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ORIGINAL PAPER

What is adaptation to climate change? Epistemic ambiguity in the climate finance system

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Abstract Over the past decade developed states have committed significant public financing for climate change adaptation. Much of this public financing flows through international development organizations. States have delegated the implementation and monitoring of adaptation to existing international organizations such as the World Bank, the United Nations Development Programme, and the Organisation for Economic Co-operation and Development. Scholars have noted that states delegate discretion to specialized organizations to perform a task on their behalf, but have not explored how uncertainties about the nature of the task affect delegation. This article addresses this gap by distinguishing the concept of *epistemic ambiguity* (when states are uncertain about the exact nature of a task) from *strategic ambiguity* (when states do not reach consensus over a task due to political differences) in order to address the question: how have states and international organizations defined and implemented adaptation activities? The question is answered through case studies of: (1) adaptation projects administered by the United Nations Development Programme and the International Organization for Migration in Kenya; and (2) states' and international organizations' attempts to develop methodologies for reporting adaptation financing. The case studies are based on: primary documents published by states and international organizations, secondary literature on climate finance, and interviews with adaptation experts. This article argues that states have not precisely defined adaptation, and that this is substantially due to epistemic ambiguity. It then identifies two consequences of epistemic ambiguity: a proliferation of activities labelled as adaptation, and difficulties tracking and monitoring adaptation assistance.

Keywords Climate finance · Adaptation · Ambiguity · Principal-agent theory · Delegation

Abbreviations
AfDB African Development Bank

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COP	Conference of the Parties
GEF	Global Environment Facility
IDFC	International Development Finance Club
IOM	International Organization for Migration
IPCC	Intergovernmental Panel on Climate Change
LDCF	Least Developed Countries Fund
MDBs	Multilateral development banks
NGO	Non-governmental organization
OECD	Organization for Economic Co-operation and Development
PPCR	Pilot Programme for Climate Resilience
SCCF	Special Climate Change Fund
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

1 Introduction

Since the establishment of the United Nations Framework Convention on Climate Change (UNFCCC) states have pledged to help developing countries adapt to climate change [UNFCCC 1992: Article 4(4)]. In the 2000s states established a series of multilateral climate funds and pledged public adaptation financing. At the 2009 United Nations (UN) climate summit in Copenhagen states set the target of US $100 billion in "new and additional" climate finance and reinforced their commitment to this goal at the Paris summit in 2015 (see special issue Editorial).[1] Although they did not stipulate a monetary goal for adaptation finance at Paris, states agreed that climate finance "should aim to achieve a balance between adaptation and mitigation" [UNFCCC 2015: Decision 1/CP.21, Article 9(4)]. Adequate funding for adaptation is important as estimates of adaptation costs to developing countries are large, and vary between $19 billion to $429 billion annually by 2050 (Watkiss et al. 2014: 21).[2] Given states' commitments to finance adaptation, how have states and international organizations defined and implemented adaptation activities?

States have not defined precisely what adaptation is, although there is agreement on the need to assist developing countries adapt to climate change. Furthermore, states have delegated the implementation and monitoring of adaptation to existing international organizations such as the World Bank, the United Nations Development Programme (UNDP) and the Organisation for Economic Co-operation and Development (OECD). Adaptation has thus become part of many development activities, yet it is not clear if and how it is distinct from development. This article examines the causes and consequences of this ambiguity through the perspective of principal-agent theory. This perspective enables us to explore how states' commitments in the UNFCCC are translated and implemented by multilateral organizations. Although there is a significant and growing scholarship on adaptation financing (Persson et al. 2009; Pauw, this issue; Persson and Remling 2014; Schipper 2007), there is no scholarship which examines public adaptation financing from a principal-agent perspective.

[1] All monetary values in this article are in US dollars unless otherwise specified.

[2] UNEP estimates the costs to be between $70 and $100 billion per annum by 2050; and the World Bank projects costs of up to $100 billion per annum by 2040–2049.

Scholars of principal-agent theory have examined why states delegate to international organizations, how they monitor their behaviour and under what conditions organizations deviate from their delegated mandate. However, they have not sufficiently explored the consequences of ambiguities in delegation. This article identifies two principal forms of ambiguity: *epistemic* and *strategic* ambiguity, and argues that states have delegated adaptation under conditions of epistemic ambiguity. This is a significant contribution to the principal-agent literature as it suggests that international organizations may not follow their mandates because those mandates are inherently ambiguous, not because these organizations are actively attempting to distort or deviate from their mandates. Furthermore, strategic and epistemic ambiguities may be a cause or consequence of fragmentation and complexity.

The next section outlines the concept of epistemic ambiguity, and sets it in contrast with strategic ambiguity. It situates these concepts within the existing principal-agent literature and suggests that strategic ambiguity occurs under conditions of heterogeneous preferences, while epistemic ambiguity occurs under conditions of uncertainty over the task. The following section turns to climate adaptation financing. It examines the definitions of adaptation in the climate regime, and argues this is a case of epistemic ambiguity as states have not precisely defined adaptation activities primarily because they are uncertain about what constitutes adaptation. It argues that there are two key implications of this: (1) a proliferation and expansion of activities which are categorized as adaptation and (2) increased difficulty in tracking donors and international organizations' adaptation initiatives.

To analyse the causes and consequences of epistemic ambiguity the article draws on primary documents published by states and international organizations as well as secondary literature on climate finance. In addition, the author conducted over 40 interviews with international organizations, donor states, and non-governmental organizations (NGOs) examining their adaptation initiatives. Interviews were conducted at the UN climate summit in Copenhagen (2009), at organizational headquarters in New York and Geneva (2010 and 2012) and at field sites in Kenya (2011). Kenya is a useful example as it is a drought-prone country in which many organizations have piloted climate change adaptation initiatives. I chose to focus on one country to remove contextual variation that could otherwise explain differences in adaptation activities. Interviews in Kenya focused on two organizations, UNDP and the International Organization for Migration (IOM). These organizations operate in different issue-areas (development and migration, respectively), and are informative, but not necessarily representative, examples of how adaptation is understood and implemented.

2 Ambiguity and delegation

According to principal-agent theory, states act as "principals" and delegate to international organizations ("agents") to perform tasks on their behalf (Hawkins and Jacoby 2006; Nielson and Tierney 2003). International organizations offer specialized expertise and services which would be costly for any one state to provide (Hawkins et al. 2006). States delegate international organizations limited autonomy to perform these tasks, but international organizations can only go so far beyond, or against, state interests as they will lose financial and political support. Principal-agent theorists have explored when and why

agents do not implement their delegated mandates (Gutner 2005; Hawkins et al. 2006). Here, the focus is on the causes and consequences of ambiguity.

States may not clearly define a delegated task, leaving it to the agent to interpret. Delegation in this form is ambiguous (Best 2012a) and enables agent autonomy. This is because international organizations may maintain and perpetuate ambiguities to their advantage (Best 2012b). According to this view, ambiguity offers international organizations room to interpret complexity, uncertainty and future circumstances in their favour (Best 2012a). International bureaucrats can use ambiguity to increase their autonomy from states (Hawkins and Jacoby 2006). States cannot monitor an international organization if they do not agree upon or know what the task is they want it to deliver. Note, however, that international organizations may not always seek to maximize their autonomy to their own advantage (Cortell and Peterson 2006).

Why would states delegate ambiguous mandates? There are two main reasons: firstly, states may be uncertain about the exact task at hand: what I call "epistemic ambiguity". In contrast states may strategically decide to delegate an ambiguous mandate because they have not reached an agreement: I refer to this as "strategic ambiguity". These terms are both new to the principal-agent literature,[3] although the term epistemic ambiguity has been used in other scholarship for different purposes,[4] and principal-agent scholars have discussed strategic ambiguity using other terms. Scholars have previously noted that states may choose to delegate discretion to specialized organizations (agents) to perform a task on their behalf, but have not explored how uncertainties about the nature of the task affects their delegation. Rather scholars have focused on the lack of consensus between principals, which generates strategic ambiguity, or on a lack of information about the behaviour of agents.[5] The central contribution of this article is to develop the concept of epistemic ambiguity. The table below summarizes the differences between strategic and epistemic ambiguity (Table 1).

Why does epistemic ambiguity occur? States delegate discretion where uncertainty about a particular task is high and flexibility is necessary and valued (Hawkins et al. 2006). States may avoid detailed delegation because they do not have sufficient expertise, and rather rely on the agent to interpret what states want. States then monitor the organization to ensure it follows their preferences. For example, states could demand that the UNDP deliver sustainable development but not specify what this is, because they are not clear amongst themselves. Here, it is epistemic uncertainty over the nature of the task, rather than political differences, that lead states to delegate ambiguous mandates. Epistemic ambiguity may be intentional—states do not know exactly the nature of the task so delegate to an expert—or unintentional—they are vague in delegation and unaware of this. The common result is that international organizations have some autonomy in implementation of this task. In contrast, principals may instruct an agent in detail on a delegated task, but this reduces the gains from specialization, as a principal needs expert knowledge about the task (Hawkins et al. 2006).

[3] Other scholars have described a similar distinction between structured and unstructured problems. Structured problems have a high degree of consensus (over the relevant norms and values) and certainty (over the relevant knowledge), whereas unstructured problems have neither consensus nor certainty (Hisschemöller and Hoppe 1995: 44). Problem structuring theories have been applied to many policy-making contexts but have not been integrated into principal-agent theories of delegation. Thanks to Joyeeta Gupta for this insight.

[4] Carl Hempel used the term to discuss an ambiguity inherent to inductive explanation (Ruben 1990).

[5] Thanks to Erin Graham for this insight.

Table 1 Ambiguity and delegation

	Epistemic Consensus (certainty over the nature of a task)	No Epistemic Consensus (uncertainty over the nature of a task)
Political Consensus (homogeneous preferences)	Unambiguous Delegation	Epistemic Ambiguity
No Political Consensus (heterogeneous preferences)	Strategic Ambiguity	Double Ambiguity

For a related set of categories applied in problem structuring theory, see Hisschemöller and Hoppe (1995: 44)

Epistemic ambiguity is distinct from strategic ambiguity, which is a result of states' heterogeneous preferences. Scholars have noted that the greater the number of principals and the greater the differences in their position the more autonomy agents have (Hawkins and Jacoby 2006). Agents can play differences between states to their advantage and seek support from one state to use as leverage against another (Martin 2006). To complicate matters, some international organizations have "multiple principals" in addition to "collective principals". This is because some organizations receive financing from the private sector and/or trust funds in addition to their governing board (Gould 2003; Lyne et al. 2006). Agents with multiple principals are likely to have more autonomy than agents with principals who work through a collective contract. The greater the number of principals, the greater scope agents will have to play off differences amongst principals against each other (Lyne et al. 2006).

There are a number of ways in which principals' heterogeneous preferences lead to ambiguity, depending on the voting rules and funding patterns. In the case of multiple principals, states and/or other actors may delegate different tasks to an international organization independent of the governing body. An example: states collectively agree that the United Nations High Commissioner for Refugees should *not* provide assistance to people displaced by natural disasters (Hall 2016). However, individual member states separately delegate to the organization to do this. In this case the organization undermines its collectively agreed mandate, because a member state has contracted it to do otherwise (Graham 2015). In fact, individual member states have a growing influence over international organizations bilaterally, at the expense of multilateralism, as restricted funding has increased proportional to core funding (Graham 2015).

In sum, strategic ambiguity occurs when states have heterogeneous preferences and epistemic ambiguity when states lack information about what a task should consist of. In both cases ambiguity enhances international organizations' autonomy. Notably some degree of ambiguity exists in many international agreements and international organizations' mandates. This ambiguity and the resulting proliferation of interpretations and activities may not inherently be a problem; it can allow for a range of responses to complex problems. This article proposes two implications of epistemic ambiguity: (1) a proliferation and range of activities that fall within the scope of delegation; (2) difficulties tracking and monitoring the implementation of these activities.

There are many acknowledged examples of strategic ambiguity in climate finance, but not of epistemic ambiguity. The UNFCCC Copenhagen Accord, for instance, is vague about what constitutes "new and additional" climate financing (UNFCCC 2009: Decision 2/CP.15, paragraph 8). This commitment is meaningless unless states stipulate a baseline

from which to calculate their financing. Instead, there are at least eight different interpretations of "additionality", which means that developed states can, and often do, strategically divert or relabel development financing as climate finance (Stadelmann et al. 2011). Meanwhile, developing countries have an interest in clarity and transparency in climate finance to ensure they get adequate support, which is additional to existing development assistance. This is an instance of strategic ambiguity as developing and developed states have divergent and opposed preferences (Bulkeley and Newell 2015).

States have also been vague on what a balanced allocation between mitigation and adaptation finance means (AdaptationWatch 2015: 19). They committed at Cancún to address adaptation with the "same priority as mitigation" (UNFCCC 2010: Decision 1/CP.16, paragraph 2b) but never clarified what proportion of finance should go to adaptation activities: Is it an equal (50–50) split or something else? Developed states are strategically employing ambiguity to their advantage, and opting to fund mitigation, widely perceived as a global public good, over adaptation, which typically is seen as providing national public and private goods (see special issue Editorial). Developing states generally prefer a clearly defined 50–50 split, while some estimates suggest adaptation is as low as 17% of overall climate finance (Buchner et al. 2014: 9). Finally, states have been strategically ambiguous about what forms of financing count towards the $100 billion by 2020 target. This means multiple forms of climate finance could count, including: public finance, private financing (see Pauw, this issue), green bonds and financial transaction taxes. Donor states are again using ambiguity strategically so they can maximize the role of private finance and minimize pressure on their national budgets.[6] Meanwhile recipient countries have opposite incentives—they want transparent, clear and consistent commitments from developed states to provide adaptation finance. These examples of strategic ambiguity attract considerable attention; however, epistemic ambiguity over adaptation has not.[7]

3 Epistemic ambiguity in adaptation financing

3.1 Financing adaptation

In the last decade states have made a series of commitments to prioritize and finance adaptation. In the 2000s states established a number of new multilateral funds which targeted adaptation including: the Special Climate Change Fund (SCCF), the Least Developed Countries Fund (LDCF), the Adaptation Fund, the Pilot Programme for Climate Resilience (PPCR) under the Clean Investment Funds, and the Green Climate Fund. Many of these funds are closely tied to multilateral development institutions which house and/or govern them and also often act as implementing partners. They also pledged to provide $30 billion for mitigation and adaptation between 2010 and 2012 ("fast-start finance") (UNFCCC 2009: Decision 2/CP.15, paragraph 8) and committed to the $100 billon target (UNFCCC 2009: Decision 2/CP.15; 2015: Decision 1/CP.21; see special issue Editorial).

Public financing for climate adaptation has increased significantly in the last decade.[8] In 2000 there were no dedicated bilateral or multilateral climate adaptation funds, but by one estimate total public finance for adaptation in 2012/2013 was between $23 and 26 billion (CICERO and Climate Policy Initiative 2015). However, there is far less climate finance

[6] Thanks to Jonathan Pickering for this point.

[7] Rajamani (2016: 506) has also commented on ambiguities in the Paris Agreement.

[8] I focus on assistance from developed to developing countries, not on financing within national budgets.

for adaptation compared with mitigation. Various estimates suggest that adaptation is typically much less than 20% of overall climate financing, and may be as low as 5% (AdaptationWatch 2015; Buchner et al. 2011, 2014, 2015), and consequently significantly lower than $23–26 billion.

Public adaptation financing may flow bilaterally (from donor states to a developing country), or multilaterally (from a donor to a multilateral organization, and then on to a developing country or implementing partner). Multilateral development banks, for example, committed $5 billion to adaptation in 2013, with the World Bank providing the majority of this (61%) (CICERO and Climate Policy Initiative 2015: 51). In addition, donors have financed UN agencies to implement adaptation: Japan gave UNDP a $92.1 million grant to assist 21 African countries adapt to climate change (UNDP 2013).

There are multiple delegation relationships at play in climate financing: from donor states to multilateral development banks, multilateral climate funds and UN implementing agencies; and from these international organizations to other implementing partners and developing countries. The complex web of sources, instruments and implementing agencies has been mapped out elsewhere (Buchner et al. 2014). Here, the focus is how states have defined adaptation, and how multilateral institutions have interpreted and implemented adaptation. Thus this article covers a significant proportion of, but not all, public adaptation finance.

3.2 Defining adaptation

The concept of adaptation has evolved dramatically over the course of the UNFCCC negotiations. This section examines how the Intergovernmental Panel on Climate Change (IPCC), donor states, and international organizations have defined adaptation. It highlights that definitions of adaptation are consistently broad and vague, due to lack of agreement over what constitutes adaptation.

3.2.1 IPCC and scientists

During the 1990s, adaptation was primarily seen as a technical response to a specific impact or vulnerability in a particular place (Moore 2010). Adaptation was defined in the First Assessment Report of the IPCC as "measures to reduce the impact of global climate change" (IPCC 1990: 58), and was mostly conceived of as a technical activity such as engineering seawalls to protect against sea-level rise. Over a decade later, in the IPCC's Third Assessment Report, adaptation was redefined much more broadly to be any "adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities" (IPCC 2001: 982).[9]

This broad conception of adaptation was reinforced in the IPCC's widely cited Fourth Assessment Report in 2007. It defined adaptation as "initiatives and measures to reduce the vulnerability of natural and human systems against actual or expected climate change effects. Various types of adaptation exist, e.g. anticipatory and reactive, private and public, and autonomous and planned. Examples are raising river or coastal dikes, the substitution of more temperature shock resistant plants for sensitive ones, etc". (IPCC 2007: 20).

[9] The IPCC also notes that various "types of adaptation can be distinguished, including anticipatory and reactive adaptation, private and public adaptation, and autonomous and planned adaptation" (IPCC 2001: 982).

Adaptation shifted from a technical response to a specific impact of climate change, to a much broader term which overlapped with development. In fact, Nicholas Stern has argued that "adaptation is essentially development in a more hostile climate" (Stern 2009: 68).

Scholars have argued that adaptation can be placed on a spectrum from an expansive definition to a narrow one. At the broad end of the spectrum adaptation is any activity which focuses on underlying inequalities and vulnerabilities. At the other extreme it is only narrow, technical activities which target the direct impacts of climate change (Persson et al. 2009; Moore 2010). By way of example: a narrow conception of adaptation could focus on building seawalls in low-lying islands to prevent flooding and erosion due to higher sea-levels and tides. A broader conception of adaptation could encompass literacy programs for women, or a vaccination program to eradicate disease in low-income areas, as these initiatives address underlying vulnerabilities. Many scholars do not see adaptation as distinct from development assistance (Schipper 2007). Interestingly, there is much less epistemic ambiguity surrounding mitigation activities as states have established clear metrics (greenhouse gas emissions) to reach a precise goal (keeping global average temperatures "well below" 2 °C above pre-industrial levels) (UNFCCC 2015: Decision 1/CP.21, Article 2a).[10]

3.2.2 States

States currently have neither an internationally agreed definition of adaptation, nor metrics to measure adaptation (AdaptationWatch 2015: 19). Many states, such as Japan, refer to the IPCC 2007 definition, according to which "vulnerability assessment is crucial for determining adaptation measures" (JICA 2011: 3–1). This means adaptation is understood in a broad sense, overlapping with existing development assistance, which also targets vulnerabilities. As the Deutsche Gesellschaft für Internationale Zusammenarbeit (German Society for International Cooperation) states: "In practice, there is often no clear distinction between development activities and climate change adaptation interventions" (GIZ 2014: 18). The AdaptationWatch report elaborates: "the concept of 'adaptation' had been extracted artificially from its original ecosystem context by the climate negotiators, it left confusion about what climate adaptation meant and therefore what a 'climate adaptation project' should be" (AdaptationWatch 2015: 19).

The situation is further complicated as some donors, such as the UK, have argued that climate adaptation should be mainstreamed into development assistance. Mainstreaming implies that adaptation should be integrated in all aspects of development activities. As UNDP (2007: 7) has stated: "in the absence of a common terminology for key climate change adaptation and mainstreaming terms, the same terms are frequently used differently". There is thus no consensus amongst states on how to differentiate, or mainstream, climate adaptation in development, which compounds the ambiguity over adaptation.

3.2.3 Multilateral organizations

In response to these vague commitments and definitions, multilateral organizations have developed their own conceptions of climate adaptation.

The Global Environment Facility (GEF), the first multilateral fund to target climate change, has one of the narrowest conceptions of adaptation. The GEF and other climate

[10] Note some of the contentious categories of mitigation finance are discussed in Delina, this issue, and the special issue Editorial.

funds such as the SCCF require adaptation proposals to demonstrate additional costs imposed by climate change on top of an existing development baseline and will only fund the additional costs of climate change (GEF 2011). Interestingly, the GEF developed the concept of additional and incremental costs, yet as Möhner and Klein (2007: 15) point out the COP's guidance to the GEF was ambiguous and did not enable the GEF to make a clear distinction between development and adaptation. The World Bank follows this rationale when tracking adaptation activities. It claims that activities "will only be recorded as adaptation if they explicitly include climate adaptation reasoning and directly address vulnerability or impact from climate variability and change" (World Bank 2012).

Meanwhile, a number of development banks have endorsed a broad conception of adaptation. The International Development Finance Club (IDFC), a network of national and sub-regional development banks, sees adaptation as "an activity that intends to reduce the vulnerability of human or natural systems to the impacts of climate change and climate related risks, by maintaining or increasing adaptive capacity and resilience" and encompasses knowledge generation and capacity development (as cited in UNFCCC Standing Committee on Finance 2014: 20). For the United Nations Conference on Trade and Development, adaptation "not only covers actions to reduce the adverse consequences of climate change but also those harnessing the beneficial opportunities it generates" (as cited in UNFCCC Standing Committee on Finance 2014: 21). The UN Standing Committee on Finance has developed an operational definition of climate finance which refers to adaptation as "reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts" (UNFCCC Standing Committee on Finance 2014: 21).

Many international organizations have interpreted adaptation from their perspective, and to fit within their mandate. UNDP for instance promotes "pro-poor and pro-growth adaptation", which they define as "supporting countries to integrate climate-related risks and opportunities into national planning and poverty reduction, while addressing the needs of more vulnerable groups like women and indigenous people" (UNDP 2015). The World Bank sees adaptation as making "the effects of climate change less disruptive and spare the poor and the vulnerable from shouldering an unduly high burden" (World Bank 2011). Meanwhile, the World Health Organization has described adaptation as "decreasing health vulnerability to current climate variability and future climate change" (WHO 2016: 1). Here, differences in definition tend to reflect organizational expertise and mandate: organizations which have a health remit view adaptation as an activity to address health vulnerabilities, whereas organizations with a broad development mandate use that lens to interpret adaptation.

In summary, there is epistemic ambiguity over climate adaptation as states have not agreed to a precise definition of the term. Although states may seek a broad, vague definition which they can tailor to their advantage (strategic ambiguity), the ambiguity here is primarily epistemic in nature because there is clear uncertainty in the scientific scholarship and policy worlds on what constitutes adaptation. A few organizations such as the GEF have opted for a narrow definition of adaptation as additional costs of climate change. Most have opted for a broad definition which addresses wider vulnerabilities. This ambiguity has implications for delegation between states and international organizations. Donor states expect international organizations to define and implement adaptation activities according to their expertise. Yet there is no single adaptation agency with the lead responsibility for implementing adaptation globally, so states delegate to existing international organizations which have expertise in other areas, such as development and migration. Given this

ambiguous delegation it is crucial to see how multilaterals implement and track adaptation activities.

4 Consequences of ambiguity

4.1 Proliferation of adaptation activities

Due to different interpretations of adaptation, international organizations have labelled a wide range of activities as adaptation and not all are clearly linked to vulnerability to climate change. In fact, a major recent study of climate financing found that 75% of projects which were labelled as adaptation lacked a clear connection to addressing vulnerability to climate change (AdaptationWatch 2015; see also Roberts and Weikmans 2015). This report claimed that, of $10.1 billion in adaptation projects claimed by states in 2012, only $2.3 billion was clearly adaptation-related (AdaptationWatch 2015). This demonstrates how different definitions of adaptation lead to divergent estimates of financing. Development practitioners whom I interviewed in Kenya reinforced this view, suggesting that adaptation covered projects targeting the immediate threats of climate change, to programs that contribute to a communities' resilience via improved health, higher incomes, higher female literacy rates, and more sustainable livelihoods.[11]

In this section I examine UNDP's and IOM's adaptation projects in Kenya as illustrative examples of how multilaterals in different issue-areas respond to epistemic ambiguity. UNDP is a development agency that has had an active role in climate finance since the outset. It was one of just three institutions initially mandated to implement GEF projects. Meanwhile, IOM's mandate is to promote humane and orderly migration, and was not established to work with people affected by climate change but has recently expanded its activities into adaptation (Hall 2015). How have these two institutions defined and implemented adaptation activities in Kenya?

UNDP began its first climate change adaptation project in Kenya in 2005. Using funding from the GEF it developed "Coping with Drought and Climate Change", a regional project to gather, analyse, forecast, and disseminate climate information in Kenya and other sub-Saharan African states. UNDP and the World Bank also established a project entitled "Adaptation to Climate Change in Arid and Semi-Arid Lands". They acquired $6.5 million from the SCCF to do environmental mapping, develop early warning systems and pilot community based adaptation pilot-projects (UNDP 2008: 24–26). These projects followed a narrower conception of climate adaptation: they prepared Sub-Saharan African states to deal with the impacts of climate change by improving their ability to forecast. We would expect a narrower conception of adaptation given that UNDP's financing came from the SCCF.

Between 2006 and 2011 UNDP's adaptation projects in Kenya diversified, reflecting shifts in the UNFCCC, the Kenyan government and also new financing options for climate adaptation. UNDP supported the Kenyan government's adaptation policies and programmes. In 2009, for instance, Kenya developed a national climate change strategy and adaptation plan across the agricultural, forestry and other sectors.[12] UNDP Kenya had a $2.6 million grant from the Japanese-funded African Adaptation Programme to build

[11] Author's interviews with UNDP, World Food Programme, UN High Commissioner for Refugees, IOM and UNEP officials in Kenya, April 2011.

[12] Interview with Kenyan climate change secretariat official, 31 March 2011, Nairobi.

capacity in government to develop climate change policy, access climate change financing, and model the impacts of climate change between December 2010 and December 2012.[13] Through a GEF-SCCF project, UNDP also strengthened national capacity to prevent epidemic highland malaria in Kenya (Adaptation Learning Mechanism 2015). UNDP's conception of adaptation broadened with new, more flexible financing.

Meanwhile, IOM Kenya began working explicitly on climate change adaptation in 2010. In 2009 the Kenyan President, Mwai Kibaki, declared a drought in the far north of the country a national emergency (BBC 2009). Cattle died leaving local Turkana pastoralists with little food or income. IOM expanded its livelihood initiatives from the Rift Valley into drought-affected areas. IOM had existing offices and staff in Kakuma and had extra funding from Japan which they could reallocate as it was "very, very flexible".[14]

IOM's initial projects in Turkana sought to "mitigate the negative impacts of food insecurity" on pastoralist communities and there was no mention of adaptation in the 2009 project documentation.[15] Then in 2010 IOM began to explicitly frame its activities as climate change adaptation. Its first programme was entitled Livelihood Support to Pastoralist Communities and Refugees' Host Communities in Response to Climate Change and Refugee Influx in Northern Kenya (IOM 2011). Initiatives included: a poultry project, installation of sprinkler irrigation systems for vegetable farming, planting Aloe Vera seedlings, consultations with the water resource authority on sinking boreholes, provision of timber boats and fibre glass boats to fishermen, and the establishment of a bone-craft training center in Kakuma (IOM 2011). The focus on climate change adaptation continued in 2011 with the programme "Mitigating resource based conflicts among pastoralist local communities including refugee host communities in Northern Kenya through strengthening youth capacities to adapt to climate change".

Many of IOM's climate change adaptation activities in 2010 and 2011 were the same as its livelihood activities of 2009. No IOM field staff provided a clear rationale of what distinguished adaptation from other activities.[16] One stated that a number of activities could be shifted between climate change adaptation and other project categories.[17] This was a result of epistemic ambiguity: field staff had no clear definition of what constituted adaptation. They gained no immediate strategic benefits, such as increased funding, by working on adaptation. Furthermore, their donor (Japan) did not instruct them to work on adaptation.[18] This finding represents one programme in one organization, and IOM staff in other countries may hold differet views over the distinction between adaptation and development. However interviews with field practitioners suggest development and adaptation are often fungible.

These illustrative examples suggest there is great variation in the activities which international organizations label as climate adaptation, due to epistemic ambiguity and not different climate risks across Kenya. UNDP initially adopted a narrow conception of adaptation, focused on specific impacts of climate change, and was funded by the GEF. Over time its activities broadened, reflecting in part new Kenyan government adaptation priorities, and most importantly new financing sources that had a broader conception of

[13] Telephone interview with UNDP official, 25 March 2011.

[14] Interview with IOM official, 6 April 2011, Kakuma.

[15] Ibid.

[16] Ibid.

[17] Ibid.

[18] Ibid.

adaptation. Meanwhile, IOM's livelihood activities became labelled as adaptation under flexible Japanese development assistance that was not explicitly targeted at adaptation. These examples, although not exhaustive, suggest that field staff generally see adaptation as interchangeable with development, and may use development assistance to do adaptation even though their funders have not demanded it. Conceptual ambiguity, rather than strategic ambiguity, is leading to the proliferation of adaptation activities.

The wide variation in adaptation activities is not inherently a problem: it may illustrate the need for a range of interventions to address global adaptation needs. However, it is problematic for tracking adaptation financing, as the next section discusses.

4.2 Difficulties tracking and monitoring adaptation

States and international organizations have tried to develop methodologies for reporting climate adaptation financing in developing countries. Shortly after the Copenhagen Accord, scholars surveying the field documented at least 19 different adaptation reporting methods used by 15 different governmental organizations, think tanks, NGOs, and academic researchers (Roberts and Peratsakis 2010). International organizations and donors use different approaches and methodologies to determine and account what qualifies as an adaptation project. This makes it difficult to track adaptation assistance and monitor if multilaterals are delivering adaptation and if donors are living up to their pledges. Roberts and Peratsakis (2010) revealed that persistent ambiguities over how to define adaptation led to vastly different methods by which to count adaptation, resulting in dramatically different estimates of how much climate adaptation assistance exists at any point in time. These estimates vary wildly depending on the choice of narrow versus broad definitions of adaptation.

Since 2010, states and international organizations have sought to develop common adaptation markers to track assistance. In 2010 the OECD introduced a new adaptation marker to its existing environmental markers (known as the "Rio markers", after the 1992 Rio Earth Summit). Member states of the OECD Development Assistance Committee report annually on where they target their Official Development Assistance. Donors have to code their projects as having "principal objectives", "significant objectives" or "not targeting the objectives" of the UNFCCC, which are mitigation and adaptation.[19] To be coded as adaptation under this system, adaptation objectives must be explicitly indicated in the project or activity documentation. This means that the documents outlining a given project (the proposal for funding, the partner country document, sectoral strategy or poverty reduction strategy programme) should explain how the donor is providing support for adaptation (OECD 2011).

Compliance with the Rio markers has been inconsistent and unreliable. A large number of donors have struggled to consistently follow the reporting mechanisms for the Rio marker for adaptation (AdaptationWatch 2015). This is due to persistent confusion over how to apply the coding rules and lack of consensus over how to define the overall adaptation objectives of multifaceted development projects (Michaelowa and Michaelowa 2011; Weaver and Peratsakis 2011).

In addition, all the Rio markers suffer from reliance on donor self-reporting without adequate independent oversight and quality control.[20] Current self-reporting practices by

[19] The Rio markers also cover biodiversity and desertification. For further detail on the Rio markers, see Betzold and Weiler, this issue.

[20] Thanks to Jonathan Pickering for this insight.

donors are problematic because the interpretation of what counts as adaptation is subject to political biases and incentives to show positive results. In studies of the Rio marker for mitigation Michaelowa and Michaelowa (2011) found significant over-reporting due to excessive optimism, uncertainty about how to define and code climate change activities, or perceived political pressures to appear to be devoting more resources to mitigation than is actually the case. Although the OECD has sought to clarify how the Rio markers should be used (OECD 2011) they still involve major ambiguities. Donors have relabelled development activities as addressing climate change impacts because they are under pressure to show they are taking action on climate change (AdaptationWatch 2015: 29).

In parallel to the OECD, the multilateral development banks (MDBs) have collectively developed methodologies to track their climate adaptation and mitigation finance (African Development Bank (AfDB) et al. 2014).[21] They require an adaptation intent and the articulation of a clear link between the context of climate vulnerability and the project. They distinguish between a development project contributing to a specific impact of climate change and a standard "good development" project (AfDB et al. 2014: 7). The MDBs look at the incremental or proportional cost for extra components of a project that directly address adaptation needs. Projects must fulfil three criteria: "(a) include a statement of purpose or intent to demonstrate that the qualifying project element(s) reduce current and/or future vulnerabilities to climate; (b) set out the context of climate vulnerability specific to the location of the qualifying project element…. And (c) link the qualifying project elements to the context of climate vulnerability" (UNFCCC Standing Committee on Finance 2014: 51).

The MDBs translate the concept of "additionality" into their tracking by distinguishing between standard development projects and adaptation, and also by identifying the exact costs of adding adaptation to an existing project. In doing so they implicitly endorse the separation of adaptation from standard development, which some find problematic (Schipper 2007). Furthermore, these methods have not been followed by all development banks. A recent study by the International Financial Development Network found that the MDBs and their own adaptation methodologies "are not, at this stage, easily comparable" (IDFC 2014: 4). In summary, international efforts to track adaptation finance have progressed significantly in the past five years, and the MDB and the OECD Rio (adaptation) marker are now the most well-established markers. Yet there is not a functioning, universal method to track adaptation financing. Ambiguities persist in defining, implementing and tracking adaptation assistance, leading some to describe it as a "non-system of climate finance reporting" (AdaptationWatch 2015: 9; see also Roberts and Weikmans, this issue).

5 Conclusion

This article has argued that epistemic ambiguity is widespread in climate adaptation financing. There is no universally agreed, precise definition of adaptation and states have delegated to multilateral institutions to interpret and implement many adaptation activities. There are advantages and disadvantages of delegating to international organizations under conditions of epistemic ambiguity. On the one hand, delegating to international organizations may help to resolve uncertainties. If states do not know what adaptation is they can delegate to experts in international organizations to figure it out. Furthermore, epistemic

[21] The MDBs include five regional development banks, the International Finance Corporation, and the World Bank.

ambiguity gives developing states room to define adaptation activities according to local circumstances. On the other hand, delegation under epistemic ambiguity may increase the ability of international organizations and donor states to pursue their own interests and enhance rather than reduce strategic ambiguity.

This article explored two particular consequences of delegation under epistemic ambiguity: first there has been a proliferation of adaptation activities, which often overlap with traditional development assistance. It illustrated one occasion where international organizations followed a narrow definition of adaptation (SCCF and UNDP), but in most cases donors' conceptions of adaptation are broad and international organizations have great flexibility to define adaptation how they wish (Japan and IOM; Japan and UNDP).

Second, this article argued that epistemic ambiguity has meant it is almost impossible to independently monitor adaptation financing and ensure that donors deliver on their commitments. This article demonstrated the great difficulties in tracking adaptation finance despite the existence of the OECD Rio marker for adaptation, which all OECD donor states are obliged to use. This is precisely because we do not have a consistent definition of adaptation or an understanding of how it is distinct from traditional development assistance, across international financing and implementing institutions.

Future research would benefit from exploring how long delegation chains, delegation between regimes, and the involvement of multiple principals and agents may contribute to strategic and epistemic ambiguities. Scholars should in particular examine the implications of delegating to multiple actors as in climate finance there is delegation to many institutions, and between different regimes. Regime complexity and fragmentation likely enhance ambiguities as it is more difficult to find common ground between actors operating in different regimes (see special issue Editorial). Scholars should also examine ambiguity in other international agreements and organizations outside the climate finance system.

This article has broader implications for the climate finance system. It suggests that states should precisely define adaptation finance to overcome epistemic ambiguity. In addition to an operational definition of adaptation finance (such as the definition for climate finance proposed by the Standing Committee) the system needs a detailed and multilaterally agreed framework, crafted by developed and developing states, that provides clear, unambiguous guidance to implementing institutions on what constitutes adaptation (see also Roberts and Weikmans, this issue). This would enable independent monitoring of principals and agents and ensure they live up to their climate finance commitments. Paris did not deliver this. Subsequent negotiations on implementing the Paris Agreement should look to resolve epistemic ambiguities that inhibit the ability of the climate finance system to function effectively.

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