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The SDGs as an Integrative Framework to Assess Coherence of Transnational Multistakeholder Partnerships for SIDS

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Abstract

Research in global climate governance recognizes the importance of transnational multistakeholder partnerships (often termed cooperative initiatives) in driving climate action from global to subnational levels. Large N studies of climate partnerships have shed light on cooperative governance's inclusiveness, thematic focus, geographic scope, degree of institutionalization, and contribution to the attainment of climate goals. However, a neglected aspect of partnership performance concerns its coherence, i.e., the extent to which portfolios of partnerships contribute to the balanced implementation of climate goals across the economic, social, and environmental dimensions of sustainable development. Climate action is a complex transboundary problem that spans several sectors and scales and increasingly, scholarship is mapping these linkages across issue areas and levels. Drawing on this evidence base, this paper conducts a large N study of 49 climate-related partnerships in Pacific SIDS (PSIDS) to assess whether and to what extent these partnerships taken together contribute to the balanced implementation of climate action in PSIDS. Using the Sustainable Development Goals (SDGs) as a framework to assess coherence and introducing a measure of partnership's Output-SDG-Fit, results indicate that these partnerships tend to cluster their activities around a narrow set of nexuses with the climate-ocean nexus receiving relatively many partnerships and the climate-development nexus highly underrepresented. The findings support the view that transnational cooperative climate governance in Pacific SIDS is incoherent and that a lack of development finance for many SIDS may be driving incoherence in PSIDS partnerships. The paper discusses the practical implications of this finding for the orchestration of more coherent portfolios of partnerships.

Keywords: Climate Governance; Transnational Multi-stakeholder Partnerships; Effectiveness, Coherence, Sectoral Linkages; SDGs, Pacific SIDS.

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Introduction

Global climate governance is undergoing a transformative shift (Chan et al. 2021, Pattberg et al. 2018, Westman & Castan Broto 2018). Following years of stalemate in international climate negotiations, the Copenhagen Climate Conference ushered in a new era of voluntary governance characterized by greater involvement of all types of actors (Hoffmann 2011, Bulkeley et al. 2012), the proliferation of non-state and subnational actions (Widerberg & Stripple 2016), and growing linkages between institutions and actors (Falkner 2016). An abiding overarching concern of this emerging multi-actor multi-level governance system is its performance. The predominant focus thus far has framed effectiveness in terms of goal attainment, e.g., bridging the global ambition gap or filling functional gaps (Chan, Iacobuta & Hägele 2020, Blok et al. 2012, UNEP 2011). Although evidence is sparse and scattered at this early stage, research has sought to understand to what extent voluntary partnership commitments deliver relevant output (Chan et al. 2018), their aggregate impact on the global emissions gap (Lui et al. 2020) and the degree of interaction between the main actors (Pattberg et al. 2018, Widerberg 2016).

An overlooked aspect of partnerships effectiveness concerns whether and to what extent climate-related partnerships are coherent for achieving climate goals (Chan, Iacobuta & Hägele 2020). Studies have highlighted numerous interactions between climate actions and sustainable development and the importance of a coherent approach for balanced implementation of objectives (Dzebo et al. 2017, IPCC 2018, Northrop et al. 2016). For example, studies have demonstrated how progress on climate goals depends strongly or at least in part on actions taken in other sectors, such as decarbonization of energy, land-use change in agriculture, protection and restoration of ecosystems and biodiversity, ocean-based solutions for enhanced climate resilience, social protection systems and health system capacities for groups vulnerable to climate change impacts (Nerini et al. 2019). Since climate governance is rooted in voluntary pledges and commitments, there is no guarantee the kaleidoscope of actions will deliver a coherent portfolio of initiatives across multiple intertwined sectors (Chan, Iacobuta & Hägele 2020). While some scholars argue coherence of this type is impossible to achieve due to the complex nature of socio-environmental challenges (Koulaimah-Gabriel 1999; Carbone 2008), other scholars have argued that the maximization of goal coherence should be an explicit performance goal of voluntary governance systems even if this cannot be fully achieved in practice (Chan, Iacobuta & Hägele 2020).

Little evidence has been published yet on whether global climate governance is constructing portfolios of partnerships capable of delivering balanced multisectoral implementation of climate goals. Studies so far have examined other aspects of coherence. For example, Atteridge, Verkuijl & Dzebo (2020) explores whether Nationally Determined Contributions (NDCs) and national development plans are

aligned using textual analysis of documents for seven Small Island Developing States (SIDS). While partial policy coherence is found, overall, they find limited evidence to support coherence despite the potential for cost savings. In another paper, Hedlund, Bodin & Nohrstedt (2020) examine whether policy issue interdependency affects actor's choice of partners in collaborative water governance in the Norrström basin, Sweden. They find limited evidence that policy interdependency is a significant factor driving partner choice.

This paper examines the issue of coherence in climate governance in the context of transnational multi-stakeholder partnerships that claim to contribute to climate objectives in the Pacific SIDS. SIDS owing to their small size, remoteness, and climate vulnerabilities are especially dependent on partnerships to achieve climate goals as well as other sustainable development goals (UN 2015, 2014). In recognition of this fact, the UN launched the SIDS Partnerships Framework in 2014 to catalyze new partnerships and support existing partnerships to implement SIDS sustainable development priorities (Goransson, Vierros & Borrevik 2019, UN 2014). Integrated implementation is a strong theme in UN documents on SIDS (UN 2017, 2015, 2014, UNGA 2017).

Specifically, the paper conducts a large N study of 49 climate-related partnerships in Pacific SIDS (PSIDS) to assess to what extent these partnerships taken together contribute to the balanced implementation of climate goals in PSIDS. Most of these partnerships focus on adaptation activities. In particular, it uses the UN Sustainable Development Goals (SDGs) as a framework to assess partnerships coherence. The main aim of the paper is to develop evidence-based recommendations on which partnerships to orchestrate to fill gaps in coherence.

2. Climate Governance and the SDGs

2.1 Climate-related Partnerships and Coherence

Research in global climate governance recognizes the importance of transnational partnerships (often termed cooperative initiatives) in driving climate action (Lui et al. 2020, Chan et al. 2021). Cooperative climate governance has concentrated on the role of portfolios of partnerships in bridging the global emissions gap (Blok et al. 2012). Such portfolios rely on a variety of small-scale transnational cooperative governance initiatives involving voluntary pledges and many different types of actors, not only states, to help reduce GHG emissions (Stewart & Oppneheimer 2013). More recently, a similar perspective has been applied to research in transnational climate adaptation governance (Chan & Amling 2019, Dzebo 2019).

Large N studies of partnerships have shed light on cooperative governance's inclusiveness, issue diversity, geographic scope, institutionalization, emergence, and

contribution to goal attainment (Reinsberg & Westerwinter 2021, Westerwinter 2021, Lui et al., 2020, Pattberg et al. 2012, Andonova & Levy 2003). Using qualitative database methods, these studies have assessed performance of climate partnerships along several dimensions including the characteristics of governance functions, participants composition and thematic areas (Bulkeley et al. 2012, Castan Broto et al. 2013, Chan et al. 2014, Widerberg & Pattberg 2015, Widerberg & Stripple 2016, Westman & Castan Broto 2018). Studies have also applied quantitative modelling in the case of climate mitigation to estimate the potential impact of partnerships on global GHG reductions (Lui et al. 2020).

Despite this progress, an important understudied aspect of performance is partnerships coherence (Chan, Iacobuta & Hägele 2020). Climate mitigation and climate adaptation are complex transboundary problems that span several sectors and scales (Persson 2019, Persson & Dzebo 2019). Increasingly, scholarship is mapping out these linkages across issue areas and levels (Nerini et al. 2019, IPCC 2018, ISCU 2017, Nilsson, Griggs & Visbeck 2016). This evidence base provides an opportunity to study what Hedlund, Bodin & Nohrstedt, (2021, 2020) highlight as the relationship between the boundary-spanning structural features of global policy problems and appropriate issue-specific governance solutions, yet this perspective has received insufficient attention to date. While linkages are recognized as an important component of polycentric governance systems (Ostrom 2014) and decentralized network governance (Haas 2004), most efforts to date focus on linkages across actors (Pattberg et al 2018, Hsu et al. 2020, Widerberg 2016). A key gap in the literature is whether and to what extent portfolios of climate partnerships sufficiently account for linkages across sectors (Chan, Iacobuta & Hägele 2020).

The issue of coherence connects to the debate on how to orchestrate effective climate actions (Chan et al. 2021, Widerberg 2017, Backstrand et al. 2017, Abbot 2017, Hale & Rogers 2014, Abbot et al. 2012, Abbot & Snidal 2009). To raise climate ambition, scholars have called for UN agencies such as UNFCCC to orchestrate stronger cooperative commitments through recording, reviewing, reinforcing, and recruiting partnerships (Hale & Rogers 2014). Similarly, Chan et al. (2015) have called for a global framework to ensure the additionality of transnational cooperative initiatives through a network (not a single organization) of orchestrating actors. In the policy literature however, recommendations for partnerships are relatively rudimentary. The most common approach looks to areas with an implementation deficit and low number of partnerships, recommending more partnerships in these areas (e.g., Goransson, Vierros & Borrevik 2019, Andonova & Levy 2003). Sometimes the approach is formalized using indicators. For example, UNDESA's SIDS Partnership Report 2019 used weak HDI indicator scores and low partnership count data to recommend more partnerships for health, gender equality, etc., (Goransson, Vierros & Borrevik 2019). No efforts to date (to the best knowledge of the author) make recommendations for multisectoral approaches to achieve goal coherence. In this

way, linkages could be used to assess gaps in the partnership portfolio and identify partnerships needed for a more coherent approach.

Large N studies of partnerships (e.g., Chan & Amling 2019, Hale & Rogers 2014, Pattberg et al. 2012) generally lack appropriate conceptual frameworks and methodologies to assess partnerships in light of the many interlinkages between issue areas. This paper aims to address this gap. In particular, it explores the role such linkages could play in forging portfolios of partnerships better tuned to integrated implementation.

2.2. The SDGs as a Framework to Assess Coherence

As an international agreement signed by all 193 member states, the UN 2030 Agenda sets the agenda at global level for sustainable development in terms of a framework of 17 SDGs and 169 targets (UN 2015). This universally recognized policy framework covers a wide range of global issues encompassing to varying degrees aspects of development, environment, health, security, trade and commerce, finance, social affairs, technical, human rights, and health.

Scholarship in sustainability science has documented the complex and integrated nature of the SDGs, and challenges this poses for implementation (Le Blanc 2015, Nilsson, Griggs & Visbeck 2016, Allen, Metternicht & Wiedmann 2021). Research on interlinkages has mushroomed covering reviews of the scientific literature and multi-disciplinary expert judgement of cross-impacts (ICSU 2017), SDG interaction scales (Singh et al. 2017, Nilsson, Griggs & Visbeck 2016, Weitz, Nilsson & Davis 2014), regression analysis (Dolley 2020, Pradhan 2017), and quantitative scenario-based modelling of impacts (Pedercini et al. 2019). Much of the focus has been on developing scientific tools to assist policy makers with identifying and assessing synergies and tradeoffs for long-term planning and coherent policymaking (Allen 2021). A central concern is to develop the evidence base of SDG interactions. A large body of research has mapped interlinkages between specific SDGs and the other goals and targets (Singh 2017, Nerini 2019, Alcamo 2019). At present, the evidence base is large, diverse, and scattered (Alcamo 2019). Greater knowledge exists of within scale interactions, so called horizontal linkages (Allen, Metternicht & Wiedmann 2018), however research has begun to examine linkages across scales, so-called vertical linkages (Dolley et al. 2020, Vinca et al. 2021).

The issue of coherence between goals and targets is central concern in the SDG literature (Breuer et al. 2019, Tosun et al. 2017, Stafford-Smith et al. 2017, OECD 2016). Several authors have framed the coherent implementation of the SDGs in terms of the maximization of synergies and minimization of trade-offs (Nilsson, Griggs & Visbeck 2016, Alcamo et al. 2020). Increasingly, effective implementation is seen to require multisectoral coordination and collaboration that accounts for the many interlinkages (Alcamo et al. 2020, Hynes et al. 2020, UN GSDR 2019, Sachs et al. 2019,

TWI2050 2018, Hinton et al. 2021). Partnerships have been seen as an important tool for integrating actors, perspectives, and responsibilities from different sectors (Stafford-Smith et al. 2017, Hujistee et al., 2007), and dealing with vested interests (Horan 2019a, 2019b). Greatest attention however has focused on policy coordination and cooperation across ministries at national level (Allen, Metternicht & Wiedmann 2021, Bennich & Weitz 2020).

Proposals for enhancing coherence use different approaches (e.g., Whole-of-government (WoG)/whole-of-Society (WoS), nexus (Weitz 2018) and first-order approaches (Horan 2020a, 2020b)) and thus recommend very different levels of cooperation for integrated implementation across sectors (Horan 2021). This difference comes down to the scope of linkages considered (Horan 2021). Whereas WoG/WoS approaches consider all potential linkages (not just first-order but also higher-order connections), nexus approaches consider only the strongest interactions between a small number of policy areas. The first-order approach charts a middle ground considering all first-degree linkages. Following Horan (2021, 2020a, 2020b, 2020c), this paper applies a first-order approach to multisectoral implementation and extends it to transnational partnerships. The main merit of this approach is that it provides a broad, yet manageable assessment of coordination required for integrated implementation across sectors.

2.3. Mapping Partnership's Alignment to the SDGs

To assess the coherence of a portfolio of partnerships, we first require a method that maps the alignment of a partnership's activities to the SDGs.

Partnership effectiveness can be examined in terms of outputs, outcomes, or impacts (Pattberg et al. 2012, Easton 1965). Since partnerships entail voluntary commitments that may or may not yield promised outputs, the most common measure of effectiveness is the Function-Output-Fit (FOF) (Pattberg et al. 2012). This output-based measure indicates the extent to which a partnership's observable outputs align with its promised deliverables. Although a weak measure of effectiveness, FOF is extremely useful to assess partnership's delivery of commitments. For instance, Chan et al. (2018) show that approximately 50% of partnerships are effective under FOF and the FOF for climate governance initiatives has been increasing over time.

The relationship between a partnership and the SDGs is complex and mapping this relationship can be difficult as often partnerships have multiple objectives that promise diverse outputs and the SDGs themselves are interlinked. In addition, outputs do not always align clearly with the SDGs.

Drawing on the FOF approach, this paper presents an Output-SDG-Fit (OSF) measure of a partnership's alignment to the SDGs. I now outline its main features. First, OSF maps a partnership's promised outputs to the SDGs. It thus seeks to measure a partnership's *potential impact* on SDG achievement. Ideally, we want to know a

partnership's actual impact on the SDGs, however, rarely do partnerships have an immediate SDG impact. Therefore, one approach (followed here) is to assess potential impact. Second, OSF may list several SDGs. This can happen even for partnerships with a narrow focus in a specific issue because several SDG targets are indivisible from each other (Nilsson, Griggs & Visbeck 2016). For instance, a citizens science project for community-based management of sustainable tourism would contribute to targets 8.9, 12.b, & 14.7, and thus SDGs 8, 12, & 14.

Third, I focus only on partnerships that report SDG13 (i.e., climate action) as one objective of the partnership. A spectrum of climate-related partnership projects has been noted "from pure climate change-focused projects to those that provide climate change benefits as one part of an overall development program, and finally to those with only incidental indirect effects" (McCarthy et al 2012: Pg. 1, 4-5). This paper includes the first two types of initiatives but not the third since these are not necessarily *additional*. An example of a partnership that contributes to climate action without this being the main objective is as the Expansion of Large Scale Marine Managed Areas in Fiji which includes activities to conserve the Great Sea Reef and coastal ecosystems. This partnership reports climate adaptation as one of its goals.

A fourth issue concerns indirect impacts. If a partnership succeeds in altering progress on an SDG, this will in turn cause changes in other SDGs (those to which the SDG is interlinked) which in turn will cause further changes to ripple through the SDG network (Weitz et al. 2018, Zhou & Moinuddin 2017, Le Blanc 2015). To address this mapping challenge, this paper makes a distinction between a partnership's direct impact on the SDGs and its indirect impact mediated through the realization of a partnership's actions. The paper focuses only on the direct impact since this is what matters most to evaluate a first-order multisectoral approach to coherence.

Finally, mapping alignment can be done at the level of an individual partnership or for a portfolio of partnerships. To assess coherence, our interest is in the overall alignment of partnerships to the SDGs. For this, the OSF's of different partnerships can be aggregated to obtain a measure of a portfolio's potential impact on the SDGs.

3. Methodology and Data

3.1. Case Study Setting

To assess coherence of climate-related partnerships, this paper focuses on Pacific SIDS. On the one hand SIDS have well known vulnerabilities to climate change including hazards such as rising sea levels, storms, and flooding (UN 2017). Thus, climate adaptation is key goal. On other hand, although SIDS contribute to global GHG emissions is small owing to their small size, SIDS are highly dependent on fossil fuel energy imports thus reducing public sector spending. This combined with their

remote locations, small public sectors, limited resources make these countries especially dependent on transnational partnerships (UNEP 2014).

SIDS special status at the UN make them an interesting case to study. The Third International Conference for SIDS in Apia in 2014 agreed the SAMOA pathways which set out national priorities for SIDS in terms of sustainable development (UN 2014). The conference placed a strong emphasis on partnerships and the integrated implementation of SIDS priorities (Goransson, Vierros & Borrevik 2019). In particular, the outcome document called for the establishment of the SIDS Partnership Framework to "catalyze new partnerships and support existing partnerships" for the sustainable development of SIDS (UN 2014, Goransson, Vierros & Borrevik 2019). The SAMOA pathways comprise the national priorities of SIDS. Among these, climate change is listed as a key priority.

3.2. Measuring Coherence

Large N studies of partnerships are a commonly used approach where the aim of the study is to understand the overall composition of partnerships (Westerwinter 2021, Hale 2014, Pattberg et al. 2012, Andonova & Levy 2003). This approach involves the application of qualitative data techniques using descriptive statistics to summarize the aggregate characteristics of partnerships.

To assess the alignment of partnerships to the SDGs, this paper introduces the Output-SDG-Fit (OSF) measure of partnerships effectiveness. It measures a partnership's *potential impact* on SDG achievement focusing on the direct contribution of the partnership's proposed outputs on SDG achievement using information on the partnership's issue focus and planned deliverables. Therefore, the range of the measure is a set of SDGs.

Output-SDG-Fit: Partnership's Planned Outputs + Issue Focus -> SDGs

To construct the measure, partnership data was coded based on the list of output codes and their explanations in Pattberg et al. (2012: Pg. 10). This list contains 9 types of output ranging from publications, new databases, workshop/seminar/conference organization, infrastructure and technology transfer, website production, consultancy services, conference and workshop participation, new institutions, organizations and new partnerships, and other activities and fundraising (see Appendix A).

Based on the issue focus of a partnership's planned outputs, the partnership can be mapped to the SDGs. A list of issue area codes and their links to the 17 SDGs is given in Appendix B. The issue codes are simple well-recognized labels for each SDG e.g., water = SDG6, energy = SDG7, oceans = SDG14. To ensure an accurate categorization, the text of the SDG targets (see UN 2015) was compared to the proposed output to determine the best fit.

Measures of Partnership Effectiveness:	Function-Output-Fit (Pattberg 2012, Chan et al. 2018)	Output-SDG-Fit
Type	Output-based measure	Impact-based measure
Level	Individual partnership	Individual partnership
Purpose	Assess alignment of actual outputs with promised deliverables	Assess alignment of promised outputs to the SDGs
Key Inputs	Stated Functions, Observed Output	Planned Outputs, Issue focus
Codification	List of outputs List of functions	List of outputs List of SDG issue areas
Assessment	Percent of commitments achieved	List of SDGs addressed
Other features	Partnerships with few commitments can score high	Does not account for indirect SDG impacts

Table 1. Comparing FOF and OSF measures of partnerships effectiveness

If a partnership promises outputs in more than one issue area, the OSF measure will identify more than one SDG. Since a key feature of partnerships is to harness the means of implementation, e.g., finance, technology, data, etc., (UN 2015), SDG17 was only used if the partnerships gave rise to new partnerships, new indicator-based assessments, etc.

The overall coherence of the portfolio of partnerships was assessed based on comparing for each goal, the number of partnerships with an OSF for that goal and the number of linkages between the goal and climate action (i.e., SDG13).

To ensure comparability, a monotonicity and a first-order assumption were used. First, the more linkages between climate action and a goal, the more partnerships that are needed (monotonicity). Second, if no first-order linkage existed, then no climate-related partnership is needed (first-order multisectoral implementation).

For the purposes of this paper, a simple *one-to-one decision rule* was applied that satisfies both assumptions, i.e., if a goal has *h* linkages to climate action (SDG13), then *at least h* partnerships are needed to address these linkages. Based on this rule, SDGs linked to climate action with an insufficient number of partnerships indicate gaps in the coherent portfolio. It is also worth noting that under this rule, it is not possible to say if there is overrepresentation of partnerships on a goal (due to the absence of an upper bound for the rule)

Coherence at Goal Level: = Number of Partnerships with an OSF for that Goal – The Partnership Minimum (= Number of Linkages between the Goal and SDG13)

If this number is negative, a partnerships shortfall is said to exist for that goal under the one-to-one rule.

3.3. Data

3.3.1. Evidence base for SDG13 interlinkages.

The evidence base for SDG13 interlinkages with other goals and targets is small and fragmented. For other goals such as SDG2 agriculture, SDG3 health, SDG7 energy and SDG14 oceans, the evidence base is arguably better (see e.g., ICSU 2017). In the case of climate, there are two main sources for climate-SDG interactions: IPCC 2018 Special Report and Nerini et al. (2019). Whereas IPCC (2018) mapped interactions across mitigation and adaption actions for a small set of SDGs, Nerini et al (2019) focused on climate actions broadly and examined linkages for the full set of SDGs. Their study involved a systematic review of the scientific literature along with expert assessment.

Several other studies have mapped links between NDCs and the SDGs for different countries (Dzebo et al. 2017, Tillburg et al. 2018, Northrop et al. 2016). However, a limitation of these studies concerns the heterogeneity in NDCs across countries analyzed. For that reason, this paper focuses on the evidence summarized in Nerini (2019) due to its more comprehensive assessment of SDG interlinkages.

3.3.2. Climate Partnerships in Pacific SIDS.

Partnerships selected for the study were drawn from the SIDS online registry at UNDESA. The SIDS Partnership Database (SIDSPD) dates from July 2019 and consists of 526 partnerships. As part of the registration process, each partnership supplied information such as the title of the commitment, the lead partner organization, the names of participating partners, a list of planned deliverables and a list of resources committed. In addition, each partnership listed those SDGs towards which the partnership was working towards.

The study selected 49 partnerships in the SIDSPD that claimed to contribute to the achievement of SDG13 based on the assumption that *additional* climate actions are likely to result when partnerships internalize the impact of their activities on SDG13. Table 2 presents a summary of the 49 climate-related partnerships in terms of the type of commitment, nature of the climate action, geographic scope and goals reported.

Commitments:		**Climate Action:**	
Partnerships	47	Adaptation	44
Individual	2	Mitigation	2
Total	49	Both	3
Geographic Scope:		**Goals Reported:**	
Regional/subregional	25	SDG13 only	13
National/subnational	24	Multiple SDGs	36

Table 2. Selected Partnerships

From Table 2, of the 49 partnerships selected, most address climate adaptation. Only a few are expressly focused on mitigation. While some partnerships focus on pure climate activities (13), most contribute to climate action as one component of an overall agenda. In addition, approximately half of the partnerships have a regional focus in terms of implementation, whereas the remainder focus on national and subnational actions. Of this latter group, eleven of these partnerships are in Fiji. While almost all partnerships involved transnational actors and multiple stakeholders (47), one partnership involved only governments and one involved only universities (2).

Table 3 summarizes the lead actor type for each partnership. Where multiple actors led a partnership, these are counted separately.

Lead Actors	IGO	UN	INGO	Government	Academia	NGO	Business	Other
Partnerships	10	6	2	21	5	5	0	3

Table 3. Lead Actor Types

Note: IGO: Intergovernmental organization (including regional organizations). INGO: International NGO. Other includes Global Fund (1), Philanthropic Foundation (1), Public Private Partnership (1). National government includes ministries, embassies, state bodies. It also mixes donor governments and domestic governments. The majority of partnerships were led by domestic government entities.

As we can see from Table 3, most partnerships were led by national governments followed by inter-governmental organizations (of which most were regional organizations) followed by UN agencies. A small number of partnerships were led by universities and NGOs.

3.3.2. Output-SDG-Fit Data.

To construct OSF, data from the registry on areas addressed and promised deliverables were used to codify each of the 49 partnerships. The issue focus of each partnership was determined from the planned deliverables reported. Since such data is known to be in some cases incomplete or inaccurate (Pattberg et al. 2012), I consulted each partnership's website (if it had one) and its official documents to verify the concrete actions promised.

4. Preliminary Analysis

4.1. Linkages Between Climate Action and the SDGs

Figure 1 summarizes findings from Nerini et al. 2019 of linkages between climate action and the SDGs.

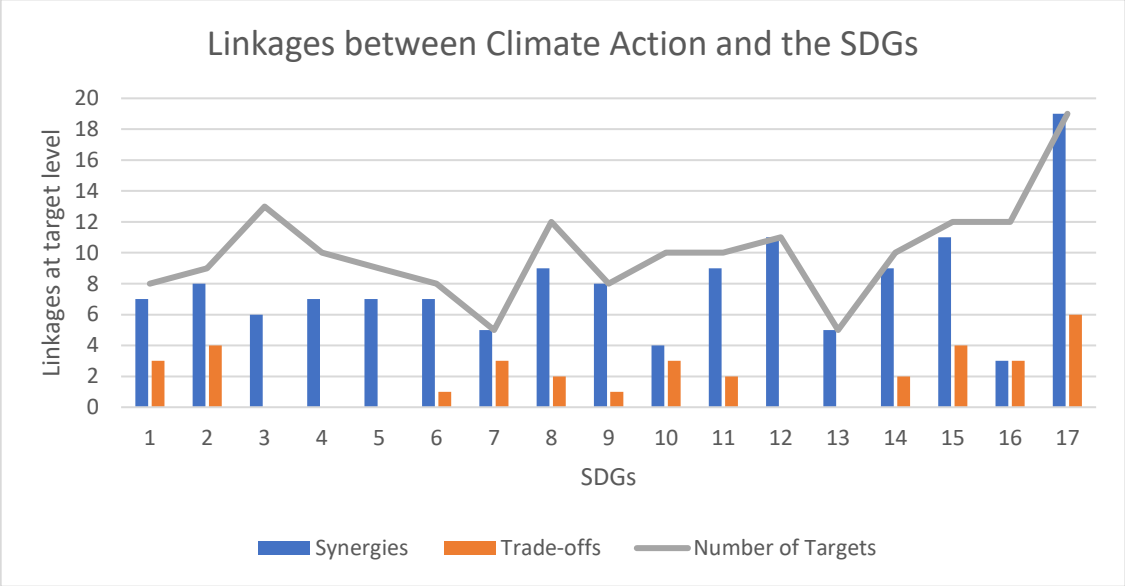

Fig. 1. Number of Linkages Per Goal. *Source*: Adapted from Nerini et al. (2019).

The figure shows extensive interactions across all the SDGs. The greatest number of interactions (synergies and trade-offs) occur with poverty (SDG1), agriculture (SDG2), water (SDG6), energy (SDG7), economy (SDG8) industry and innovation (SDG9), sustainable urbanization (SDG11), sustainable consumption and production (SDG12), sustainable oceans (SDG14) and biodiversity protection (SDG15). On the other hand, relatively fewer interactions are associated with health (SDG3), education (SDG4), reducing inequalities (SDG10) and public-sector effectiveness (SDG16). It should be noted Fig. 1 simply counts linkages ignoring the strength of the interactions.

Figure 1 also highlights that overall, synergies are more prevalent than trade-offs. The greatest number of trade-offs occur with energy (SDG7), followed by agriculture (SDG2), poverty eradication (SDG1) and biodiversity protection (SDG15). On the other hand, the highest number of synergies can be observed for sustainable consumption and production (SDG12), biodiversity (SDG15), sustainable economic growth (SDG8), sustainable urbanization (SDG11) and oceans (SDG14).

4.2. Climate-related Partnerships: Output-SDG-Fit across Goals

Using the OSF measure, Figure 2 reports the distribution of SDGs addressed by the 49 climate-related partnerships across all 17 SDGs. We can see this distribution is highly uneven. In particular, the potential impacts of climate-related partnerships in Pacific SIDS tend to cluster in a small number of SDG areas. For instance, a relatively high number of partnerships address ocean-climate linkages. By contrast, only a small number of climate linked partnerships address traditional areas of development concerned with social equity, such as poverty eradication (SDG1), health (SDG3) education (SDG4), gender equality (SDG5) and reduced inequalities (SDG10). For instance, no partnerships address climate-health linkages and few partnerships claim to contribute poverty-climate linkages which is arguably surprising given the high incidence of extreme poverty in many SIDS and prevalence of vulnerable groups to climate change impacts.

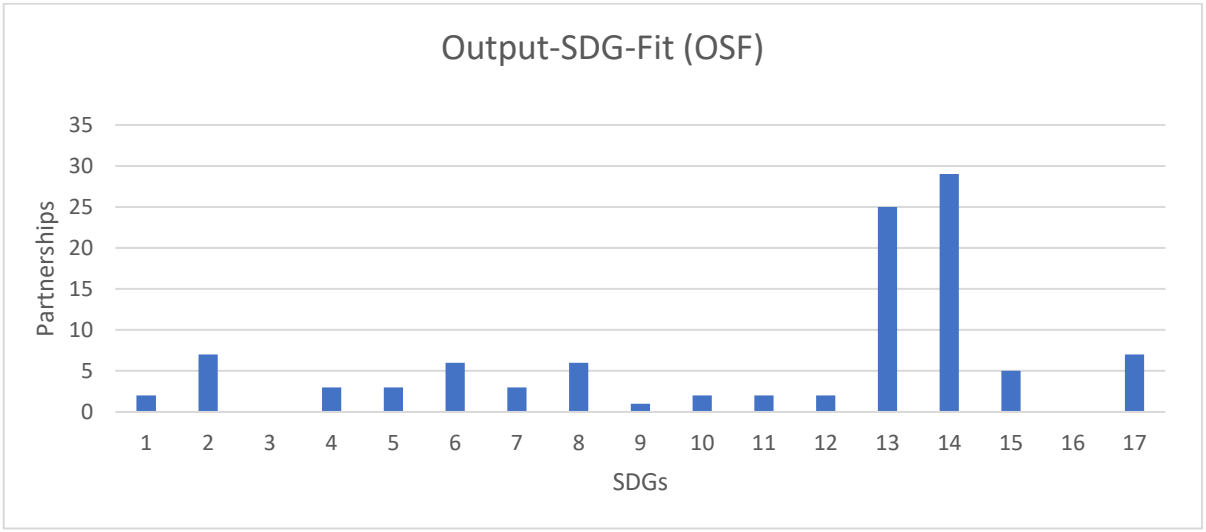

Fig. 2. Output-SDG-Fit for Climate-related Partnerships in Pacific SIDS

A low number of partnerships can also be observed on the economic dimension, in areas such as industry and innovation (SDG9), sustainable urbanization (SDG11) and sustainable consumption and production (SDG12), with the exception of sustainable economic growth (SDG8). Slightly more partnerships can be seen in environment-related areas such as agriculture and food (SDG2), water and sanitation (SDG6) and biodiversity protection (SDG15).

4.3. Evidence of Goal (In)coherence

Using the one-to-one rule, Figure 3 compares for each goal, the number of partnerships with an OSF for that goal and the number of linkages the goal has with climate action (i.e., the minimum number of partnerships needed).

We can observe clustering of partnerships around some linkages and an absence or relatively small number of partnerships for other linkages. In particular, climate-related partnerships in PSDIS exceed the partnership minimum (of 11) for the climate-ocean nexus (SDG14) with 29 out of 49 partnerships promising ocean-related deliverables that potentially impact climate resilience.

To a lesser extent, there is some evidence that SIDS partnerships account for climate-land (SDG2), climate-water (SDG6) and climate-biodiversity (SDG15) nexuses, although a shortfall can be observed. For instance, seven partnerships focus on SDG2 deliverables relative to a minimum threshold of twelve. Six partnerships promise SDG6 related outputs compared to a minimum of eight. Five partnerships offer tangible outputs on SDG15 where the minimum number of partnerships on this goal is fifteen.

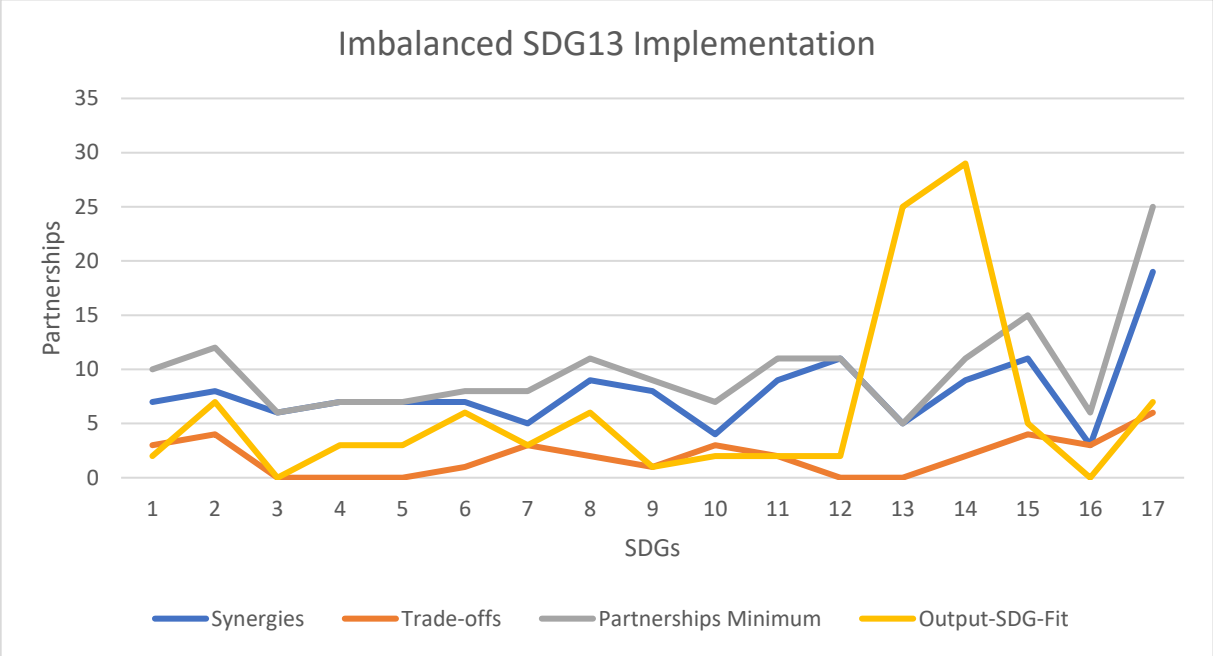

Fig. 3. Evidence of Goal Incoherence. Note, assuming a One-One Mapping Between Linkages and Partnership Needs.

By contrast, there are insufficient partnerships for the other goals despite pervasive interlinkages. For instance, few partnerships address links with SDG1 livelihoods (two

partnerships), SDG3 health (zero partnerships), SDG4-education (three partnerships), SDG5 gender equality (three partnerships), SDG7 energy (three partnerships) SDG9 industry and innovation (one partnership), SDG10 reduced inequalities (two partnerships), SDG11 sustainable urbanization (two partnerships), SDG12 sustainable consumption and production (two partnerships) and SDG16 effective public sectors (zero partnerships). These numbers are well below the minimum threshold of partnerships required.

There is some evidence that partnerships are more prone to address synergies than trade-offs. Simple correlations coefficients reveal a weak positive correlation between synergies per goal and partnerships per goal ($r = 0.35$), whereas a small negative correlation is found for trade-offs per goal ($r = -0.11$). This suggests that partnerships may not be an effective tool to manage trade-offs, at least at present.

Overall, the findings suggest climate-related partnerships in PSIDS are failing to maximize synergies and minimize trade-offs, i.e. to deliver goal coherence.

5. Discussion

5.1. Understanding Incoherence in Climate Partnerships for Pacific SIDS

The preliminary results point to an unbalanced portfolio of climate-related partnerships in Pacific SIDS with large gaps for several climate-related nexuses. While the ocean-climate nexus is reasonably well represented by partnerships, an insufficient number of partnerships was found for each of the other goals despite the presence of interlinkages with climate action. The low number of partnerships addressing the climate-development nexus is particularly noteworthy. Very few partnerships contribute to the climate-poverty, climate-health, or climate-justice nexuses This finding is surprising since most of the partnerships relate to climate adaptation and development which has well known interlinkages with adaptative capacity (For example, no partnerships report to enhance healthcare systems to contribute to adaptative capacity).

One possible reason for the imbalance relates to many SIDS not qualifying for development finance. This might help explain the shortfall in partnerships across the entire climate-development nexus. In surveys that enquire on challenges to partnering, a lack of finance is cited as one of the main obstacles (UNDESA 2016). It is worth noting also that most partnerships whose geographic scope was the national level focused on Fiji, a country that is not eligible for overseas development aid.

A second possible reason for the imbalance relates to the island status of SIDS and the success of the 2017 United Nations Oceans Conference. The climate-ocean nexus has received increasing attention in particular the role of ocean-based resilience to climate change impacts. UNDESA hosted the global SIDS Partnerships Dialogue (a key

part of the SIDS Partnerships Framework) at the Ocean Conference in 2017. The success of this conference in terms of the amount of commitments made is well-documented which might explain the overrepresentation of climate-related oceans partnerships in the SIDS database (Goransson, Vierros & Borrevik 2019). A further reason may relate to the amount of climate finance distributed as adaptation finance in SIDS. There is strong pressure to raise adaptation finance levels at international level and SIDS are widely recognized to be a part of the developing world most on the frontline of climate change impacts.

5.2. Filling Gaps in Coherence: Some Tentative Partnership Recommendations.

The analysis suggests that to develop a more coherent polycentric governance system for climate action, orchestration efforts in Pacific SIDS should focus on enabling partnerships in several areas where filling gaps could contribute to more comprehensive multisectoral integrated implementation.

While this requires on the one hand, new partnerships in those sectors currently underrepresented by partnerships, on the other hand, it also requires the mobilization of new actors for climate action in the sense that there are actors specialized in policy areas under-represented by partnerships whose participation is needed policy. In this way, identified gaps can help to provide a basis for developing new partnerships and expanding participation in transnational cooperative governance.

The preliminary analysis suggests that the main areas these actions should focus on are several. It appears the biggest gaps occur in climate-related development. This shortage of partnerships on human development goals was also noted in UNDESA SIDS Partnership Report 2019 (Goransson, Vierros & Borrevik 2019). Our tentative results highlight that filling this gap may be particularly important for climate adaptation.

According to the correlation coefficient, there appears to be no current relationships between partnerships formation and filling coherence gaps ($r = 0.03$). Greater attention also needs to be given to partnerships that support the management of trade-offs. These statistics suggest that partnerships are more prone to addressing synergies, with a weak positive correlation reported for synergies, and a small negative correlation for trade-offs.

5.3. Conclusion

Improving the performance of hybrid governance systems will be critical to achieving globally agreed climate goals. While the shift to mulitactor multilevel multisectoral decentralized network governance will be gradual, it is important to have a clear understanding of what effectiveness means and how this can be assessed.

Up to now, the debate on effectiveness has been narrowly focused on goal attainment ignoring the extent to which actions across multiple sectors are coherent for integrated implementation. Frameworks and assessment tools can help to assess partnership portfolios, identify gaps in activities, and set priorities for new actions and actors to engage.

The aim of this paper has been to chart one such framework based on the SDGs and to apply it in the context of climate partnerships in Pacific SIDS to assess their coherence. The methods developed required a new measure of partnership's potential impact on the SDGs. The preliminary results suggests that overall climate-related partnerships are highly unbalanced with respect to the linkages between climate action and sustainable development. While the oceans-climate nexus appears to be well-represented, other climate nexuses report very few partnerships. The low partnership-high linkages relationship appears particularly pronounced for the climate-development nexus. This finding lends support to the view that a key enabler of partnerships is finance and that the absence of development finance for many SIDS may be associated with incoherent climate partnerships.

There are several limitations with the research that future work can seek to address. First, there may be partnerships whose actions contribute to SDG 13 but whom have not reported this (Hedlund, Bodin & Nohrstedt 2020). One way to address this gap is to expand the study to include all 526 partnerships. Second, the registry's database cannot be understood to be representative (Widerberg & Stripple 2016). Therefore, even an expanded study may not provide conclusive evidence of goal incoherence. Third, future research should seek to refine the proposed approach. For example, context plays an important role in shaping the nature and strength of linkages (Nilsson et al. 2018). In addition, some linkages may be redundant, for example, interactions between extreme poverty and climate action may not entail significant effects in countries that have eradicated extreme poverty (Horan 2021, 2020b). Previous research has also demonstrated how use of indicators of progress in related policy areas can help to coordinate relevant actors and partnerships (Horan 2020b, Herlitz 2017). Fourth, it is difficult to ascertain to what extent the SIDS Partnership Framework succeeded in orchestrating new partnerships. Often the purpose of such registries is to showcase actions (Widerberg & Stripple 2016). Several registered partnerships pre-date the establishment of the registry or were completed before 2019. Future research should seek to understand whether completed partnerships or only those which are active should be included in assessments of coherence.

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References

Abbott, K.W., Snidal, D., (2009) Strengthening international regulation through transmittal new governance: overcoming the orchestration deficit. *Vanderbilt Journal of Transnational Law*, 42, p.501-578.

Abbott, K.W., Genschel, P., Snidal, D., Zangl, B., (2012) Orchestration: Global governance through intermediaries. Available at SSRN 2125452.

Abbott (2017) Orchestrating experimentation in non-state environmental commitments, Environmental Politics, 26:4, 738-763, DOI:10.1080/09644016.2017.1319631

Alcamo, J., (2019) Water quality and its interlinkages with the Sustainable Development Goals. *Current opinion in environmental sustainability*, 36, 126-140.

Alcamo, J., Thompson, J., Alexander, A., Antoniades, A., Delabre, I., (2020) Analysing Interactions Among the Sustainable Development Goals: Findings and Emerging Issues from Local and Global Studies. *Sustainability Science*, 15, 1561-1572.

Allen, C., Metternicht, G., Wiedmann, T. (2018) Initial progress in implementing the sustainable development goals (SDGs)—a review of evidence from countries. *Sustainability Science*, 13, 1453–1467. DOI 10.1007/s11625-018-0572-3

Allen, C., Metternicht, G. and Wiedmann, T., (2021) Priorities for science to support national implementation of the sustainable development goals: A review of progress and gaps. *Sustainable Development*. DOI: 10.1002/sd.2164

Atteridge, A., Cleo Verkuijl & Adis Dzebo (2020) Nationally determined contributions (NDCs) as instruments for promoting national development agendas? An analysis of small island developing states (SIDS). *Climate Policy*, 20:4, 485-498, DOI: 10.1080/14693062.2019.1605331

Andonova, L., Levy, M., (2003) Franchising global governance: Making sense of the Johannesburg type II partnerships. In Yearbook of International Cooperation on Environment and Development 2003/04; Stocke, O.S., Thomessen, O.B., Eds.; Earthscan: London, UK, pp. 19–31.

Backstrand, K., 2006. Multi-Stakeholder Partnerships for Sustainable Development: Rethinking Legitmacy, Accountability and Effectiveness. European Environment, 16, 290–306.

Backstrand, K., Kuyper, J.W., (2017) The Democratic Legitimacy of Orchestration: UNFCCC, Non-State Actors, and Transnational Climate Governance. *Environmental Politics*, 26(4), 764-788.

Beisheim, M, Fritzsche, F., (2021) Networked Multilateralism: ECOSOC and HLPF Reviews as Window of Opportunity. Guest Article, IISD SDG Knowledge Hub. Published on 20 January 2021. Available at https://sdg.iisd.org/commentary/guest-articles/networked-multilateralism-ecosoc-and-hlpf-reviews-as-window-of-opportunity.

Bennich, T., Weitz, N., Carlsen, H., (2020) Deciphering the scientific literature on SDG interactions: A review and reading guide. *Science of the Total Environment*, 138405.

Blok, K., Höhne, N., Van Der Leun, K. and Harrison, N., (2012) Bridging the greenhouse-gas emissions gap. *Nature Climate Change*, 2(7), pp.471-474.

Breuer A, Janetschek H, Malerba D (2019) Translating sustainable development goal (SDG) interdependencies into policy advice. *Sustainability*, 11(7):2092. DOI 10.3390/su11072092

Broto, V.C. and Bulkeley, H., (2013) A survey of urban climate change experiments in 100 cities. *Global environmental change*, 23(1), pp.92-102.

Bulkeley, H., Andonova, L., Bäckstrand, K., Betsill, M., Compagnon, D., Duffy, R., Kolk, A., Hoffmann, M., Levy, D., Newell, P. and Milledge, T., (2012) Governing climate change transnationally: assessing the evidence from a database of sixty initiatives. *Environment and planning C: Government and Policy*, 30(4), pp.591-612.

Carbone, M., (2008). Mission impossible: the European Union and policy coherence for development. *Journal of European Integration*, 30, 323–342.

Chan, S., Falkner, R., Van Asselt, H., Goldberg, M., (2015) Strengthening non-state climate action: a progress assessment of commitments launched at the 2014 UN Climate Summit.

Chan, S., Falkner, R., Goldberg, M., van Asselt, H. (2018) Effective and geographically balanced? An output-based assessment of non-state climate actions, *Climate Policy*, 18:1, 24-35, DOI: 10.1080/14693062.2016.1248343

Chan, S., Amling, W., (2019) Does orchestration in the Global Climate Action Agenda effectively prioritize and mobilize transnational climate adaptation action? *International Environmental Agreements: Politics, Law and Economics*, 19(4), pp.429-446.

Chan, S., Boran, I., van Asselt, H., Ellinger, P., Garcia, M., Hale, T., Hermwille, L., Mbeva, K., Mert, A., Roger, C. and Weinfurter, A., (2020) "Climate Ambition and Sustainable

Development for a New Decade: A Catalytic Framework." *Global Policy*. Doi: 10.1111/1758-5899.12932

Chan, S., Iacobuta, G., Hägele, R. (2020) "Maximising goal coherence in sustainable and climate-resilient development? Polycentricity and coordination in governance." The Palgrave Handbook of Development Cooperation for Achieving the 2030 Agenda. Palgrave Macmillan, Cham, 2021, 25-50.

Dolley, J., Marshall, F., Butcher, B., Reffin, J., Robinson, J.A., Eray, B., Quadrianto, N., (2020) Analysing trade-offs and synergies between SDGs for urban development, food security and poverty alleviation in rapidly changing peri-urban areas: a tool to support inclusive urban planning. *Sustainability Science*, 15(6), 1601-1619.

Dzebo, A., Brandi, C., Janetschek, H., Savvidou, G., Adams, K., Chan, S. and Lambert, C., 2017. Exploring connections between the Paris Agreement and the 2030 Agenda for Sustainable Development. SEI Policy Brief.

Dzebo, A., (2019) Effective governance of transnational adaptation initiatives. *International Environmental Agreements: Politics, Law and Economics*, 19(4), pp.447-466.

Easton, D., (1965) *A Systems Analysis of Political Life*, New York: Wiley.

Falkner, R., (2016) The Paris Agreement and the new logic of international climate politics. *International Affairs*, 92(5), 1107–1125.

Goransson, O., Vierros, M. Borrevik, C. (2019) Partnerships for small island developing states. Division for Sustainable Development Goals, Department of Economic and Social Affairs, UN.

Haas, P.M., (2004) Addressing the Global Governance Deficit. *Global Environmental Politics*, 4(4):1-15.

Hale, T., Roger, C., (2014) Orchestration and Transnational Climate Governance. *Review of International Organizations*, 9:59-82.

Hedlund, J., Bodin, Ö., Nohrstedt, D., (2020) Policy issue interdependency and the formation of collaborative networks. *People and Nature*, 3(1), pp.236-250.

Hedlund, J., Bodin, Ö. and Nohrstedt, D., (2021) Assessing Policy Issue Interdependencies in Environmental Governance. *International Journal of the Commons*, 15(1).

Herlitz, A., Horan, D., (2017) A model and indicator of aggregate need satisfaction for capped objectives and weighting schemes for situations of scarcity. *Social Indicators Research*, 133(2), pp.413-430.

Hinton, R., Armstrong, C., Asri, E., Baesel, K., Barnett, S., Blauvelt, C., Buang, S.N.B., Bury, L., Das, J.K., Franz-Vasdeki, J. and Milman, H.M., (2021) Specific considerations for research on the effectiveness of multisectoral collaboration: methods and lessons from 12 country case studies. *Globalization and health*, 17(1), pp.1-11.

Hoffmann, M.J., (2011) *Climate governance at the crossroads: Experimenting with a global response after Kyoto*, Oxford, Oxford University Press.

Horan, D., (2019) A new approach to partnerships for SDG transformations. *Sustainability*, 11(18), p.4947. Doi: 10.3390/su11184947

Horan, D., (2019) Compensation strategies to enact new governance frameworks for SDG transformations. *Public Sector Economics*, 43(4), pp.375-400. Doi: 10.3326/pse.43.4.3

Horan, D., (2020) National Baselines for integrated implementation of an environmental Sustainable Development Goal assessed in a new integrated SDG index. *Sustainability*, 12(17), 6955. Doi: 10.3390/su12176955

Horan, D., (2020) Enabling Integrated Policymaking with the Sustainable Development Goals: An Application to Ireland. *Sustainability*, 12(18), 7800. Doi: 10.3390/su12187800

Horan, D., (2020) Assessing baselines and coordinating actions for the SDGs Decade of Action. IISD SDG Knowledge Hub, Guest Article, 1 October 2020. Available at http://sdg.iisd.org/commentary/guest-articles/assessing-baselines-and-coordinating-actions-for-the-sdgs-decade-of-action/.

Horan, D., Manuscript. From Linking Sectors to Forging Partnerships: A Coalition-building Framework to Harness Effective Partnerships for Collaborative SDG Implementation.

Huijstee, M.M., Francken, M., Leroy, P., (2007) Partnerships for sustainable development: A review of current literature. *Environmental Sciences*, 4, 75–89.

Hsu, A., Brandt, J., Widerberg, O., Chan, S., Weinfurter, A., (2020) Exploring links between national climate strategies and non-state and subnational climate action in nationally determined contributions (NDCs). *Climate Policy*, 20:4, 443-457, DOI: 10.1080/14693062.2019.1624252

Hynes, W., M. Lees and J.M. Müller (eds.) (2020), Systemic Thinking for Policy Making: The Potential of Systems Analysis for Addressing Global Policy Challenges in the 21st Century, New Approaches to Economic Challenges, OECD Publishing, Paris, https://doi.org/10.1787/879c4f7a-en.

ICSU (2017) A guide to SDG interactions: from science to implementation. International Council for Science, Paris.

IPCC (2018). Global warming of 1.5°C. An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.

Klöck, C., Fink, M., (2019) *Dealing with climate change on small islands: Toward effective and sustainable adaptation*, Universitätsverlag Göttingen.

Koulaimah-Gabriel, A., (1999) The EU and the developing world: Coherence between the Common Foreign and Security Policy and development co-operation. Policy coherence in development co-operation. London: Frank Cass in association with European Association of Developmental Research and Training Institutes, pp.346-72.

Le Blanc, D., (2015) Towards integration at last? The sustainable development goals as a network of targets. *Sustainable Development*, 23(3), pp.176-187.

Lui, S., Kuramochi, T., Smit, S., Roelfsema, M., Hsu, A., Weinfurter, A., Chan, S., Hale, T., Fekete, H, Lütkehermöller, K, de Villafranca Casas, M.J., Nascimento, L., Sterl, S., Höhne, N., (2020) Correcting course: the emission reduction potential of international cooperative initiatives. *Climate Policy*, Vol. 21, No. 2, pp. 232-250.

McCarthy, N., Winters, P., Linares, A.M., Essam, T., (2012) Indicators to Assess the Effectiveness of Climate Change Projects. Inter-American Development Bank.

Nerini, F.F., Sovacool, B., Hughes, N., Cozzi, L., Cosgrave, E., Howells, M., Tavoni, M., Tomei, J., Zerriffi, H. and Milligan, B., (2019) Connecting climate action with other Sustainable Development Goals. *Nature Sustainability*, 2(8), pp.674-680.

Nilsson, M., Griggs, D., Visbeck, M., (2016) Map the interactions between Sustainable Development Goals. *Nature*, 534, 320–322.

Nilsson, M., Chisholm, E., Griggs, D., Howden-Chapman, P., McCollum, D., Messerli, P., Neumann, B., Stevance, A.S., Visbeck, M. and Stafford-Smith, M., (2018) Mapping interactions between the sustainable development goals: lessons learned and ways forward. *Sustainability Science*, 13(6), pp.1489-1503. DOI.org/10.1007/s11625-018-0604-z

Nilsson, M., Weitz, N., (2019) Governing Trade-Offs and Building Coherence in Policy-Making for the 2030 Agenda. *Politics and Governance*, 7(4): 254-263. DOI: 10.17645/pag.v7i4.2229

Northrop, E., H. Biru, S. Lima, M. Bouye, Song., R., (2016) Examining the Alignment Between the Intended Nationally Determined Contributions and Sustainable Development Goals. Working Paper. Washington, DC: World Resources Institute.

OECD (2016) Better policies for sustainable development 2016: a new framework for policy coherence. 292. OECD Publishing, Paris. DOI 10.1787/9789264256996-en

Pattberg, P., Chan, S., Sanderink, L. and Widerberg, O., 2018. Linkages: Understanding Their Role in Polycentric Governance. *Governing Climate Change*, p.169.

Pattberg, P.H., Biermann, F., Chan, S., Mert, A., (Eds.) (2012) *Public Private Partnerships for Sustainable Development. Emergence, Influence and Legitimacy*, Edward Elgar: Cheltenham, UK.

Pedercini, M., Arquitt, S., Collste, D., Herren, H., (2019) Harvesting synergy from sustainable development goal interactions. *Proceedings of the National Academy of Sciences*, 116(46), pp.23021-23028.

Persson, Å., (2019) Global adaptation governance: An emerging but contested domain. *Wiley Interdisciplinary Reviews: Climate Chang*e, 10(6), p.e618.

Persson, Å., Dzebo, A., (2019) Special issue: Exploring global and transnational governance of climate change adaptation. *International Environmental Agreements: Politics, Law and Economics*. https://doi.org/10.1007/s10784-019-09440-z

Reinsberg B., Westerwinter, O (2019) The global governance of international development: Documenting the rise of multi-stakeholder partnerships and identifying underlying theoretical explanations. *The Review of International Organizations*, 1-36.

Sachs, J.D., Schmidt-Traub, G., Mazzucato, M., Messner, D., Nakicenovic, N., Rockström, J., (2019) Six transformations to achieve the sustainable development goals. *Nature Sustainability*, 2(9), pp.805-814.

Singh, G.G., Cisneros-Montemayor, A.M., Swartz, W., Cheung, W., Guy, J.A., Kenny, T-A., McOwen, C.J., Asch, R., Geffert, J.L., Wabnitz, C.C., Sumaila, R., Hanich, Q., Ota, Y., (2017) A rapid assessment of co-benefits and trade-offs among sustainable development goals. *Marine Policy*, 93:223-231. DOI 10.1016/j.marpol.2017.05.030

Stafford-Smith, M., Griggs, D., Gaffney, O., Ullah, F., Reyers, B., Kanie, N., Stigson, B., Shrivastava, P., Leach, M., O'Connell, D., (2017) Integration: the key to implementing the Sustainable Development Goals. *Sustainability Science*, 12(6), pp.911-919.

Stewart, R.B., Oppenheimer, M., Rudyk, B., (2013) A new strategy for global climate protection. *Climatic change*, 120(1), pp.1-12.

Tilburg, X. van, Rawlins, J., Luijten, J., Roeser, F., Gonzales-Zuñiga, S., Lütkehermöller, K., Minderhout, S., (2018) NDC update report. Special edition: Linking NDCs and SDGs. ECN/TNO, New Climate Institute.

Tosun, J., Leininger, J., (2017) Governing the interlinkages between the sustainable development goals: Approaches to attain policy integration. *Global Challenges*, 1(9), p.1700036.

TWI2050—The World in 2050 (2018) Transformations to achieve the sustainable development goals; Report Prepared by The World in 2050 Initiative; International Institute for Applied Systems Analysis (IIASA): Laxenburg, Austria.

UN (2014) Report of the third International Conference on Small Island Developing States, Apia, Samoa 1-4 September, 2014. United Nations, New York. Available at https://sustainabledevelopment.un.org/sids2014.

UN (2015) Transforming our world: the 2030 Agenda for sustainable development. United Nations, New York. Available at: https://www.un.org/ga/search/view_doc.asp?symbol=A/ RES/70/1=E.

UN (2017) Our Ocean, Our Future: Call for Action. In Proceedings of the Resolution adopted by the General Assembly, New York, NY, USA, 6 July 2017.

UN (2019) Independent Group of Scientists appointed by the Secretary-General, Global Sustainable Development Report 2019: The Future is Now – Science for Achieving Sustainable Development. United Nations, New York.

UNDESA (2016) Partnerships for the Sustainable Development Goals. Support the SDGs Through Multi-stakeholder Partnerships – Ensuring that No One is Left Behind. Prepared by Division for Sustainable Development United Nations Department of Economics and Social Affairs. Available at https://sustainabledevelopment.un.org/sdinaction/2016report

UNEP (2011) Bridging the Emissions Gap. United Nations Environment Programme (UNEP). Available at https://wedocs.unep.org/handle/20.500.11822/7996

UNEP (2014) GEO Small Island Developing States Outlook, United Nations Environment Programme, Nairobi, Kenya.

UNGA (2017). Follow-up to and implementation of the SIDS Accelerated Modalities of Action (SAMOA) Pathway and the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States. Resolution adopted by the General Assembly on 21 December 2016. United Nations General Assembly, A/RES/71/225.

Vinca, A., Parkinson, S., Riahi, K., Byers, E., Siddiqi, A., Muhammad, A., Ilyas, A., Yogeswaran, N., Willaarts, B., Magnuszewski, P. and Awais, M., (2021) Transboundary cooperation a potential route to sustainable development in the Indus basin. *Nature Sustainability*, 4(4), pp.331-339. DOI 10.1038/s41893-020-00654-7

Weitz, N., Nilsson, M., Davis, M. (2014) A nexus approach to the post2015 Agenda: formulating integrated water, energy, and food SDGs. *SAIS Review of International Affairs*, 34:37–50. DOI 10.1353/sais

Weitz, N., Carlsen, H., Nilsson, M., Skånberg, K., (2018) Towards systemic and contextual priority setting for implementing the 2030 Agenda. *Sustainability Science*, 13:531–548. DOI 10.1007/s11625-017-0470-0

Westerwinter, O., (2021) Transnational public-private governance initiatives in world politics: Introducing a new dataset. *Review of International Organizations*, 16, pp. 137-174.

Westman, L., Broto, V.C., (2018) Climate governance through partnerships: A study of 150 urban initiatives in China. *Global Environmental Change*, 50, pp.212-221.

Widerberg, O., (2016) Mapping institutional complexity in the Anthropocene. In *Environmental politics and governance in the Anthropocene: Institutions and legitimacy in a complex world*, ed. P. Pattberg and F. Zelli. London: Routledge, 81-102.

Widerberg, O., Pattberg, P., (2015) International cooperative initiatives in global climate governance: Raising the ambition level or delegitimizing the UNFCCC? *Global Policy*, 6(1), pp.45-56.

Widerberg, O., Stripple, J., (2016) The expanding field of cooperative initiatives for decarbonization: a review of five databases. Wiley Interdisciplinary Reviews: Climate Change, 7(4), pp.486-500.

Widerberg, O., (2017) The 'Black Box' problem of orchestration: how to evaluate the performance of the Lima-Paris Action Agenda, *Environmental Politics*, 26:4, 715-737, DOI: 10.1080/09644016.2017.1319660

Zhou, M., Moinuddin, M., (2017) Sustainable Development Goals interlinkages and network analysis: A practical tool for SDG integration and policy coherence. Institute for Global Environmental Strategies (IGES), Kanagawa, Japan.

Appendix A: List of Output Codes

Output Code	Explanation
OUT_PUB	Publications (research, advocacy, standards, training, policy and reports); Documents found on the Internet and at partnership meetings pertaining to:
OUT_PUB_RES	Research: Any publication by the partnership (not by individual partners) documenting academic research, data-gathering for implementation and policy, and action research.
OUT_PUB_ADV	Advocacy and public awareness-raising: Any publication by the partnership (not by individual partners) arguing in favour of the partnership cause with a wider audience than policy makers (public); campaign material, newsletters, petitions, promotion material (posters, leaflets, brochures).
OUT_PUB_STA	Standards: Any publication by the partnership (not by individual partners) setting out policy and/or procedural standards (except internal operating procedures) for application to a sustainable issue.
OUT_PUB_TRA	Training: Any publication by the partnership (not by individual partners) aimed at training, including best practice manuals; and instruction materials.
OUT_PUB_POL	Any publication by the partnership (not by individual partners) arguing for specific policies (whether regional, national, or transnational) with policy makers (public) to regulate and manage sustainable development issues.
OUT_PUB_REP	Any publication by the partnership (not by individual partners) pertaining transparency and accountability towards its partners, stakeholders and wider audiences (such as annual reports, and evaluations of the partnership).
OUT_PUB_OTH	Other publications
OUT_DTB	Databases and systematically organized and retrievable information, including significant changes to existing databases.
OUT_WSC	Workshops/seminars/conferences including training seminars, exhibitions, stakeholder consulting events and courses organized by the partnership (excluding events organized by UNDESA as part of the SAMOA process).
OUT_ITT	Infrastructure and technology transfer: construction or improvement of new and existing physical facilities as well as the application and transfer of new technologies (including the exchange of grassroot innovations).
OUT_WBS	Website: An active and operational website.
OUT_CNS	Consultancy service (excluded implementation).
OUT_PRT	Conference and workshop participation (excluding conferences and workshops organized by the partnership or the UNDESA, SAMOA processes)
OUT_NEW	New institutions, organizations, and new partnerships
OUT_OTHER	Other activities and fundraising

Table 4. List of output codes and their explanations. *Source*: Pattberg et al. (2012) (Pg. 10)