification processes. *Urban Transformations*, 2(1), 3. <https://doi.org/10.1186/s42854-020-00007-9>
- Leach, M., Rockström, J., Raskin, P., Scoones, I., Stirling, A. C., Smith, A., Thompson, J., Millstone, E., Ely, A., Arond, E., Folke, C., & Olsson, P. (2012). Transforming Innovation for Sustainability. *Ecology and Society*, 17(2). <http://www.jstor.org/stable/26269052>
- MAE. (2016). *Bosques para el Buen Vivir – Plan de Acción REDD+ Ecuador (2016-2025)*. Ministerio del Ambiente de Ecuador. [https://proamazonia.org/wp-content/uploads/2019/10/MAE\\_2016\\_11\\_21\\_ART\\_LIBRO\\_REDD\\_17\\_nov-2016\\_compressed-min.pdf](https://proamazonia.org/wp-content/uploads/2019/10/MAE_2016_11_21_ART_LIBRO_REDD_17_nov-2016_compressed-min.pdf)
- Malterud, K. (2001). Qualitative research: Standards, challenges, and guidelines. *Lancet (London, England)*, 358(9280), 483–488. [https://doi.org/10.1016/S0140-6736\(01\)05627-6](https://doi.org/10.1016/S0140-6736(01)05627-6)
- Marin, F. R., Zanon, A. J., Monzon, J. P., Andrade, J. F., Silva, E. H. F. M., Richter, G. L., Antolin, L. A. S., Ribeiro, B. S. M. R., Ribas, G. G., Battisti, R., Heinemann, A. B., & Grassini, P. (2022). Protecting the Amazon forest and reducing global

- warming via agricultural intensification. *Nature Sustainability*, 5(12), Article 12. <https://doi.org/10.1038/s41893-022-00968-8>
- Merriam, S. B. (1998). *Qualitative research and case study applications in education* (2nd ed). Jossey-Bass Publishers.
- Meschinelli, A., AndriLys, J., & Water Bayers, A. (2022). *Selected criteria for assessing quality of research partnerships*. Unpublished.
- Millar, J., & Connell, J. (2010). Strategies for scaling out impacts from agricultural systems change: The case of forages and livestock production in Laos. *Agriculture and Human Values*, 27(2), 213–225.
- Moore, M.-L., Riddell, D., & Vocisano, D. (2015). Scaling Out, Scaling Up, Scaling Deep: Strategies of Non-profits in Advancing Systemic Social Innovation. *Journal of Corporate Citizenship*, 2015(58), 67–84. <https://doi.org/10.9774/gleaf.4700.2015.ju.00009>
- Mortimer, F. (2010). The sustainable physician. *Clinical Medicine*, 10(2), 110–111. <https://doi.org/10.7861/clinmedicine.10-2-110>
- Mortimer, F., & Pencheon, D. (2022). Do no harm: Addressing the environmental impact of health care. *Nature Reviews Disease Primers*, 8(1), Article 1. <https://doi.org/10.1038/s41572-022-00372-8>
- Naber, R., Raven, R., Kouw, M., & Dassen, T. (2017). Scaling up sustainable energy innovations. *Energy Policy*, 110, 342–354. <https://doi.org/10.1016/j.enpol.2017.07.056>
- Negacz, K., Petersson, M., Widerberg, O., Kok, M., & Pattberg, P. (2022). The potential of international cooperative initiatives to address key challenges of protected areas. *Environmental Science & Policy*, 136, 620–631. <https://doi.org/10.1016/j.envsci.2022.07.026>
- NHS. (2009). *Saving carbon, improving health: NHS carbon reduction strategy*. Sustainable Development Unit. <https://www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2021/02/NHS-Carbon-Reduction-Strategy-2009.pdf>
- NHS. (2020). *Delivering a 'Net Zero' National Health Service*. NHS. <https://www.england.nhs.uk/greenernhs/wpcontent/uploads/sites/51/2020/10/delivering-a-net-zero-national-health-service.pdf>
- Nobre, C. A., Sampaio, G., Borma, L. S., Castilla-Rubio, J. C., Silva, J. S., & Cardoso, M. (2016). Land-use and climate change risks in the Amazon and the need of a novel sustainable development paradigm. *Proceedings of the National Academy of Sciences*, 113(39), 10759–10768. <https://doi.org/10.1073/pnas.1605516113>
- Odegard, I. Y. R., & van der Voet, E. (2014). The future of food – Scenarios and the effect on natural resource use in agriculture in 2050. *Ecological Economics*, 97, 51–59. <https://doi.org/10.1016/j.ecolecon.2013.10.005>
- OECD. (2015). *Development Co-operation Report 2015: Making Partnerships Effective Coalitions for Action*. OECD. <https://doi.org/10.1787/dcr-2015-en>
- Ormston, R., Spencer, L., Barnard, M., & Snape, D. (2013). The Foundations of Qualitative Research. In J. Ritchie, J. Lewis, C. McNaughton Nicholls, & R. Ormston (Eds.), *Qualitative Research Practice: A Guide for Social Science Students and Researchers* (2nd ed.). SAGE Publications Ltd. <https://www.semanticscholar.org/paper/Qualitative-Research-Practice%3A-A-Guide-for-Social-Ritchie-Lewis/5e7b1064cfa54afee47ad6fe65d07a407480ea88>
- Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511807763>
- Ostrom, E. (2009). *A Polycentric Approach for Coping with Climate Change*. World Bank. <https://doi.org/10.1596/1813-9450-5095>
- Ostrom, E. (2010). Polycentric systems for coping with collective action and global environmental change. *Global Environmental Change*, 20(4), 550–557. <https://doi.org/10.1016/j.gloenvcha.2010.07.004>
- Pattberg, P. (2010). Public-private partnerships in global climate governance. *WIREs Climate Change*, 1, 279–287. <https://doi.org/doi.org/10.1002/wcc.38>
- Pattberg, P., Biermann, F., Chan, S., & Mert, A. (2012). *Public-Private Partnerships for Sustainable Development*. Edward Elgar.
- Pattberg, P., & Widerberg, O. (2016). Transnational multistakeholder partnerships for sustainable development: Conditions for success. *Ambio*, 45(1), 42–51. <https://doi.org/10.1007/s13280-015-0684-2>
- Pereira, L., Asrar, G. R., Bhargava, R., Fisher, L. H., Hsu, A., Jabbour, J., Nel, J., Selomane, O., Sitas, N., Trisos, C., Ward, J., van den Ende, M., Vervoort, J., & Weinfurter, A. (2021). Grounding global environmental assessments through bottom-up futures based on local practices and perspectives. *Sustainability Science*, 16(6), 1907–1922. <https://doi.org/10.1007/s11625-021-01013-x>
- Pretty, J. N., Morison, J. I. L., & Hine, R. E. (2003). Reducing food poverty by increasing agricultural sustainability in developing countries. *Agriculture, Ecosystems & Environment*, 95(1), 217–234. [https://doi.org/10.1016/S0167-8809\(02\)00087-7](https://doi.org/10.1016/S0167-8809(02)00087-7)
- PROAmazonía. (2022). *Transition to Sustainable Production*. Produccion Sostenible. <https://www.proamazonia.org/produccion-sostenible/>
- Public Health England. (2014). *Sustainable development strategy for the health and social care system: 2014 to 2020*. Sustainable Development Unit. <http://www.sduhealth.org.uk/policy-strategy/engagement-resources.aspx>
- Reid, W., Mooney, H., Cropper, A., Capistrano, D., Carpenter, S., & Chopra, K. (2005). *Millennium Ecosystem Assessment. Ecosystems and human well-being: Synthesis*. Island Press.
- Rip, A., & Kemp, R. (1998). Technological change. *Human Choice and Climate Change: Vol. II, Resources and Technology*, 327–399.
- Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., Lambin, E., Lenton, T. M., Scheffer, M., Folke, C., Schellnhuber, H. J., Nykvist, B., de Wit, C. A., Hughes, T., van der Leeuw, S., Rodhe, H., Sörlin, S., Snyder, P. K., Costanza, R., Svedin,

- U., ... Foley, J. (2009). Planetary boundaries: Exploring the safe operating space for humanity. *Conservation Ecology*, 14(2). <https://doi.org/10.5751/ES-03180-140232>
- Roger, C., Compagnon, D., Bulkeley, H., Andonova, L. B., Paterson, M., Hoffmann, M. J., Betsill, M. M., Newell, P., VanDeveer, S. D., & Hale, T. (Eds.). (2014). Introducing Transnational Climate Change Governance. In *Transnational Climate Change Governance* (pp. 1–16). Cambridge University Press. <https://doi.org/10.1017/CBO9781107706033.001>
- Rogers, E. M. (2003). *Diffusion of Innovations* (5th ed.). Free Press.
- Rouse, R. (2019). *International, Transnational, Multinational, Global*. <https://teaching.pitt.edu/wp-content/uploads/2019/06/DIFD-2019-GlobalStudies-InternationalTransnationalMultinationalGlobal-May2019.pdf>
- Sagaris, L. (2014). Citizen participation for sustainable transport: The case of “Living City” in Santiago, Chile (1997–2012). *Journal of Transport Geography*, 41, 74–83. <https://doi.org/10.1016/j.jtrangeo.2014.08.011>
- Sanderink, L., Kristensen, K. E. G., Widerberg, O., & Pattberg, P. (2018). *Mapping the Institutional Architecture of Global Energy Governance* (Report R-18/02; CONNECT - Coping with Fragmentation). Instituut voor Milieuvraagstukken. <https://doi.org/10.13140/RG.2.2.22530.38085>
- Sattler, C., Schröter, B., Meyer, A., Giersch, G., Meyer, C., & Matzdorf, B. (2016). Multilevel governance in community-based environmental management: A case study comparison from Latin America. *Ecology and Society*, 21(4). <https://doi.org/10.5751/ES-08475-210424>
- Scharpf, F. W. (1997). Introduction: The problem-solving capacity of multi-level governance. *Journal of European Public Policy*, 4(4), 520–538. <https://doi.org/10.1080/135017697344046>
- Schot, J., & Geels, F. W. (2008). Strategic niche management and sustainable innovation journeys: Theory, findings, research agenda, and policy. *Technology Analysis & Strategic Management*, 20(5), 537–554. <https://doi.org/10.1080/09537320802292651>
- Schreurs, M. A., & Tiberghien, Y. (2007). Multi-Level Reinforcement: Explaining European Union Leadership in Climate Change Mitigation. *Global Environmental Politics*, 7(4), 19–46. <https://doi.org/10.1162/glep.2007.7.4.19>
- Scoones, I., & Thompson, J. (1994). Beyond Farmer First – Rural People’s Knowledge, Agricultural Research and Extension Practice: Towards a Theoretical Framework. In *Rural People’s Knowledge, Agricultural Research and Extension Practice*. (pp. 1–20). Intermediate Technology Publications.
- Secretaría Técnica Planifica Ecuador. (2019). *Lineamientos para la articulación entre el Plan de Desarrollo y Ordenamiento Territorial con la Agenda 2030 y los Objetivos de Desarrollo Sostenible ODS*. Secretaría Técnica Planifica Ecuador. <https://www.planificacion.gob.ec/wp-content/uploads/downloads/2019/09/Caja-de-herramientas-ODS-V6.pdf>
- Selibas, D. (2022, April 11). *Ecuador's Pastaza province, Indigenous groups collaborate on forest conservation*. Mongabay Environmental News. <https://news.mongabay.com/2022/04/ecuadors-pastaza-province-indigenous-groups-collaborate-on-forest-conservation/>
- Staggenborg, S., & Ogrodnik, C. (2015). New environmentalism and Transition Pittsburgh. *Environmental Politics*, 24(5), 723–741. <https://doi.org/10.1080/09644016.2015.1027059>
- Sun, B., & Baker, M. (2021). Multilevel governance framework for low-carbon development in urban China: A case study of Hongqiao Business District, Shanghai. *Cities*, 119, 103405. <https://doi.org/10.1016/j.cities.2021.103405>
- UN Secretary-General. (2014). *The road to dignity by 2030: Ending poverty, transforming all lives and protecting the planet* : <https://digitallibrary.un.org/record/785641>
- UNCTAD. (2015). *Addis Ababa Action Agenda of the Third International Conference on Financing for Development* (p. 37). United Nations Conference on Trade and Development. [https://unctad.org/system/files/official-document/ares69d313\\_en.pdf](https://unctad.org/system/files/official-document/ares69d313_en.pdf)
- UNEP. (2007). *Decisions adopted by the Governing Council/Global Ministerial Environment Forum at its twenty-fourth session* (pp. 7–12). United Nations Environment Programme. [https://www.iaa.cnr.it/wp-content/uploads/2016/02/gc24\\_decisions.pdf](https://www.iaa.cnr.it/wp-content/uploads/2016/02/gc24_decisions.pdf)
- UNEP. (2013). *Emissions Gap Report 2013*. United Nations Environment Programme. <http://www.unep.org/resources/emissions-gap-report-2013>
- UNEP. (2019). *PROAmazonia: Utilizing Forest Conservation and Sustainable Production Practices to Address Climate Change and Strengthen Local Livelihoods in Ecuador*. <https://wedocs.unep.org/xmlui/handle/20.500.11822/28897>
- UNFCCC. (2015). *Adoption of the Paris Agreement, 21st Conference of the Parties*. United Nations Climate Change. [https://unfccc.int/sites/default/files/resource/parisagreement\\_publication.pdf](https://unfccc.int/sites/default/files/resource/parisagreement_publication.pdf)
- UNFCCC. (2019). *FCCC/CP/2019/13/Add.1. Madrid, Spain: United Nations Framework Convention on Climate Change. Decision 1/CP.25, clause 29*. [https://unfccc.int/sites/default/files/resource/cp2019\\_13a01\\_adv.pdf](https://unfccc.int/sites/default/files/resource/cp2019_13a01_adv.pdf)
- UNFCCC. (2022a). *Global Climate Action Portal – United Nations Climate Change*. [https://climateaction.unfccc.int/?coopinitid=94&gclid=Cj0KCQjw7KqZBhCBARIsAI-fTKIxs6AnWVcK\\_C8-mC0Z29vgPyc21pte5UazPDOsFg8-waTLE4--2saAq0tEALw\\_wcB](https://climateaction.unfccc.int/?coopinitid=94&gclid=Cj0KCQjw7KqZBhCBARIsAI-fTKIxs6AnWVcK_C8-mC0Z29vgPyc21pte5UazPDOsFg8-waTLE4--2saAq0tEALw_wcB)
- UNFCCC. (2021b). *Human Settlements – Vision and Summary. Climate Action Pathways*. United Nations Climate Change, Global Climate Action, Marrakech Partnership. [https://unfccc.int/sites/default/files/resource/HS\\_Vision%26Summary\\_2.1\\_0.pdf](https://unfccc.int/sites/default/files/resource/HS_Vision%26Summary_2.1_0.pdf)
- UNFCCC. (2021a). *Land Use – Vision and Summary. Climate Action Pathways*. United Nations Climate Change, Global Climate Action, Marrakech Partnership. [https://unfccc.int/sites/default/files/resource/Vision%26Summary\\_Landuse.pdf](https://unfccc.int/sites/default/files/resource/Vision%26Summary_Landuse.pdf)

- van Asselt, H., & Zelli, F. (2018). International Governance. In A. Jordan, D. Huitema, H. van Asselt, & J. Forster (Eds.), *Governing Climate Change: Polycentricity in Action?* (pp. 29–46). Cambridge University Press. <https://doi.org/10.1017/9781108284646.003>
- Van den Bosch, S., & Rotmans, J. (2008). *Deepening, Broadening and Scaling up: A Framework for Steering Transition Experiments*. Knowledge Centre for Sustainable System Innovations and Transitions (KCT). [https://repub.eur.nl/pub/15812/KCT\\_transitieboekje\\_02.pdf](https://repub.eur.nl/pub/15812/KCT_transitieboekje_02.pdf)
- Verkerk, J., Teisman, G., & van Buuren, A. (2015). Synchronising climate adaptation processes in a multilevel governance setting: Exploring synchronisation of governance levels in the Dutch Delta. *Policy and Politics*, 43(4), 579–596. <https://doi.org/10.1332/030557312X655909>
- Verschuren, P., & Doorewaard, H. (2010). *Designing a research project* (M. J. Mellion, Ed.; Second edition). Eleven International Publishing.
- Watts, N., Adger, W. N., Agnolucci, P., Blackstock, J., Byass, P., Cai, W., Chaytor, S., Colbourn, T., Collins, M., Cooper, A., Cox, P. M., Depledge, J., Drummond, P., Ekins, P., Galaz, V., Grace, D., Graham, H., Grubb, M., Haines, A., ... Costello, A. (2015). Health and climate change: Policy responses to protect public health. *The Lancet*, 386(10006), 1861–1914. [https://doi.org/10.1016/S0140-6736\(15\)60854-6](https://doi.org/10.1016/S0140-6736(15)60854-6)
- Weischer, L., Morgan, J., & Patel, M. (2012). Climate Clubs: Can Small Groups of Countries make a Big Difference in Addressing Climate Change? *Review of European Community & International Environmental Law*, 21(3), 177–192. <https://doi.org/10.1111/reel.12007>
- Westley, F., Olsson, P., Folke, C., Homer-Dixon, T., Vredenburg, H., Lorbach, D., Thompson, J., Nilsson, M., Lambin, E., Sendzimir, J., Banerjee, B., Galaz, V., & van der Leeuw, S. (2011). Tipping toward sustainability: Emerging pathways of transformation. *Ambio*, 40(7), 762–780. <https://doi.org/10.1007/s13280-011-0186-9>
- WHO. (2021). *Mercury and Human Health*. World Health Organization Regional Office for Europe. <https://apps.who.int/iris/bitstream/handle/10665/345443/9789289055888-eng.pdf>
- Widerberg, O. E., Pattberg, P. H., & Kristensen, K. E. G. (2016). *Mapping the Institutional Architecture of Global Climate Change Governance* (Vol. 2). Institute for Environmental Studies/IVM.
- Widerberg, O., & Stripple, J. (2016). The expanding field of cooperative initiatives for decarbonization: A review of five databases. *WIREs Climate Change*, 7(4), 486–500. <https://doi.org/10.1002/wcc.396>
- Yazan, B. (2015). Three Approaches to Case Study Methods in Education: Yin, Merriam, and Stake. *The Qualitative Report*, 20(2), 134–152. <https://doi.org/10.46743/2160-3715/2015.2102>
- Yi, H., Huang, C., Chen, T., Xu, X., & Liu, W. (2019). Multilevel Environmental Governance: Vertical and Horizontal Influences in Local Policy Networks. *Sustainability*, 11(8), Article 8. <https://doi.org/10.3390/su11082390>
- Yin, R. K. (1994). *Case Study Research Design and Methods: Applied Social Research and Methods Series*, (2nd ed.). SAGE Publications Ltd.
- Yin, R. K. (2009). *Case Study Research: Design and Methods*. SAGE Publications Ltd.
- Young, O. R. (2002). *The Institutional Dimensions of Environmental Change: Fit, Interplay, and Scale*. <https://doi.org/10.7551/mitpress/3807.001.0001>

## Appendix & annex

### Appendix I: ICIs requirements for participation

*Set of questions included in the 2022 UNFCCC GCAP ICI Data Collection Survey that I have formulated for the analysis of this research (results are shown in Figure 9 of this research).*

[...]

The following questions relate to the question above on participation criteria applied by the initiative.

The initiative **REQUIRES** the participants to...

- 1) Sign a declaration to support the initiative's goals/targets
- 2) Implement changes within the participant's organization
- 3) Contribute financially to the initiative
- 4) Share knowledge with other participants in the initiative
- 5) Participate in regular (e.g., annual) meetings
- 6) Participate in goals setting and decision making of the initiative
- 7) Have staff that is dedicated to implement the goals set by the initiative
- 8) Report back to the initiative about progress
- 9) Make use of funding provided by the initiative, or facilitated through the initiative
- 10) Are there any other requirements that participants in your initiative must meet?  
Please describe
- 11) Will participants who do not meet requirements for participation as indicated above, be removed from your list of participants/partners?



**Appendix II: ICIs number of participants**  
*Excerpt: Results of the 2022 UNFCCC GCAP ICI Data Collection Survey on ICIs number of participants.*

N/A= not answered

ICI Name	2015	2016	2017	2018	2019	2020	2021	2022
AFOLU 2040 Regional Initiative for Central America and the Dominican Republic (AFOLU 2040)					8	18	27	29
Ocean Risk and Resilience Action Alliance (ORRAA)					18	33	44	58
Climate Ambition Alliance: Net Zero 2050					134	135	136	136
Zero Carbon Buildings for All / Zero Carbon Buildings Accelerator					21	21	23	40
Mission Efficiency					45	77	80	80
Climate Investment Platform (CIP)					4	260	300	300
Risk-informed Early Action Partnership (REAP)					38	41	60	70
InsuResilience Global Partnership (IGP)			39	57	74	88	107	114
Coalition for Sustainable Energy Access (CSEA)					18	67	67	71
Climate Change Impacts on Cultural and Natural Heritage (CCICH)						52	93	94
Climate Security Mechanism (CSM)				3	3	3	4	4
Getting to Zero Coalition (GtZ Coalition)					112	165	184	206
Banking Environment Initiative (BEI)	10	11	11	11	9	8	9	8
Global Research Alliance on Agricultural Greenhouse Gases	53	60	62	67	78	87	89	93

Global Plastic Action Partnership						540	881	
Playing for the Planet				19	N/A	N/A	43	
Sustainable Solutions Oceans Opportunities & Small Islands States (SOS-IS)	11	12	N/A	N/A		13	13	
Global Partnership on Forest and Landscape Restoration (GPFLR)							35	
The Climate Collaborative	147	325	469	687	732	768		
African Forest landscape Restoration (AFR100)			27	30	31	32		
Climate and Land Use Alliance (CLUA)	6	6	6	6	6	6	6	
NDC Partnership	43	80	116	163	186	201	205	
Making Cities Resilient (MCR2030)						750	1165	
Nature-Based Earth (NBE)			2	3	4	4		
Sustainable Rice Landscapes Initiative							6	
Rally for Rivers	29379	41998	52300	64593	77639	107639	125000	125000
Tech Zero						222	320	
UN-Convened Net Zero Banking Alliance						43	115	
Glasgow Declaration on Climate Action in Tourism						302	656	
Caring for Climate	451	459	468	469	469	469	477	478
Global Alliance for Buildings and Construction (GlobalABC)	79		102	119	130	154	195	246
MobiliseYourCity Partnership	0	15	55	66	87	92	97	97
Airport Carbon Accreditation	156	189	237	274	288	333	357	409
Public Transport Declaration on Climate Leadership (UITP)	1400	N/A	N/A	N/A	N/A	N/A	N/A	1900

R4 Rural Resilience Initiative	19	36	42	53	56	76	94	104
Building Efficiency Accelerator	44	N/A	N/A	81	N/A	121	N/A	121
Under2 Coalition						220	260	278
WWF Climate Business Network	17	N/A	N/A	N/A	13	12	19	26
Climate Action 100+			238	320	423	550	640	727
Mainstreaming Climate in Financial Institutions	26	29	37	42	44	51	53	53
Navigating a Changing Climate	5	17	26	49	49	64	66	67
Assessing low-Carbon Transition (ACT)	23	34	44	69	175	278	425	536
Climate Neutral Now	6	23	37	50	239	475	510	800
SUNx Malta Climate Friendly Travel Registry						5	31	97
EV100			12	28	57	89	120	122
PROAmazonia			6	10	14	42	48	56

**Appendix III: ICIs general participation criteria**  
*Excerpt: Results of the 2022 UNFCCC GCAP ICI Data Collection Survey on ICIs general participation criteria.*

N/A= not answered

ICI Name	Criteria	Does the ICI remove participants from the membership list?
AFOLU 2040 Regional Initiative for Central America and the Dominican Republic (AFOLU 2040)	The 8 countries of the SICA region have a direct and continuous participation, since their mitigation and adaptation activities in environment and agriculture will be reflected in the national results of sustainable agriculture and reforestation that will help us reach the regional goal of the AFOLU 2040 Initiative. The main objective of the participation of the cooperating agencies is to provide technical advice on the work carried out and to support, if possible, with financial assistance in the different activities to be developed in the AFOLU Initiative. These cooperating agencies must have areas of work that are connected to one of the five components of the Initiative.	No, we do not remove participants/partners from our list due to in compliance
Ocean Risk and Resilience Action Alliance (ORRAA)	Organizations seeking membership with the Alliance should meet the following criteria:  1. Be active in the areas of ocean risk, resilience, nature-based solutions, sustainability, finance, investment, or fields closely related to the sustainable blue economy.  2. Be aligned with ORRAA’s strategic vision to drive investment into coastal and marine natural capital by pioneering innovative finance and insurance products to mitigate and reduce ocean risk in vulnerable regions and communities.  3. Support net-zero action through ongoing work and/or commitments to robust science-based targets to reach net-zero no later than 2050 in line with the criteria of the UN’s Race to Zero campaign  4. For private sector members, work to adopt corporate ESG standards and disclosures that align with the recommendations of the Task Force on Climate-related Financial Disclosures, the UN’s Blue Economy Finance Principles and support the #BackBlue Ocean Finance Commitment.  5. Engage in work that supports ORRAA’s mission.	Yes, after a grace period
Climate Ambition Alliance: Net Zero 2050	Parties to the Paris Agreement with a commitment to any one of the targets of the alliance with the ultimate goal of achieving carbon neutrality by 2050.	N/A
Zero Carbon Buildings for All / Zero Carbon Buildings Accelerator	National governments and subnational governments commit to all new buildings being net zero carbon by 2030 and all buildings being net zero carbon by 2050.	N/A

<p>Mission Efficiency</p>	<p>Mission Efficiency is bringing together governments, organizations and initiatives that are able to share actions, commitments or goals on energy efficiency. This sharing is done through the premise that they are pledging support to the common mission that we all have to support progress on energy efficiency - but with sharing specific actions that they are already working on to support progress, or commitments of what they are willing to do moving forward or if they cannot commit, to share the goals of what they would like to do on energy efficiency if the right support was available to them.</p>	<p>Yes, after a grace period</p>
<p>Climate Investment Platform (CIP)</p>	<p>The initial start-up phase, particularly the first 9 months of 2020, have been focusing on learning-by-doing, real-time adjustments, and making informed recommendations on rapidly and effectively taking CIP to scale. CIP partners have been building on their existing systems, programmatic activities, and capabilities to deliver impact on the ground, demonstrate scalable approaches, and quickly move when countries have expressed the need for assistance. The CIP has in particular worked on assisting countries with their green recovery during COVID-19 pandemic and to provide virtual support to developing countries with an emphasis on enhancing NDCs in the area of clean energy, delivering reliable and affordable energy access, enhancing resilience to climate change, and enabling the low-carbon energy transition.</p> <p>The CIP has been engaging and supporting countries such as Sudan, Colombia, Sao Tome e Principe, Vanuatu, Comoros and Côte d'Ivoire with elements such as development Following a first CIP event with the Group of Friends of Sustainable Energy in May, Denmark hosted a second CIP event on September 16 with ministers from Denmark, Sudan, Comoros, and Sao Tome e Principe to engage with the Energy Transition Coalition and its 125 participants. In September CIP launched a newsletter, complementing its website and Twitter platform, to expand its network and reach.</p>	<p>N/A</p>
<p>Risk-informed Early Action Partnership (REAP)</p>	<p>Any country, organisation or initiative may join the Partnership, if it shares REAP's ambition for making 1 billion people safer from disasters.</p> <p>REAP asks all prospective members to identify existing actions or commitments that will contribute towards achieving one or more of REAP's targets. These may be either directly through its own activities, or indirectly by supporting the work of REAP and its Partners.</p> <p>Prospective Partners are invited to write a letter of interest based on a template to the REAP Secretariat confirming their desire to join REAP as a Partner, and outlining their actions and commitments that contribute to the achievement of REAP's targets.</p>	<p>No, we do not remove participants/partners from our list due to non-compliance</p>
<p>InsuResilience Global Partnership (IGP)</p>	<p>The InsuResilience Global Partnership is inclusive and open to stakeholders aligned to the Vision 2025 of the Partnership. Countries and organizations that share the vision and contribute to the objectives of the Partnership can request membership. They need to endorse the Partnership's Concept Note. Membership is on a no fee basis.</p>	<p>No, we do not remove participants/partners from our list due to non-compliance</p>



<p>Coalition for Sustainable Energy Access (CSEA)</p>	<p>Criteria is based on whether the participants can provide funds or technical assistance for the Coalition's major activities.</p>	<p>No, we do not remove participants/partners from our list due to non-compliance</p>
<p>Climate Change Impacts on Cultural and Natural Heritage (CCICH)</p>	<p>Governments and stakeholders can participate by providing a letter of support. No specific commitments are undertaken. The Initiative is also supported by international organizations and NGOs. However, when we refer to members, we are referring only to states and their governments.</p>	<p>No, we do not remove participants/partners from our list due to non-compliance</p>
<p>Climate Security Mechanism (CSM)</p>	<p>The CSM was established in October 2018 as a joint initiative by DPPA, UNDP and UNEP. The integration of DPO into the CSM in December 2021 has further strengthened the Mechanism's ability to support stakeholders in some of the most vulnerable Member States and regions, including peacekeeping contexts where the Security Council has recognized the destabilizing effects of climate change.</p> <p>The CSM will continue to foster various forms of engagement and partnerships primarily through the informal interagency Community of Practice on Climate Security, which is open to all UN personnel with an interest in addressing climate-related security risks. The CoP is voluntary, UN-internal and working level, and as such all UN entities and colleagues are welcome to join.</p>	<p>N/A</p>
<p>Getting to Zero Coalition (GtZ Coalition)</p>	<p>Participation in the Getting to Zero Coalition requires that members adhere to the ambition and core principles of the Coalition.</p> <p>New members are by invitation from the Project Partners. Joining the Coalition is since September 2020 by invitation only, as the Coalition aim to work with its current member base to advance the transition towards shipping decarbonization. The Coalition frequently add new members as they see fit, by looking at organizations that can, for instance, fill knowledge-, geographical or industry gaps of the Coalition's member base.</p> <p>While a significant portion of the Coalition's members take an active part in the work of the Coalition, there is no formal obligation to actively engage.</p> <p>Members fall into four categories:</p> <ul style="list-style-type: none"> <li>- Signatories: Companies across the shipping value chain committed to the Coalition's ambition.</li> <li>- Supporters: NGOs, IGOs and other organizations committed to the Coalition's ambition.</li> <li>- Knowledge partners: Organizations with subject area expertise, providing research and technical expertise, usually in connection to one or more of the Coalition's workstreams.</li> <li>- Government endorsers: currently constituting 14 governments who show their support for the Coalition's ambition, some being actively engaged.</li> </ul>	<p>No, we do not remove participants/partners from our list due to non-compliance</p>

<p>Global Research Alliance on Agricultural Greenhouse Gases</p>	<p>Membership is open to any State represented by their competent authority (e.g. the nominated lead government department or agency). Participation in the GRA is on a voluntary basis, there is no cost to joining or annual membership fee. It is for each Member to determine the nature and extent of its participation in any GRA activities.</p> <p>The GRA Charter was signed by founding countries in Rome, Italy, on 24 June 2011, and sets out the framework for membership of the Alliance. A country's membership is confirmed by formally endorsing the Charter.</p> <p>Formal Partners of the GRA are invited to join the Alliance by the Member countries. Partner organisations have been identified for their expertise, scope of work and capacity to support efforts to reduce agricultural greenhouse gas emissions and increase carbon sequestration by improving the efficiency and productivity of agricultural systems.</p>	<p>No, we do not remove participants/partners from our list due to non-compliance</p>
<p>The Investor Agenda</p>	<p>The Investor Agenda does not have members or signatories.</p>	<p>N/A</p>
<p>Playing for the Planet</p>	<p>The Alliance is open for game companies</p>	<p>Yes, after a grace period</p>
<p>Global Partnership on Forest and Landscape Restoration (GPFLR)</p>	<p>The GPFLR welcomes the participation of organizations that represent a multiplicity of national-level actors. Membership is not open to individuals.</p> <p>There are no admission or membership fees. Members are expected to actively contribute to generating the added value of the Partnership. By joining the Partnership, members commit to support the FLR principles and ensure that they underpin their restoration efforts.</p> <p>Applications are received on a rolling basis via our website. The admission process is meant to be straightforward and quick. Prospective members fill out a short form providing information about their organizations, including how they plan to contribute to the Partnership. The latter is not required by governments.</p> <p>The application form will be reviewed by the Steering Committee for a first screening against the membership criteria. Applications that pass this review will be sent to the full membership for evaluation, and admission will occur if no objections within 14 days. The applicant will be notified of the decision after this period.</p>	<p>No, we do not remove participants/partners from our list due to non-compliance</p>
<p>The Climate Collaborative</p>	<p>While we don't have a formal definition of which type of companies can make commitments, we invite companies from the grocery industry with headquarters or operations in North America to make climate commitments. We work with companies of all sizes, but many tend to be small and medium-sized enterprises.</p>	<p>No, we do not remove participants/partners from our list due to non-compliance</p>

<p><b>African Forest landscape Restoration (AFR100)</b></p>	<p>Groups interested in becoming a technical or financial partner of the AFR100 should submit a formal written request to the AFR100 Secretariat, at the AUDA-NEPAD Agency Colleagues at the AFR100. Secretariat can provide a template for this request letter to interested parties. The AFR100 Secretariat conducts a screening of interested organizations to ensure alignment with AFR100 guiding principles and Voluntary Guidelines. Based on the results of this screening, the Secretariat makes recommendations to the AFR100 Management Team on a quarterly basis of which organizations should be accepted into the AFR100 partnership. Decisions will be made by majority vote. The quorum for a decision is half the membership plus one. The AFR100 Secretariat collects baseline institutional information from each new partner including: Organization's name and address, Individual focal point's name and contact details, Organization's anticipated contribution to the FLR agenda, Names of AFR100 partner countries where the partner has existing (or planned) cooperation with partner country governments to plan, coordinate, and implement. Countries wishing to join AFR100 must be one of the 55 African Union member states. Commit to restoring degraded forests and landscapes in the countries and detail the number of hectares to be restored in a letter if interest ; through the National Ministry of Environment, to the AFR100 Secretariat. Assign a a focal point to coordinate restoration activities in the country (at national level) and report to AFR100/ Secretariat and the initiatives partners</p>	<p>No, we do not remove participants/partners from our list due to incompliance</p>
<p><b>NDC Partnership</b></p>	<p>The NDC Partnership is open to countries, international institutions, and civil society organizations that are committed to ambitious implementation of Nationally Determined Contributions (NDCs) under the Paris Agreement and the 2030 Sustainable Development Goals.</p>	<p>Yes, after a grace period</p>
<p><b>Making Cities Resilient (MCR2030)</b></p>	<p>Reducing risk and building resilience is a journey. The MCR2030 programmatic approach is built around a three-stage 'resilience roadmap' that guides cities on how to improve resilience overtime. The resilience roadmap is flexible and iterative, cities can enter MCR2030 at any stage gaining access to a range of tools and technical advisory inputs delivered by different partners. Cities make commitments to demonstrate progress along the resilience roadmap.</p> <p>The three-stage journey includes:</p> <p>Stage A - Cities know better</p> <p>Stage B - Cities plan better</p> <p>Stage C - Cities implement better</p> <p>Cities can progress onto the next stage as their needs and commitments to MCR2030 evolve over time and as they reach the milestones, based on set criteria and pledged commitments. The goal of MCR2030 is to move cities to the end of Stage C, where they have mainstreamed DRR/resilience, and focus on monitoring and evaluation, to ensure they maintain the level of resilience achieved.</p>	<p>No, we do not remove participants/partners from our list due to incompliance</p>
<p><b>Rally for Rivers</b></p>	<p>Defined commitment required by participants - To plant and take care of the trees in their farmland.</p>	<p>N/A</p>

<p>Tech Zero</p>	<p>Any company, organisation, or business who defines themselves as a tech company, located anywhere in the world, may join.</p> <p>The only companies who cannot join are those who also work in or are associated with oil and gas, as per the UN Race to Zero criteria.</p>	<p>Yes, after a grace period</p>
<p>UN-Convened Net Zero Banking Alliance</p>	<p>Banks of any size or business model. Commitment statement must be signed by CEO or Chair.</p>	<p>Yes, after a grace period</p>
<p>Glasgow Declaration on Climate Action in Tourism</p>	<p>The Glasgow Declaration operates as a voluntary commitment which includes an annual progress monitoring mechanism. The Glasgow Declaration presents a sector-wide approach and therefore can be subscribed by all types of tourism stakeholders.</p> <p>Each signatory of the Glasgow Declaration commits to: Supporting the global goals of halving emissions by 2030 and reaching net zero as soon as possible before 2050; Delivering a climate action plan (or updating an existing plan) within 12 months from becoming a signatory and implementing them; Aligning their plans with five pathways: measure, decarbonize, regenerate, collaborate, finance; Report publicly on an annual basis on progress against targets and actions; Work in a collaborative spirit, share good practices and solutions, and disseminate information.</p>	<p>Yes, after a grace period</p>
<p>Caring for Climate</p>	<p>The initiative is open to companies in the UN Global Compact as well as non-business signatories.</p>	<p>No, we do not remove participants/partners from our list due to non-compliance</p>
<p>Global Alliance for Buildings and Construction (GlobalABC)</p>	<p>All interested parties can apply via our website <a href="https://globalabc.org/members/join-us">https://globalabc.org/members/join-us</a> and need to sign our common statement on taking climate action in buildings and construction. Applications are then checked against the following due diligence criteria: 1. Legal status &amp; governance; 2. Environmental awareness and reputational risk; 3. Technical Capacity (including ““Does the organization have relevant proven experience in Buildings?””; ““Has the organization managed activities worldwide / regional scope?”” etc., and; 4. Competition and conflict of interest with members. Common statement and due diligence form is shared with our Steering Committee who takes the ultimate decision.</p>	<p>No, we do not remove participants/partners from our list due to non-compliance</p>
<p>MobiliseYourCity Partnership</p>	<p>Member cities and countries sign a declaration.</p>	<p>No, we do not remove participants/partners from our list due to non-compliance</p>
<p>Airport Carbon Accreditation</p>	<p>All airports that are members of any of the ACI regions are eligible to participate in Airport Carbon Accreditation.</p>	<p>Yes, after a grace period</p>

<p>R4 Rural Resilience Initiative</p>	<p>Any country, local insurer and organization interested in supporting WFP's work on mainstreaming microinsurance as part of integrated risk management, where the enabling environments allows.</p> <p>Promoting strategic partnerships and selecting local insurers and technical service providers that recognize the need for local capacity building and ownership is a priority to ensure that the microinsurance schemes promoted under the initiative are sustainable at the mid and long-term.</p>	<p>No, we do not remove participants/partners from our list due to incompliance</p>
<p>Building Efficiency Accelerator</p>	<p>Cities sign formal commitments with the BEA to pursue the goal of doubling the rate of energy efficiency improvements in their building sector by 1) implementing a building efficiency policy in their jurisdiction, 2) implementing a demonstration project, and 3) tracking and reporting their progress.</p>	<p>No, we do not remove participants/partners from our list due to incompliance</p>
<p>Under2 Coalition</p>	<p>The Under2 Coalition brings together signatories and endorsers of the Under2 Memorandum of Understanding (MOU), a climate agreement for subnational governments. The 2021 Under2 MOU commits state and regional governments to achieve net zero emissions as a coalition by 2050 or earlier.</p> <p>Participants are state, regional and provincial governments around the world who are signatories of the Under2 MOU committing them to halving carbon by 2030 and achieving net zero emissions by 2050 as a whole, and individually as soon as possible.</p> <p>Endorsers are usually national governments who wish to support the Under2 Coalition's goals.</p>	<p>Yes, after a grace period</p>
<p>WWF Climate Business Network</p>	<p>Companies with a revenue of more than \$50M that are committed to or have set a science-based climate target.</p>	<p>Yes, after a grace period</p>
<p>Climate Action 100+</p>	<p>Climate Action 100+ is open to asset owners, asset managers and engagement service providers that are formally representing assets and that typically conduct engagements with companies. Prospective signatories also have to be members of one of the coordinating investor networks (i.e. AIGCC, Ceres, IGCC, IIGCC, or PRI) and need to be able to participate in engagements with focus companies.</p>	<p>No, we do not remove participants/partners from our list due to incompliance</p>
<p>Mainstreaming Climate in Financial Institutions</p>	<p>Financial Institutions become 'Supporting Institutions' by expressing their support for the initiative and acknowledging the guidance provided by its five voluntary Principles for Mainstreaming Climate Action within Financial Institutions.</p>	<p>No, we do not remove participants/partners from our list due to incompliance</p>
<p>Navigating a Changing Climate</p>	<p>PARTNERS in the initiative are international (membership) associations or similar organisations, with an emphasis on waterborne transport infrastructure and an interest in technical best practice.</p> <p>SUPPORTERS are bona fide waterborne transport infrastructure-related organisations that support the Navigating a Changing Climate objectives and are willing to help with dissemination and outreach.</p>	<p>Yes, after a grace period</p>



Assessing low-Carbon Transition (ACT)	Participants in methodology development and road-test comply with the Terms of References (available on demand). Companies assessed by consultancies with funding from ADEME (French Voluntary Program) comply with the funding contract agreement. Companies assessed by the World Benchmarking Alliance fit the keystone criteria which can be found on the WBA website. Consultancies using ACT tools comply with the ACT consultant user license (available on demand).	Yes, after a grace period
Climate Neutral Now	There are no limitations regarding participant types: any organization or company can join. The geographical coverage is global. The procedure involves sending a signed Pledge committing to measure and reduce GHG emissions, and optionally contribute, after which they have 1 calendar year to report back on their actions. Participants that do not report two consecutive years are excluded.	Yes, after a grace period
SUNx Malta Climate Friendly Travel Registry	<p>The Registry is open to all Travel &amp; Tourism companies and communities, whether or not they have created a 2050 Carbon Neutral Ambition yet. It covers transport, hospitality, travel service and infrastructure providers – from the smallest to the largest.</p> <p>Registrants have two years to benefit from the knowledge and support systems, as information in our innovation, strategy, learning and visibility Hubs, to develop their plans.</p> <p>Registrants already embarked on a 2050 Plan are able to simply incorporate details in the Registry, with little or no extra work and to cross reference any other mainstream Carbon Reduction initiatives in which they are involved.</p>	Yes, after a grace period
EV100	N/A	Yes, after a grace period
PROAmazonia	From the various analyses and studies carried out in the country, it can be concluded that there are various factors that have an impact on deforestation, either because they contribute to forest degradation (replaced by pastures or crops) or because they directly encourage deforestation for agricultural production, especially in the Amazon region. One of the criteria used by the cooperation initiative to integrate new strategic partners is to identify the capacities of these partners to provide technical assistance for the implementation of REDD+ measures and actions, as well as to provide co-financing. These partners can make monetary and non-monetary contributions to complement and enhance the implementation of REDD+ measures and actions, and the Ministries may grant them recognition for their efforts. Another criterion that is also taken into account is the geographical area of influence of the participants in order to establish synergies and work together with partners who are working in the same locations. Finally, the experience and knowledge of the issues addressed by the project is evaluated, as well as the operational capacity of these partners to execute budgets and actions directly in the territory.	No, we do not remove participants/partners from our list due to incompliance

## Appendix IV: Interviews

*Consent form and questionnaires for ICIs and local actors.*

# Study on the Incentives for Local Participation in Climate Action

A research project conducted by Gianmarco Diprima & supervised by Dr Sander Chan.

Affiliation partners: *German Institute of Development and Sustainability (IDOS) &*

*The Copernicus Institute of Sustainable Development, Utrecht University.*



Copernicus Institute of Sustainable Development

Title of the study: Participation in International Cooperative Initiatives (ICIs) – Incentivising and Enhancing Local Non-State Actors in Sustainable Transitions in the Global South.

## **How do International Cooperative Initiatives incentivise and enhance local non-state and subnational actors in the Global South to participate in collective climate action for sustainable transitions?**

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The final version of the information letter: 4th July 2022

## Consent Statement Form for the Participant

The practical aim of our study is to incentivise broader and effective participation in climate initiatives/partnerships, particularly by underrepresented groups, such as small enterprises and local civil society organisations.

The interview will approximately take an hour. In conducting our interview, we will observe anonymity if requested. With your permission, we might also record for note-taking purposes only. Notes will be kept confidential and stored on a password-protected computer. Excerpts from the interview may be included in a final report and dissertation and later peer-reviewed publications. A separate release form would be sent to you if biographical data were relevant to a publication at a subsequent date.

Any personal information that could reasonably identify you will be removed or changed before files are shared with other researchers or results are made public. The principal investigator will keep a link that identifies you to your coded information. Still, this link will be kept secure and available only to the principal investigator or selected members of the research team. This information will be kept for the length of the study and a fixed period afterwards (10 years). After that time, it will be destroyed or de-identified, meaning we will replace your identifying information with a code that does not directly identify you. Any information that can identify you will remain confidential. Other genuine researchers may request access to de-identified data in the future. Access will only be granted if they agree to preserve the confidentiality of the information as requested in this form. Their access will also require approval from the original research team. If you withdraw from the study, you do not have to state why. Please do inform the researcher about your decision. All data collected until that moment will be used for current and future research.

Should you have questions, please do not hesitate to reach us (Gianmarco Diprima; Tel.: +31 687 50 93 07; [g.diprima@students.uu.nl](mailto:g.diprima@students.uu.nl))

Contact details for official complaints and GDPR matters: [klachtenfunctionaris-fetcsocwet@uu.nl](mailto:klachtenfunctionaris-fetcsocwet@uu.nl) / [privacy@uu.nl](mailto:privacy@uu.nl) (University of Utrecht Data Protection Officer).

- I agree that research data gathered for the study may be published or made available, provided my name or other identifying information is not used.
- I understand that the research data may be shared with others without any personal information that could identify me (not linked to me).

Date: .....

Name and signature of the participant: .....

## Questions for ICI's representatives

### A - Introductory questions

1. Can you tell me about the initiative and how important it is for the initiative to have (or not to have) a large number of participants?
2. What are the initiative's goals for becoming low-carbon and climate-resilient?

### B - Questions on participants' expectation

*Does your initiative requires the participants to...*

1. Sign a declaration to support the initiative's goals/targets
2. Implement changes within the participant's organisation
3. Contribute financially to the initiative
4. Share knowledge with other participants in the initiative
5. Participate in regular (e.g. annual) meetings
6. Participate in goals setting and decision-making of the initiative
7. Have staff that is dedicated to implementing the goals set by the initiative
8. Report back to the initiative about progress
9. Make use of funding provided by the initiative, or facilitated through the initiative
10. Are there any other requirements that participants in your initiative must meet?

### C - Questions about participants' engagement

1. How do you seek to engage new participants and whom do you target?
2. Is there a team (personnel) dedicated to engaging new participants?
3. How do you make sure participants actively participate and contribute to the initiative's goals?
4. Do you have any goals on who and how many new participants you hope to engage in the next two to five years?

### D - Question about participants' enhancement

1. How does your initiative promote and support its participants?
2. Do you coordinate participants' activities, and how?
3. Does the initiative play any role in (providing...):
  - a. Training (individual & organisational level)
  - b. Provision of funding
  - c. Institutional capacity building
  - d. Platforms for connection
  - e. Visibility
  - f. Resources, (sharing of) knowledge & experiences
  - g. Contracts for new projects
  - h. Consultancy/ advising
4. Can you tell me more about your initiative's strategy to provide such service(s)?
5. How do you think your initiative could further develop to better support participants?

### E - Concluding questions

1. What do you think are the benefits of joining your initiative?
2. Are there any types of participants you would like to see more? And why do you think the initiative lacks these actors?
3. What is the most important thing(s) you learned from engaging different participants?

## Questions for the ICIs' participants

### A - Introductory questions

1. Can you tell me about your organisation and goals for becoming low-carbon and climate-resilient?
2. Why is your organisation a partner in X initiative?

### B - Questions on the initiative's expectations for participants

What did your organisation have to do to become a partner in the initiative?

1. Sign a declaration to support the initiative's goals/targets
2. Implement changes within the organisation
3. Contribute financially to the initiative
4. Share knowledge with other participants in the initiative
5. Participate in regular (e.g., annual) meetings
6. Participate in goals setting and decision-making of the initiative
7. Have staff that is dedicated to implementing the goals set by the initiative
8. Report back to the initiative about progress
9. Make use of funding provided by the initiative or facilitated through the initiative.
10. Are there any other requirements that participants in your initiative must meet?

### C - Questions about participation

1. How did you learn about the initiative?
2. Was a team (personnel) dedicated to joining the initiative?
3. Do you actively participate and contribute to the initiative's activities and goals?
4. Are you involved in the decision-making processes of the initiative?

### D - Question about initiative support

1. How does your organisation benefit from being a participant in this initiative?
2. How did this help?
3. How can this initiative further develop and improve to support its participants?

### E- Concluding questions

1. What has your organisation gained from interacting with other participants in the initiative?
2. What could motivate your organisation to remain an active participant in the initiative in the next two to five years?



**Appendix V: Coding with Nvivo**  
*File and code lists from the NVivo project: "Study on ICIs incentive and enhancement modalities for climate action in the Global South".*

Files

File name	Codes	References	Created on	Created by	Modified on	Modified by
Access Agriculture - GFAR_otter_ai	7	14	25 Oct 2022 at 15:21:30	GD	25 Oct 2022 at 15:21:30	GD
Agboost tech consultancy - GFAR - PART 1_otter_ai	4	6	25 Oct 2022 at 15:21:30	GD	25 Oct 2022 at 15:21:30	GD
Agboost tech consultancy - GFAR - PART 2_otter_ai	3	4	25 Oct 2022 at 15:21:30	GD	25 Oct 2022 at 15:21:30	GD
GFAR - PART 1_otter_ai	15	22	25 Oct 2022 at 15:21:30	GD	25 Oct 2022 at 15:21:30	GD
GFAR - PART 2_otter_ai	7	15	25 Oct 2022 at 15:21:30	GD	25 Oct 2022 at 15:21:30	GD
GFAR - Theory Of Change	2	2	6 Dec 2022 at 12:38:52	GD	6 Dec 2022 at 12:38:52	GD
GFAR Brief_short version	2	3	21 Nov 2022 at 13:55:24	GD	21 Nov 2022 at 13:55:24	GD
GROUNDWORK - PART 1_otter_ai	16	35	25 Oct 2022 at 15:21:30	GD	4 Nov 2022 at 17:03:58	GD
GROUNDWORK - PART 2_otter_ai	3	7	25 Oct 2022 at 15:21:30	GD	4 Nov 2022 at 17:27:10	GD
HCWH - Buddhist Dalin Tzuchi General Hospital Taiwan - PART 1_otter_ai	7	18	25 Oct 2022 at 15:21:30	GD	4 Nov 2022 at 16:12:00	GD
Health Care Without Harm Southeast Asia - PART 1_otter_ai	17	34	25 Oct 2022 at 15:21:30	GD	25 Oct 2022 at 15:21:30	GD

Health Care Without Harm Southeast Asia - PART 2_otter_ai	10	28	25 Oct 2022 at 15:21:30	GD	25 Oct 2022 at 15:21:30	GD
Pholosong Hospital - Groundwork_otter_ai	11	36	25 Oct 2022 at 15:21:30	GD	4 Nov 2022 at 18:08:33	GD
PROAmazonia - PART 2_otter_ai	1	2	25 Oct 2022 at 15:21:30	GD	25 Oct 2022 at 15:21:30	GD
PROAmazonia - PART 1_otter_ai	17	33	25 Oct 2022 at 15:21:30	GD	25 Oct 2022 at 15:21:30	GD
Universidad Técnica Particular de Loja (UTPL) - PROAMAZONIA - PART 1_otter_ai	5	11	25 Oct 2022 at 15:21:30	GD	3 Nov 2022 at 18:03:06	GD
Universidad Técnica Particular de Loja (UTPL) - PROAMAZONIA - PART 2_otter_ai	6	14	25 Oct 2022 at 15:21:30	GD	3 Nov 2022 at 18:31:59	GD
Updated Selected criteria for assessing quality of research partnerships with spider diagram 19.04	0	0	21 Nov 2022 at 13:55:24	GD	21 Nov 2022 at 13:55:24	GD
Working with GFAR - engagement principles - version 1	11	30	21 Nov 2022 at 13:55:24	GD	21 Nov 2022 at 13:55:24	GD

Codes

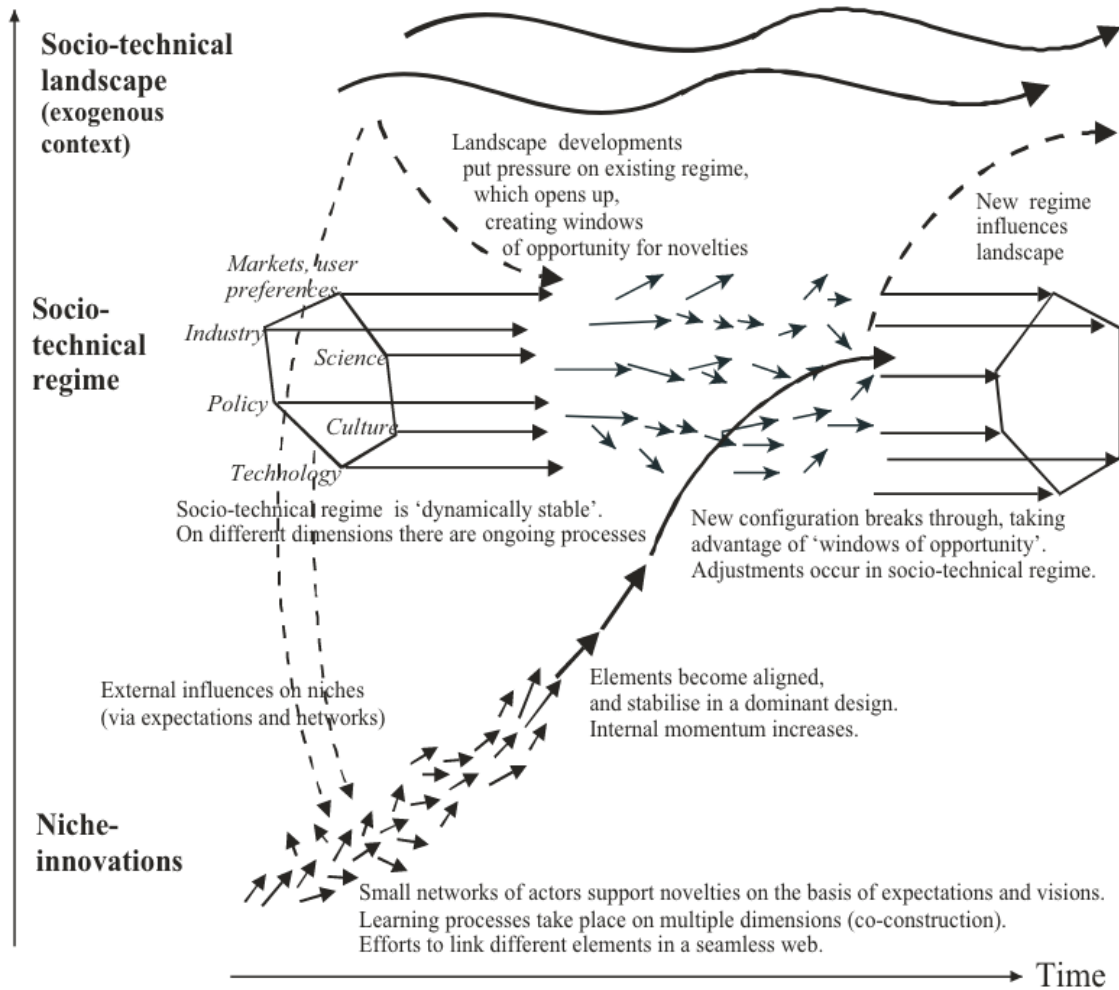
Name	Description	Files	References
Barriers to participation		8	18
Benefits (ICIs)		8	61
Constant openness to dialogue		5	7
Institutional capacity		7	9
Knowledge sharing platforms		6	12

Name	Description	Files	References
Local replication capability		5	7
Resource allocation		8	15
Trainings and advising at the local level		6	11
Benefits (Participants)		10	45
Constant openness to dialogue		3	5
Institutional capacity		5	8
Knowledge sharing platforms		6	13
Local replication capability		6	8
Resource allocation		4	7
Trainings and advising at the local level		2	4
Engagement		1	1
Engagement with existing participants		5	13
Newsletters & social media		1	1
On-site conferences		1	1
On-site roundtables		1	1
Online hubs		2	2
Online meetings		2	2
Engagement with new participants		3	3
Network word of mouth		1	1
On-site workshops & activities		3	3
Online hubs		1	1
Online seminars & workshops		2	2

Name	Description	Files	References
Registration form		1	2
Voluntary registration of interest by members		3	3
Future perspectives on incentives & enhancement		7	13
General information		9	17
ICI capacity for engagement		5	8
Information on participants		6	9

## Annex I: Original MLP framework

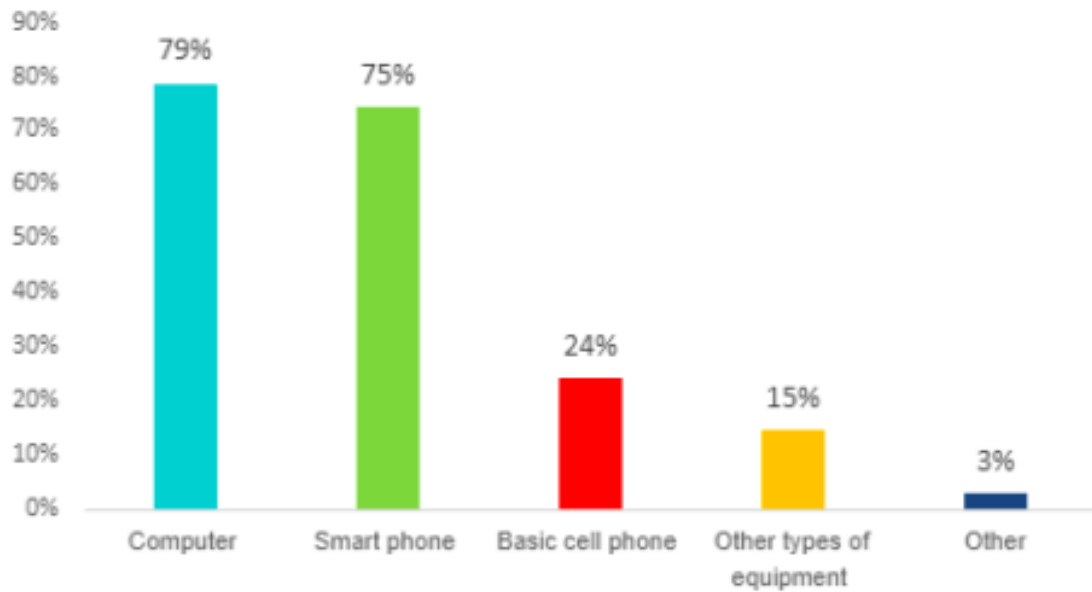
The original multi-level perspective on socio-technological transitions framework from Geels (2002; 2011).



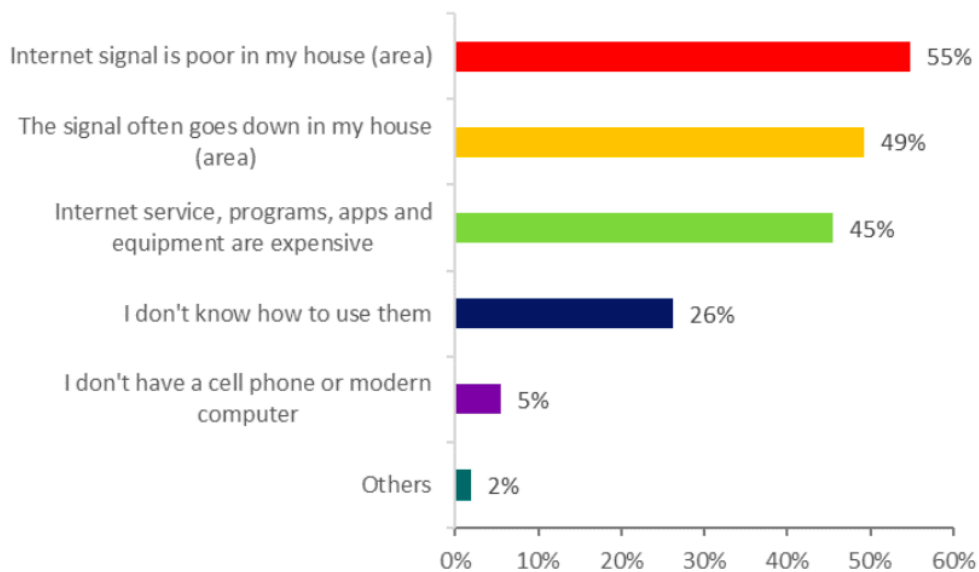
## Annex II: Insights into digital agriculture

*Excerpt: Key results from “Current Scenario and Needs for the Development of an Inclusive Digital Agriculture Program for Latin America and the Caribbean” (GFAR et al., 2022).*

### 1) Devices used by the respondent.

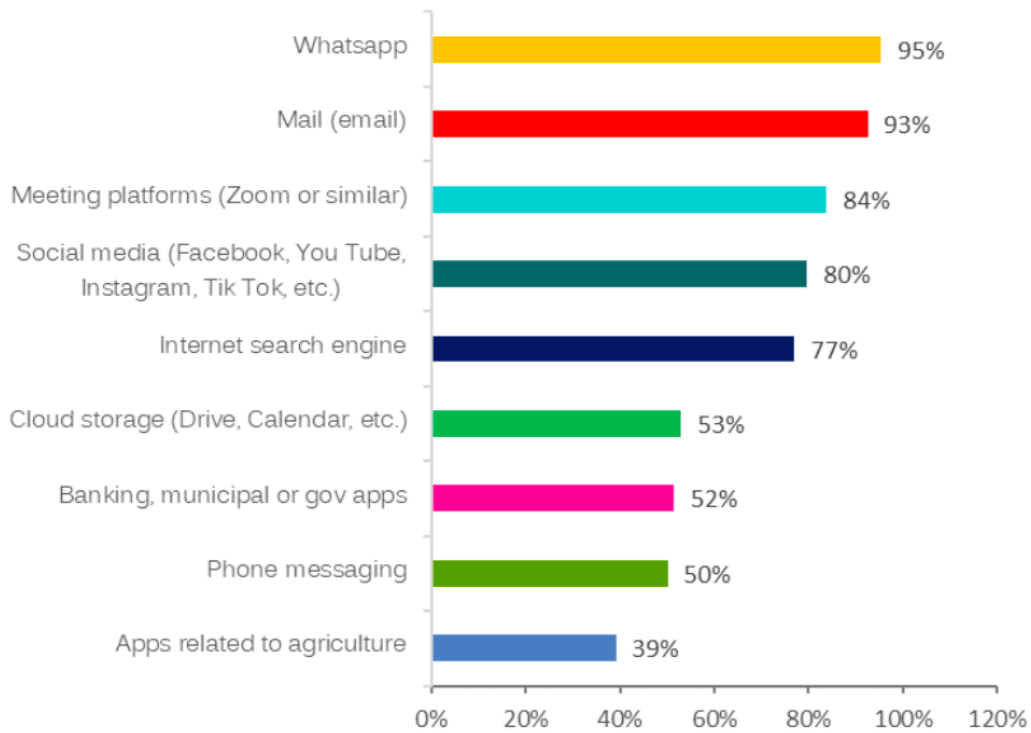


### 2) Difficulties in accessing the Internet.

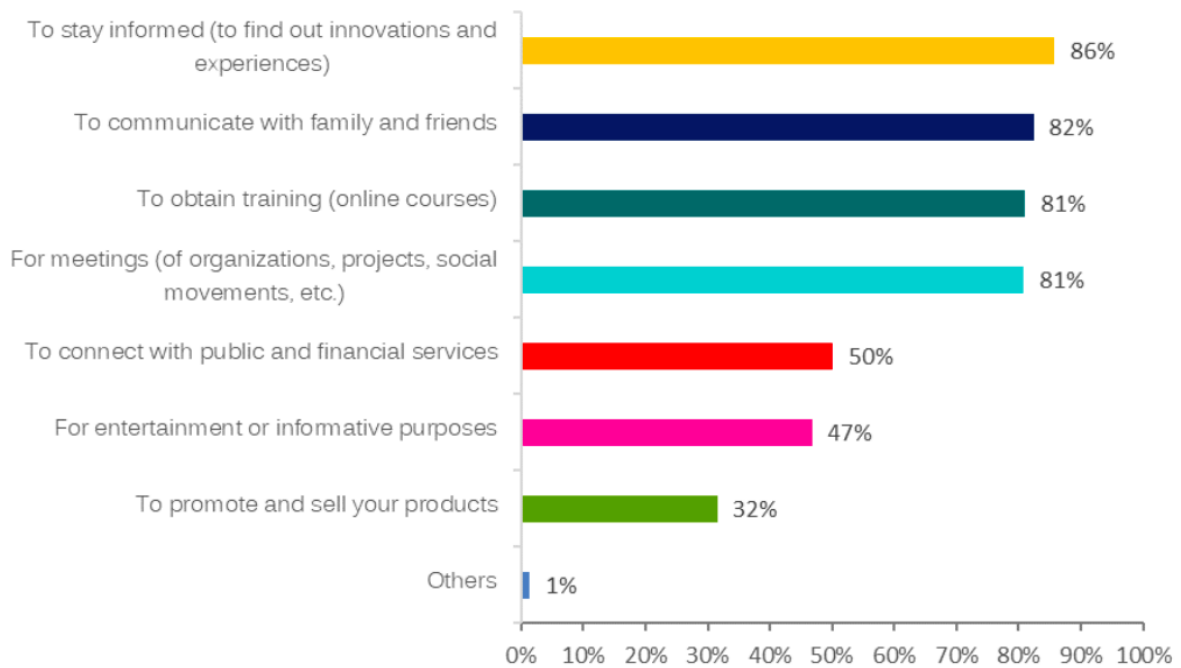


### 3) Digital tools used by the persons surveyed.

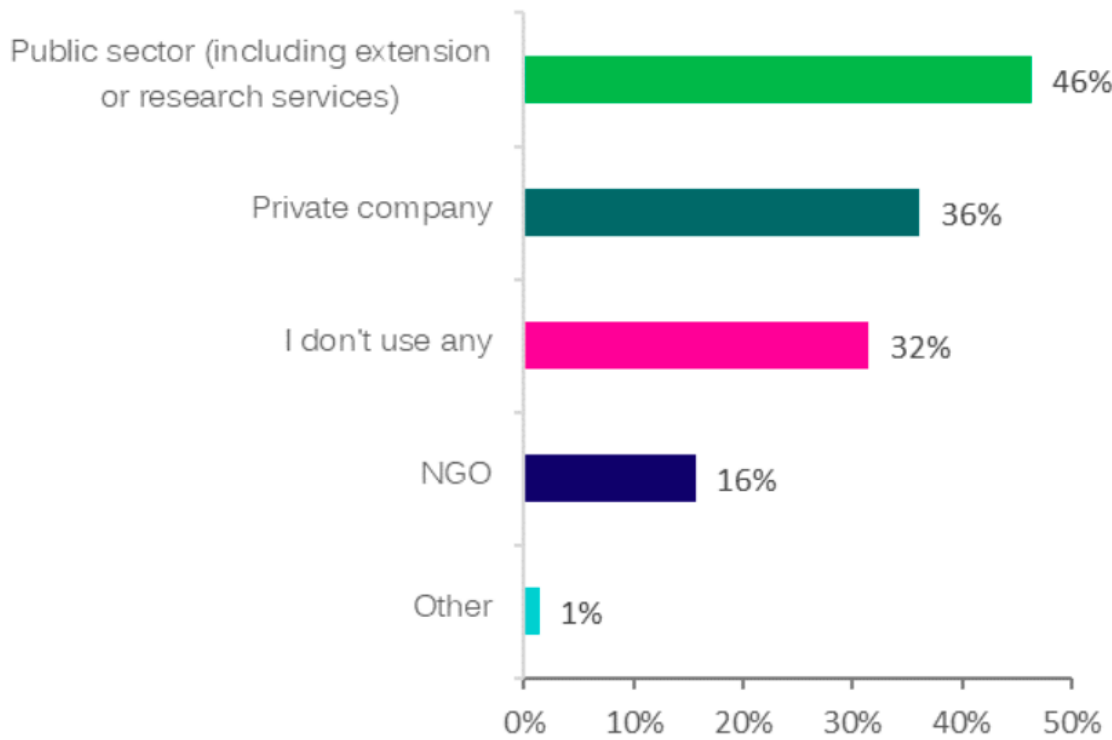




4) *General uses of digital technologies.*



5) *Providers of agricultural advisory services with digital technologies.*



6) *Current uses of digital technologies.*

