ARGUMENTATION

demonstrating how

the Model Multilateral Treaty for the Encouragement of Investment in Climate Change Mitigation and Adaptation

meets the assessment criteria

Contribution from the Think Tank 30 – the Young Club of Rome to the Stockholm Treaty Lab

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Executive Summary

Climate change is the central global challenge of our times. The Paris Agreement sets a global agreement to limit global warming to well below 2°C, yet considerable challenges still exist to define the exact way to reach that goal and to mobilize the necessary funding. With our model Multilateral Investment Treaty for the Encouragement of Investment in Climate Change Mitigation and Adaptation, we present a proposal with the capacity to considerably increase climate friendly investments while maintaining country ownership. Our model treaty creates a "win-win" situation benefitting investors, home and host countries alike and leading to a positive impact for the triple bottom line, namely climate and the environment, economies and societies.

To meet this goal, we used the Design Thinking methodology for the innovation process, which allowed us to identify relevant challenges for the stakeholders involved and craft solutions incorporating several loops of feedback and improvement. Our proposal is also backed up by our collective interdisciplinary expertise, the latest research and extant literature in climate change policy, finance and law as well as by the feedback of 25 experts we interviewed during the course of this project.

Our proposal addresses four key challenges that we identified based on an in-depth stakeholder and gap analysis: (1) define climate change mitigation and, even more poignantly, adaptation investments; (2) decrease the barrier of limited access to capital due to perceived and actual risks; (3) combat insufficient investor trust in long-term contracts, particularly in the context of emerging and developing countries; and (4) retain states' ability to regulate.

We address these challenges with a number of innovative articles and mechanisms: (1) Article 2 provides a strong and clear, yet flexible definition for mitigation and adaptation investments, giving investors broad entrepreneurial freedom while ensuring country ownership through a mandatory link with the Host States' Nationally Determined Contribution. (2) In Article 17, we design a strong financing mechanism that serves as the "carrot" for investors and states. The financing mechanism is housed at the GCF, thereby eliminating the need to create new institutions, and building on the political consensus of the UNFCCC parties. The financing mechanism has a strong private sector focus, providing a flexible and comprehensive tool set of de-risking and funding opportunities to lift otherwise not viable green investments over the hurdle, while levelling the playing field for investment in emerging and developing countries. (3) The conversion of host country subsidies to investment grants in Article 15 presents an additional opportunity to address the lack of access to capital and improving bankability of projects. (4) Article 16 tackles the issue of insufficient trust in the conclusion of long-term contracts, namely the off-taker default risk. (5) A key innovation is provided in Article 29 through the provision of a performance verification with a distributed ledger, using the latest technology to increase transparency and tracking of investment effectiveness. (6) The treaty incorporates lessons learnt from the application of earlier investment treaties and innovates in relation to the states' ability to regulate (Article 20), the MFN clause (Article 8) as well as investor-state dispute resolution (Articles 22, 23, 24, 25). The investor state dispute resolution provisions address concerns of transparency, third-party involvement, abuse of process, fraud, sovereign debt restructuring, efficiency of proceedings as well as consolidation. Allowing the contracting parties to agree on interpretations of the treaty puts contracting parties firmly in control where the meaning of provisions has been wrongly interpreted (Article 30.6).

The Conclusion explains how our model treaty meets the evaluation criteria of compatibility, efficacy, viability, universality and enforceability.

Contents

1 Introduction

Climate change is the central global challenge of our time. As a case in point, the 2017 Global Risks Report of the World Economic Forum lists extreme weather events, water crisis and failure to mitigate and adapt to climate change among the top global risks (WEF, 2017). The Paris Agreement (UNFCCC, 2015a) and partially also the Sustainable Development Goals (UN, 2015) are the main present answers of the global community to address and climate change and focus climate action. Both agreements, however, merely set the goal for climate change mitigation and adaptation but not the path to achieve it. Therefore, a lot of work remains to be done on both global and local levels to set up the right institutional frameworks to effectively combat climate change.

Achieving the target of limiting global warming to well below 2°C requires nothing less than the technological transformation of sectors and industries. And this, in turn, requires massive investments over the coming years. Actual climate finance flows "reached a record high of $437 billion dollars in 2015, followed by a 12% drop in 2016 to $383 billion", out of which roughly two third stem from private sources (Buchner et al., 2017, p.1). However, this is not nearly enough. Different studies quantify the additionally needed investments on the conservative side to be approximately $200 – $600 billion dollar per year in the area of infrastructure alone (Bielenberg et al., 2016; Edenhofer et al., 2017; World Economic Forum, 2016)[1]. This demonstrates that there is a strong need to "crack the code" for increasing climate friendly investments.

About half of the required additional investments will have to be foreign investments from high- and middle-income countries (Bielenberg et al., 2016; Edenhofer et al., 2017). Foreign direct investments are important for three reasons: (1) despite excellent resource potential and demand from a growing population, capital is often the bottleneck, especially in low- and middle-income countries (Waissbein et al., 2013), (2) the majority of global economic growth in the next years will come from low- and middle-income countries (IMF, 2018), and (3) the majority of these countries will be more affected from climate change than high income countries (IPCC, 2014).

Free trade agreements and investment treaties are classic tools to increase foreign investments (Dolzer and Schreuer, 2012). While their general principles remain important, three factors should be considered if such treaties should aid in closing the investment gap for climate change mitigation and adaptation: (1) investments in climate change mitigation and adaptation are different from conventional investments, (2) in many parts of the world conventional investments are still enjoying favourable conditions through existing subsidies and institutions and (3) the need for investments in climate change mitigation and adaptation is imminent and urgent which is why states should consider providing special protections and incentives for such investments. These circumstances make it opportune to think about a special model treaty for the encouragement of investments in climate change mitigation and adaptation.

Designing such a model treaty requires deliberations in two areas: first, how do we define climate change mitigation and adaptation investments and, second, with what measures can we effectively support investments in climate change mitigation and adaptation within the scope of an international treaty. Answering these questions requires knowledge from both legal, financial and technological domains as well as new and creative thought approaches.

[1] Some studies (e.g. Zuckerman et al., 2016) propose even higher values of approximately $1 trillion per year on climate-friendly energy investments.

We therefore built a transdisciplinary team and used a design thinking approach for drafting our proposal. The elements of our proposal are based on the individual expertise of the team members, on extensive literature research as well as on 25 interviews with field experts of different disciplines.

The remainder of this document is structured as follows: first, we introduce the method we used for coming up with our treaty proposal (Section 2). Second, we elaborate on the main challenges we derived during the innovation process and embed them in the current state of research and practice (Section 3). Third, Section 4 details how our proposal addresses the challenges we have chosen. Fourth, Section 5 summarizes how our proposal meets the evaluation criteria set forth by the Stockholm Treaty Lab.

2 Method

When discussing a suitable method for the design of our proposal, we realized two things: First, a successful treaty needs to pick up future users from where they are right now, it needs to pragmatically understand their individual needs and goals and it must not assume lofty idealism. Second, after "picking" up our targeted users ("personas"), it is necessary to "bring" stakeholders somewhere new by creating a different environment with the right mechanisms, enabling innovative patterns of action and thus relevant and sustainable change.

It is exactly for those two phases, using convergent thinking to zero in on our personas and then using divergent thinking to encourage wild and new ideas (Brown and Katz, 2009), that we chose the method of Design Thinking. Convergent thinking is the type of thinking that focuses on coming up with single, well-established answers, whereas divergent thinking is the practice of generating many different creative ideas to explore a wide variety of different paths (Cropley, 2006).

Design Thinking then is the structured exercise of approaching problems like a designer:

> *Design thinking can be described as a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically (or legally) feasible and what a viable business strategy can convert into market opportunity.* (Brown, 2008, p.84)

How can design help in dealing with the multi-stakeholder conflicts of foreign investments? If we consider the five P's of solving conflicts of interest (Perception, People, Practices, Policies and Persistence), we are actually able to identify a number of interfaces to which designers can apply their methods (Stocker, 2017) to the delicate challenge of drafting an investment treaty. Of the five fundamental approaches to solve such conflicts (give up, smooth over, persuade, compromise and cooperate) almost all of them are well suited to being implemented and further worked out with design methods (Johnson and Johnson, 2012).

Based on the principles of Design Thinking, we followed the process depicted in **Figure 1**. In the following, we will shortly highlight relevant aspects of the seven phases of the process.

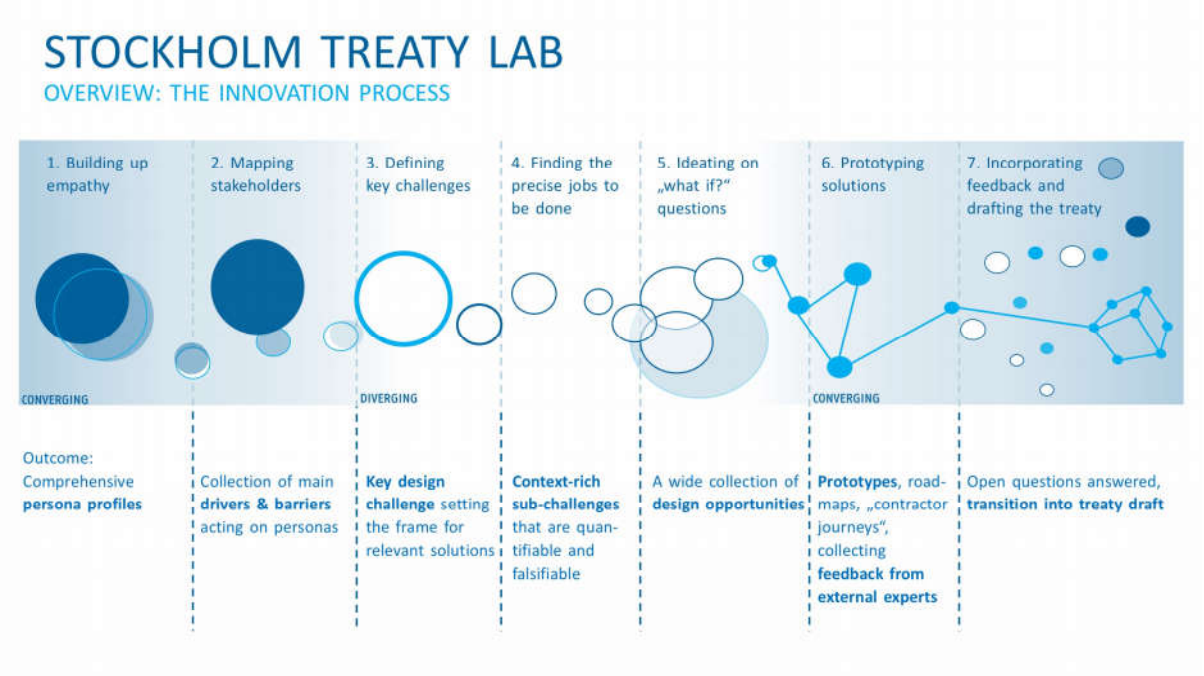

Figure 1: *The innovation process*

Building up empathy

The method of Design Thinking is highly valued for taking into account the perspective of a potential "user" (Gibbons, 2018). A successful treaty draft needs not only to be innovative but also relevant for the stakeholders addressed. Having in mind that no innovation matters if it does not understand the situation of the targeted person, we started with research on our key "users":

- Large corporation (e.g. Siemens)
- Large bank (e.g. Deutsche Bank)
- Development bank (e.g. World Bank)
- Specialized SME (e.g. Solarwatt)
- NGO supporting SDGs (e.g. Greenpeace)
- Interest group sceptical towards SDGs (e.g. Farmers' association)
- State with high investment readiness (e.g. Switzerland)
- State with low investment readiness (e.g. Egypt)

Here, it was important that we were not trying to understand the organizational logic as a whole but really the perspective of individual decision makers (Berman, 2008). We collected quotes, daily routines as well as their individual hopes and fears regarding the Paris Agreement and the SDGs.

Mapping stakeholders

In a second step, we put our personas into relation to each other. How do they interact? How and under which circumstances do they cooperate? What are relevant communities that one or more personas are embedded in? What are important beliefs they share or fundamentally disagree on?

We created a large persona map, which allowed us to zoom in and out with the aim to find recurrent patterns. What are the conventional practices and logics of action? What are historical habits and symbolic practices? (Brown and Katz, 2009) After this mapping process we collected our insights in a downloading session. We noted down what we had learned so

far and what we found surprising after empathizing with the personas individually. We then sharpened those insights with external experts.

Defining key challenges

This point marks the first transition from the mode of convergent thinking to divergent thinking. We now had a list of insights, and gathered lots of data about the personas. There is a risk that innovators get trapped in the personas by adopting their organizational perspectives (Stocker, 2017). Therefore, it is crucial at this point to not get lost in the details and be able to leave the status quo. In order to do so, we formulated a ”How-might-we Question” questions based on our insights to give our learnings a progressive twist.

To demonstrate an example, for a decision maker of a large corporation (“Martina”), we used three insights to capture her perspective:

- “Foreign investments are a mixed blessing: they can boost my career and generate attention for me within the company, but the chances of failure are very high. I don’t want to get my fingers burnt.”
- “While I can use making this investment to create attention within the company, any attention from too many external stakeholders is worsening my investment conditions.”
- “Sometimes we wait too long for a safe business environment so that others have taken the cake in the meantime.”

Every problem is a design opportunity to reframe our insights into a question:

> *How might we enable Martina within her company it to find a “safe space” for her investment ideas giving him the right internal exposure without the external risk to be able to move things forward for her and her company?*

After collecting a number of “How-might-we Questions”, we chose four key challenges on which we continued our work.

Finding “Jobs to be done”

Before jumping to ideas or even solutions, we let external experts again challenge our questions. Our goal here was to add to these core questions the right situational flesh. Following Clayton Christensen’s “Jobs-to-be-done” approach (Christensen, 2016), that aims to uncover specific situations and jobs, we asked: What is the exact job that a solution must fulfil? And when? What matters on a functional, emotional, social or cultural level to our users when they are confronted with the specific challenge? **Figure 2** summarises the different levels of this approach in context.

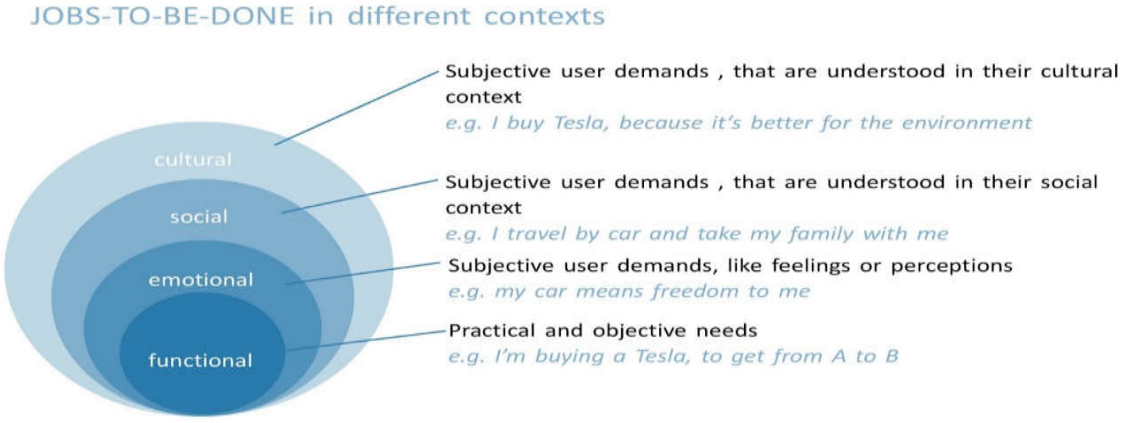

Figure 2: *The 'Jobs-to-be-done' approach*

Coming back to the case of Martina, the Siemens decision maker, we conclude that (from her point of view) a sound investment treaty needs to address the following jobs:

- **Cultural job:** “I want to do something for our company, our brand that is truly pioneering.”
- **Social job:** “When I oversee a foreign investment, I want to be rewarded by entering exclusive circles (business class, meeting diplomats etc.) in the targeted country.”
- **Emotional job:** “Despite working in such a gigantic corporation, I want to feel proud and self-effective when my ideas are being realized.”
- **Functional job:** “I want the investments I bear responsibility for to deliver high returns and minimal bureaucratic costs.”

Ideating on “What if”-Questions

At the step of highest divergence, we started brainstorming sessions to collect as many intuitive ideas as possible. In order to do so we were taking creative leaps (Design Kit, 2018). We asked ourselves: How would Steve Jobs/Harry Potter/ artificial intelligence solve a key challenge? What if money/ trust/stability wasn‘t an issue? We went for quantity and only after these sessions we looked for quality and picked our favourite ideas.

Prototyping solutions

Here we switched back to convergent thinking. From rough ideas sketched on a post-it, we went to testable prototypes. We did so by developing user journeys - how would our persona interact with our proposed article? What are the relevant steps, what resources are needed? And eventually: What kind of change would it make?

Here again, external experts were crucial. We asked them to challenge our prototypes and iteratively adjusted our prototypes as we went along. Following iterative loops, our prototypes matured and slowly became feasible.

Incorporating feedback and starting the draft

Before starting to draft the actual treaty, in this step we made all threads come together. We turned our ideas into formulations for the draft. We went back to the beginning and asked ourselves: What would our personas say to these ideas? What would keep them from implementing our outcomes? While doing so, we discovered blank spots and open questions that were again solved with the help of external experts.

Overview of expert interviews

During the seven phases we conducted 25 interviews with relevant experts from different fields. **Table 1** provides more information on the experts including references regarding their contribution to our treaty proposal. We will reference interviewees with the interview number in later sections.

#	Role	Area of expertise	Main area of feedback
I 01	Former under-secretary of state, Professor for Negotiation and Conflict Management	Foreign relations, International law	Stakeholder perspective, Definition of key challenges
I 02	Professor for Energy Politics	Climate policy, Climate finance	Definition of key challenges, Clean technology de-risking approaches
I 03	Senior researcher focusing on sustainable start-ups	Sustainable entrepreneurship, Business in developing countries	Main barriers for foreign investment in low and middle-income countries
I 04	Senior consultant for energy and climate policy	Climate policy, Climate action in developing countries	Definition of climate change mitigation and adaptation investments
I 05	Lead investment officer of an impact investment company	Climate finance, Sustainable entrepreneurship	Main barriers for foreign investment in low and middle-income countries
I 06	Senior counsel of a large technology corporation	Corporate law	Main risks for investment and operation of clean technologies
I 07	Senior counsel of a large technology corporation	Corporate law	Main risks for investment and operation of clean technologies
I 08	Desk officer for foreign investment in a federal ministry	Foreign relations, International law	State-investor balance
I 09	Senior consultant for climate policy and clean technology businesses	Technology, Climate policy	Use of distributed ledger technologies to support foreign investment
I 10	Senior researcher for energy and climate policy	Climate policy, International trade, International law	State-investor balance, CDM under Kyoto, Right to regulate
I 11	Senior consultant for energy and climate policy	International trade, Energy policy, Climate policy	State-investor balance, Main risks for investment and operation of clean technologies
I 12	Project manager for renewable energy projects	Technology, Energy policy, Corporate law	Project financing for clean technologies
I 14	Professor at Stanford University focusing on environmental law, particularly climate change	Environmental law	Privat sector incentives, Difficulty of public goods, such as water
I 15	Senior Researcher for European and foreign relations	European and Foreign relations	Comparison of trade finance issues, Advantages of state-state dispute resolution
I 16	Senior Associate for global energy Issues	Energy sector	Lessons learned from Energy Charter treaty, CDM under Kyoto
I 17	Partner in international law firm working in the area of International investment law and arbitration	International investment law	International arbitration agreement, Multilaterial arbitration
I 18	Lead Legal Officer at a Multilateral Development Bank	International investment law, Climate finance	Financial instruments, Financial intermediaries, pecifically guarantee products
I 19	Lead Legal Officer at a Multilateral Development Bank	Corporate law, Project Finance	Legal perspective on infrastructure investments, Risks of infrastructure investments
I 20	Lead Climate Change Officer at a Multialetral Development Bank	Climate policy	Incentive mechanisms for climate investments, Climate finance, Climate policy
I 21	Law Professor focusing on dispute resolution	Dispute Resolution	Mass claims, Soveriegn debt restructuring
I 22	Partner at an international law firm	Project Finance, Renewable Resources	Incentivisation of investors via dispute resolution clauses
I 23	Partner at an international law firm	International arbitration	Investor-state dispute resolution
I 24	Partner at a German law firm	International arbitration	Investor-state dispute resolution, Right to regulate
I 25	Principal Associate in magic circle law firm	International arbitration	Multilateral arbitration agreement issues

Table 1: *Overview of expert interviews*

3 Key challenges

In the third phase of our process, we defined key challenges for the users of our model treaty. Based on the team's expertise, expert interviews, and the existing literature on climate finance and investment as well as international investment law, we collected and prioritized the key challenges from both fields. As a result, we defined four key challenges, two of which we identified as main reasons for underinvestment and the other two as main barriers for concluding a new multilateral treaty.

In the following, we will shortly highlight these challenges and provide a short reasoning why we believe they are important. In the end we will summarize the strategic rationale for the design of our model treaty.

3.1 Definition of climate change mitigation and adaptation investments

The first challenge for the viability of the treaty is to define climate change mitigation and adaption investments in a way that these investments effectively support the targets set by the Paris Agreement and the Sustainable Development Goals (insights based on interviewees: I 01, I 02, I 04). This is a challenge, since both agreements only specify the targets to be achieved but are largely silent on the pathways how to achieve those goals. At the same time, there is only limited research or tools available that help to define climate change mitigation and adaptation investments (Höhne et al., 2017).

Investments can or cannot support climate change mitigation and adaptation dependent on (1) where they are deployed in and (2) when they are deployed. The first point highlights the breadth of sectors and geographies in which climate change mitigation and adaptation has to happen. Renewable energy generation technologies, for example, can support climate change mitigation in geographies where electricity generation is largely based on fossil fuels. The same technologies can, however, contribute to higher greenhouse gas emissions in geographies which already have a relatively high share of renewable energy generation, for example when additional firm capacity from conventional generators is needed to balance variable renewable generation (Chandler et al., 2011). At the same time, there are starkly diverging investments that can support climate change mitigation and adaptation. Infrastructure to support non-motorized transport can, for example, reduce greenhouse gas emissions, just the same as additional electricity transmission and distribution infrastructure or solar powered cooking stoves (Höhne et al., 2017).The second point highlights the dynamic nature in which climate change mitigation and adaptation is likely to happen. We provide an example from the transportation sector to illustrate this point: The investment in additional light rail transit may support climate change mitigation efforts at a point in time where this new transportation mode will reduce individual fossil fuel powered transportation, but it may also increase greenhouse gas emissions when it reduces non-motorized transportation at a later point in time.

Summing up, in order to ensure the viability of our treaty proposal, we need to include a comprehensive and dynamic definition of climate change mitigation and adaptation investments. Therefore, we define the following challenge: How might we define climate change mitigation and adaptation investments for the purpose of the model treaty?

3.2 Limited access to capital due to perceived and actual risks

A main reason for the current gap in climate change mitigation and adaptation investment is a lack of access to sufficient capital, exacerbated by the high capital costs in comparison to conventional investments which often are up-front (I 02, I 03, I 05, I 18,I 19). This lack of access stems from the existence of significant barriers in the markets that deter commercial

lenders from financing investments in climate change mitigation and adaption and prevent private companies from developing those. The barriers to climate friendly private investments are well described by Polzin (2017), Leitmann and Bishop (2011), Baietti (2013), and Sullivan (2011).

Many of those barriers are directly related to the risks a potential project faces. There are actual risks that a project developer needs to identify and mitigate. Then there are perceived risks, which may or may not reflect the actual risks, which, however influence a company's decision whether to venture into "unknown territory" and develop a project. Perceived risks can have an even higher impact on the financier who will make a decision whether or not to provide capital for a specific undertaking. The cost of capital is a direct reflection of the level of risk incurred. In addition, the capital costs of climate change mitigation and adaptation investments tend to be very high at the beginning of a project and comparatively low during the operation phase. Thus, the high risks and the resulting complexity of proving the bankability of a project often lead to restricted access to finance for such investment opportunities. This is why privately financed climate friendly investments often still don't happen without "nudges" from the public sector.

Thus, there is a strong need to "de-risk" climate friendly investments by (1) lowering associated risks and (2) improving the capacity of stakeholders to evaluate the risks adequately, and thus be able to incentivize considerable private sector investment addressing climate change (Schmidt, 2014; Waissbein et al., 2013). The prevalence of a certain risk will always depend on the country and local context as well as on the type of investment, so flexibility in de-risking instruments is needed. To illustrate this point, Waissbein et al. (2013) carried out case studies that investigate the perceived risks for renewable energy investments in four developing countries.

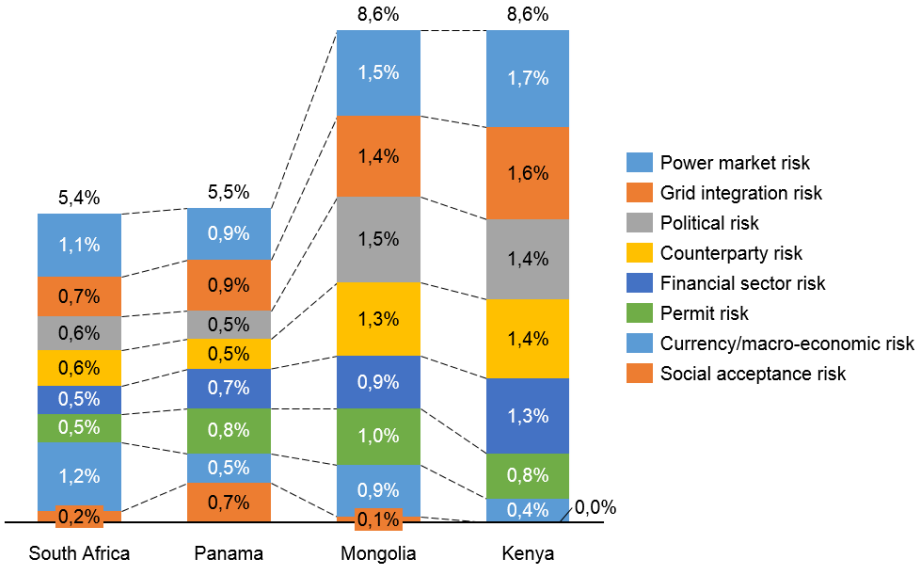

Figure 3: *Additional estimated cost of equity (in %) to address risks for renewable energy investments in developing countries (from Waissbein et al., 2013).*

These case studies make it evident that there is no silver bullet to address the predominant risks for a specific investment or a specific country. Therefore, a new model treaty needs to address as many risks as possible within its scope, and provide for a flexible "tool box" to match specific local needs. Therefore, we defined the following challenge: How might we reduce actual and perceived risks for foreign investors in order to increase investor willingness for climate friendly investments in host countries?

3.3 Insufficient trust in long-term contracts

The third challenge that we identified as a crucial barrier for accelerating private investment in climate change mitigation and adaptation, is the insufficient possibility to conclude long-term contracts in low- and middle-income countries (I 01, I 02, I 03, I 05, I19).

This challenge specifically applies to infrastructure investments which constitute a significant share of the investment gap for climate change mitigation and adaptation. Infrastructure has a comparatively long lifetime in comparison to other investments. The repayment of such investments therefore takes significantly longer compared to other investments and their profitability is crucially dependent on the possibility to conclude long-term contracts that ensure the payments for the infrastructure services. Examples for such long-term contracts can be power purchase agreements (PPAs) in electricity production or toll agreements for the use of transportation services. The relative instability of the economic and political environment in low- and middle income countries is a significant barrier to conclude such contracts and even if they are concluded, investors perceive a relatively high risk that such contracts may get terminated during the project life time (Comello et al., 2017; Shrimali and Reicher, 2017). Providing sufficient assurance to investors that long-term contracts are honoured will therefore significantly contribute to de-risk infrastructure investments.

Therefore, we defined the following challenge: How might we increase the possibilities for foreign investors to conclude secure, long-term contracts in host countries in order to create more bankable projects?

3.4 Retain states' ability to regulate

The second challenge that constitutes a barrier for the universality of our treaty proposal is to adequately retain states' ability to regulate under the treaty (I 08, I 10, I 11).

The ability to regulate has become a significant issue over the last decades in international investment law. Investor state dispute settlement ("ISDS") has become controversial in both the public and the legal debate. Articles and studies have been published claiming or disclaiming (Baetens, 2011; Cordonier Segger and Kent, 2011; Schill, 2007; Sornarajah, 2006) that the current ISDS structure causes a "regulatory chill" swaying developing states against updating their regulatory frameworks, or, in fact ,a "judicial chill" as in the case of Egypt, which changed its laws to prevent judicial expropriations (Hazzaa and Kumpf, 2015), all out of fear of facing expensive arbitration proceedings and damages awards. The heightened sensitivity and focus on the right to regulate of states has also had an impact on the global climate change negotiations. Some experts attribute the failure of the Copenhagen Conference of the parties (COP) in 2009 to the unwillingness of states to agree on a global top-down instrument to solve global issues (Falkner et al., 2010; Rayner, 2010). Subsequently necessitating a new approach, the Paris Agreement signifies a paradigm shift from a top-down approach aiming towards a global solution mechanism with a bottom-up approach where the signatory states come up with best practices for themselves.

We therefore conclude that, to be adopted by states, the model treaty needs to consider adequately the regulatory power of states, offering opt-in/opt-out possibilities in the treaty in relation to certain controversial issues. At the same time, the treaty needs to give sufficient assurance to investors that host states maintain their commitment to the goals of the Paris Agreement and the SDGs.

Summing up, we defined the following challenge: How might we make sure that host countries retain regulatory space to act ensuring that investments are adequate to host country needs?

3.5 Strategic rationale for our treaty proposal

In light of the challenges that need to be overcome by the treaty to increase foreign investment in climate change mitigation and adaptation, we decided for the following strategic rationale for the design of our treaty proposal:

(1) We propose a comprehensive but stringent definition of climate change mitigation and adaptation investments. This ensures that only "the right" investments can enjoy the protections of our treaty.

(2) We grant these investors extensive protection that enables them to develop bankable investment opportunities. We also provide a comprehensive financing mechanism with a flexible tool kit of de-risking and funding instruments to be applied according to local needs. At the same time, we ensure that these investments serve host state needs and contribute to climate change mitigation and adaptation over the lifetime of the investment.

(3) We minimise the need for new institutions and authorities. We build on the existing climate policy architecture to enable prompt implementation of provisions under the treaty. This ensures that states are more likely to agree to join our multilateral treaty proposal. In order to keep transaction and enforcement costs as low as possible, we utilise the latest technological innovations in the area of distributed ledger technology.

4 Results / Approach

In the following, we describe the way by which we addressed the defined challenges in our treaty proposal. For that, we focus on articles in the treaty we deem most relevant due to their innovativeness and their contribution to our strategic rationale. First, we highlight which of the identified key challenge(s) is addressed by the specific Article. Then, we describe the rationale of the proposed Article and provide reasons for the specification we chose. Afterwards, we describe the mechanism over which we believe the Article contributes to solving the identified key challenge.

4.1 Definition of investments in climate change mitigation and adaptation (Article 2)

Our definition of investments in climate change mitigation and adaptation is the direct response to the first key challenge and a necessary step to allow us to propose more extensive protection mechanisms in our treaty. With our definition of investment under Article 2 ("Investment") we propose a definition that (1) encompasses investments that contribute to either climate change mitigation or adaptation (or both) and (2) is dynamic, i.e. the scope of investments protected under our treaty can adapt over time.

The core mechanism for the scope and the flexibility of our definition is the need for compliance with the Nationally Determined Contribution (NDC) (UNFCCC, 2018a) and potential national legislation, such as national climate strategies or action plans or similar[2], of the Host Contracting Party (Article 2 "Investment" (c)). NDCs establish the link between the Paris Agreement, for the implementation of which they are intended and that is why they are deposited with the UNFCCC, and national/local needs as defined by the Host Contracting Parties. Thus, in the absence of globally agreed methods or tools to evaluate suitability of investments to the below 2°C target of the Paris Agreement (I 04; Höhne et al., 2017), by linking investments to the NDCs our proposal ensures alignment with both the objectives of both the Paris Agreement and local requirements under our treaty.

[2] For example Mexico (SEMARNAT, 2018).

Aligning the investment definition to the NDCs under the Paris Agreement, however, has one drawback that needs to be overcome: The level of detail provided in NDCs differs strongly among countries (I 02, I 04, I 20). While some countries break down their emission reduction targets to specific sectors or even elaborate on roadmaps to achieve these (UNFCCC, 2015b), other NDCs are very basic and only mention the intended contribution by the state (UNFCCC, 2015c). In order to enable investors to prove their compliance with the Host Contracting Party's NDC, we propose a method for verifying compliance of investments to the NDC reduction or adaptation targets (cf. Annex 2). In this way we ensure that investments will contribute to the Host Contracting Party's NDC over the whole life time of the investment.

In Article 2 "Investment" (d) we further specify climate change mitigation and adaptation for the purpose of our treaty. While we largely adopt the definition for investments in climate change mitigation that is proposed by Höhne et al. (2017), there is currently no agreed definition for investments in climate change adaptation, besides ongoing efforts of the Multilateral Development Banks to agree on general principles (ADBG, 2015). Therefore, we needed to propose our own principles for climate change adaptation activities. The central element of these principles is the verified exposure of the investment to climate risks. These risks can have a direct physical effect on the asset (i.e. damages) or impact construction and operations (e.g. interruptions in business continuity) and thus lead to challenges for competitiveness and profitability. Climate risks include both specific occurrences such as extreme weather events and slow onset changes such as temperature increase over time. According to Agrawala et al. (2011), the three main factors affecting an investor's ability to address climate risks are capacity, incentives and perspectives (such as previous experience with natural disasters). We acknowledge that adaptation can take very context-specific shapes and forms, and thus lay out the requirement for a climate risk assessment which leads to full or partial investments that clearly address the identified risks and impacts through specifically designed measures. To avoid "green washing" of investments, meaning the special protection of otherwise non-climate friendly investments by adding a little adaptation component, only the specific component is covered by this treaty, unless the entire investment addresses climate adaptation risks.

Besides their specific contribution to climate change mitigation and adaptation, we require investments under our treaty to also facilitate the achievement of wider environmental and social goals in the context of sustainable development, such as the Sustainable Development Goals. To ensure that investments follow best practices in environmental and social standards and do not create adverse impacts, as laid out by Article 2 "Investments" (e) we stipulate that investments need to be managed under the International Finance Corporation's Performance Standards (IFC, 2012a) or similar standards. These standards set clear, verifiable rules for the design and operation of investments and thereby ensure that investments also contribute to other environmental or social objectives, such as benefitting local communities.

Finally, investments that should fall under the protection of our treaty need to be registered on the distributed ledger that we propose as part of our proposal (Article 2 "Investments" (f)). Similar as the adherence to the International Finance Corporation's Performance Standards, the registration on the ledger ensures that investments can be tracked during operation.

Summing up, the strict investment definition that we propose in our treaty ensures that only the "right" investments are protected through our treaty.

4.2 GCF as neutral broker (Article 17)

Article 17 defines the financing mechanism which backs up the treaty. While protections are important to assure reliability of the investment environment to the investor, the experience with climate finance has shown that concrete incentive mechanisms are needed to make

climate friendly investment happen (Venugopal and Srivastava, 2012). Therefore, Article 17 addresses the challenge of “limited access to capital due to perceived and actual risks” (chapter 3.2) by providing funding and de-risking mechanisms. It specifically serves the needs of lower middle and low-income states and aims at “levelling the playing field” for investments in such more challenging geographical contexts.

To achieve this, we design a financing mechanism through which public funds can be used to incentivize green private sector investment, with the aim of achieving the highest possible leverage (meaning, using the minimum amount of public funds to mobilize as much as possible private finance). While today many bilateral and multilateral finance institutions such as Multilateral Development Banks provide similar instruments, the scope and ambition of this treaty is global in reach and nature. Thus, the financing mechanism “Green Climate Stockholm Facility” is housed at the Green Climate Fund (GCF), which was set up by the 194 countries who are parties to the UNFCCC in 2010 as the Convention’s main financial mechanism. The GCF provides funding for both mitigation and adaptation. The GCF seeks to align with the priorities of developing countries through the principle of country ownership and it is already set up to be able to provide the instruments we foresee for support of this treaty, namely grants, loans, equity and guarantees. Thus, the GCF would be the entity best placed to provide financing from one “pot” to investors seeking to invest in any of the UNFCCC’s 194 member countries (I 20).

So far, the GCF channels its funds only through so-called “Accredited Entities” (Green Climate Fund, 2018), so the interested investor would need to partner with any of those. Both national entities and private investors can apply for funding from our Stockholm Facility. Private sector investments often happen at a preparation and investing time frame that does not match the long approval procedures by multilateral public institutions. Thus, we suggest the GCF’s member countries provide delegated authority to the Stockholm Facility to make investment decisions in a reasonable time frame for private investors. The GCF Secretariat will manage the Stockholm Facility and it will create an Executive Committee which will make the funding decisions. The Executive Committee shall include representatives from the Trustee, GCF Management, the GCF Board of Directors and the Treaty Committee. Investment decisions shall be made on a rolling basis, seeking regional balance as much as possible.

Any investments supported by the Stockholm Facility shall apply financial, fiduciary, environmental, social and corporate governance international best practices and be subject to the habitual GCF due diligence process.

The aim for supporting investments through the Stockholm Facility is not to crowd out the private sector. Public resources are a scarce good and (re)capitalization will always be challenging; thus the Facility must operate strictly under the principle of minimum concessionality. This means the Facility will only provide a mitigating instrument for the most salient and clearly defined risks that prevent a certain investment from happening, and at the minimum amount needed to lift the investment over the hurdle from non- to bankability.

To address those risks, the Stockholm Facility offers a broad range of instruments to adjust to the different needs of investors and adaptable to the specific risks and local circumstances. The tools can be applied to support any technology and for both climate mitigation and adaptation, and include:

- Concessional loans which are loans at a lower interest rate than market price, thus lowering the cost of capital, or other concessional characteristics such as longer tenors or grace periods which allow the investor to spread out repayments over a longer period of time;

- Guarantees as a less capital-intensive alternative to loans because disbursements only happen when the guarantee is called, yet they provide a strong credit enhancement and thus signal of comfort to investors and project financiers and significantly de-risks investments. Guarantees help overcome a low risk appetite of commercial lenders and thus incentivize commercial funding to become available where commercial banks otherwise would not enter. Stockholm Facility Guarantees can back up loans, including in local currency and bond issuances as credit guarantees which pay all shortfalls of principal and/or interest up to a pre-determined amount; project performance which help mitigate cost overruns due to construction delays or similar; as well as payments by off-takers, a key risk for many PPA based energy generation projects. Political risk guarantees and risk insurance can help investors to gain the confidence to venture into unknown markets particularly in developing and emerging countries.
- Equity and quasi-equity, mezzanine financing which provide long-term growth opportunities for firms coupled with the opportunity for the firm to receive knowledge transfer through the Stockholm Facility as an equity investor who might have a seat at the Board or otherwise provide operational and strategy input.
- Currency hedges help firms that will receive revenues in local currency (for example under a PPA) by offering long-term swaps between the local currency and the investor's currency of reference.
- Grants and technical cooperation, which are key instruments to provide knowledge and capacity building. Those instruments can be used to pay for studies, including early stage technical or environmental feasibility studies, consultants that provide capacity building directly to an institution such as a national agency, or other forms of advisory.

We also foresee a capitalization and replenishment process which seeks to (1) ensure the financial stability of the Facility and sufficiency of funding; (2) acknowledge donor countries fiscal constraints by splitting the capital into paid-in and callable capital; (3) linking the Facility's ongoing replenishment through percentage contributions of Annex I Home States to the success of Home State Investors taking advantage of this treaty, allowing for reasonably smaller volumes of additional funding being contributed on a rolling basis. We believe Home States will be willing to replenish the fund because the Ledger we propose is a "non-corruptible" verification that investments are made and tracked.

The 60-day public disclosure of any investment proposal before approval by the GCF is in line with most Multilateral Development Banks[3]. While disclosure requirements currently range from between 120 days (Pelosi Amendment (Sanford and Fletcher, 1998)) and 30 days (for example IFC Access to Information Policy for lower risk projects), we believe 60 days strike an adequate balance between providing transparency and opportunity for communities to be duly informed about potential risks and impacts arising from a project, while at the same time adjusting to the fast pace of private sector investments.(I18, I20).

Article 17, in sum, addresses the challenge of lack of access to capital by providing a flexible tool box of financial mechanisms that can shift a project proposal from not viable to viable by de-risking the project and at the minimum cost for public budgets.

[3] See for example IFC's Access to Information Policy which stipulates 60 days for environmental and social high risk (Category A) projects and 30 days for lower risk projects (IFC, 2012b)

4.3 Conversion of host contracting party subsidies (Article 15)

In Article 15 of our model treaty we propose a conversion of host-state subsidies to an investment grant as an additional mean to address the challenge of limited capital access due to perceived and actual risks. Over the last decades, many countries have introduced subsidies and support schemes, for example in the area of renewable energies, to support the domestic deployment of climate friendly technologies. These policies may take different forms and specifications. In some cases, however, policies that have been introduced needed to be changed and withdrawn since they caused social, political or technical problems. A prominent example from the field of renewable energy support is the cut of the feed-in tariffs[4] in Spain after an excessive growth of installations over the previous years (Río González and Mir-Artigues, 2014). Sudden changes in subsidy schemes naturally diminish investors' confidence in the reliability of the institutional environment of the country they are investing in. Our proposed conversion of subsidies maximises the security of investors to be able to receive host state support (I 02, I 11). At the same time, investment grants have been shown to be specifically supporting smaller investors since the grant reduces the amount of debt needed to finance an investment (I 02, I 03).

Of course, the gain for investors is, to a certain extent, a pain for the host contracting parties of our treaty. Therefore, we propose several specifications that favour the contracting parties to accept such a provision:

- We limit the investment grant to a maximum of 60% of the investment value which is approximately 10% below the usual net present value of the investment considering a 15-year depreciation period (I 12). In addition to that, the level of the investment grant will be adjusted by inflation to ensure an equal treatment of domestic investors who receive the subsidies versus foreign investors who may choose between the investment grant and the subsidies.
- We spread the payment of the grant over five years in order to give assurance to the contracting parties that the investments will operate as predicted.
- We use the distributed ledger we propose as part of our treaty as a non-corruptible means to verify the performance of the investments, if the performance can be measured (I 09).

Summing up, we believe that the option to choose between existing subsidies of a host contracting party and an investment grant based on the conditions set out in our treaty has the potential to significantly reduce the actual and perceived risks for climate change mitigation and adaptation investments.

4.4 Compensation for default of an off-taker (Article 16)

Article 16 of our model treaty proposes a compensation mechanism that is specifically designed for infrastructure investors to address the issue of insufficient trust in the conclusion of long-term contracts. The Article provides a definition for the default of an off-taker[5] of an infrastructure product or service (Article 16.2.) and proposes a compensation mechanism through which the investor gets reimbursed for his lost revenue by the host contracting party or the Stockholm Facility (Article 16.2. 16.6.). We propose this Article since the default of an off-taker is considered a salient risk for the operation of climate change mitigation investments (I 02, I 06, I 07, Shrimali and Reicher, 2017). At the same time, a clear definition of an off-

[4] A feed-in tariff is a fixed remuneration for produced electricity from renewable energy sources.

[5] An off-taker is an entity which purchase an investment's production or services on the basis of a contractual agreement over a specified period of time.

taker's default and resulting remedies are standard components in off-taker agreements between two business partners, as for example a Power Purchase Agreement.

We restricted the Article to only apply to state-owned or state-controlled off-takers (Article 16.1.). This is reasonable since (1) off-takers of infrastructure products or services, specifically in the energy sector, are often state-owned or state-controlled and (2) host contracting parties are unlikely to guarantee for private entities that are not under their control. We set the time periods for the occurrence of default (Article 16.2.) and the required repayment by the host contracting party (Article 16.4.) bearing in mind the financial needs of the investor but also the time needed by the host contracting party to substantiate the claim by the investor. Like in the previous Articles, we make use of the distributed ledger for the verification of the payments (Article 16.2.), notifications between investors, host contracting parties and the Stockholm Facility (Articles 16.3. and 16.4.) as well as automatically executed payments from the Stockholm Facility with the use of a smart contract (Article 16.4.).

Specifically through the automated payment process of the Stockholm Facility, we believe we can credibly increase the trust of investors in long-term contracts.

4.5 Measurement, reporting, verification and monetization with a distributed ledger (Article 29)

Article 29 of the treaty defines the set-up and use of the distributed ledger (the Stockholm Ledger) that we intend to use as a tool for the measurement, reporting, verification and monetization within our treaty. As such, the ledger does not directly address a specific challenge, but it serves as an important means (1) to establish trust between investors and contracting parties as well as (2) to keep the transaction and enforcement costs as low as possible (I 09).

A distributed ledger is the generic term for what is publicly known under the name blockchain. Fundamentally, distributed ledgers are mechanisms to record, store and act upon data in a decentralized and non-corruptible way. The underlying innovation that enables these features is an algorithm-supported process. The currently best-known application for distributed ledgers is to use it as an alternative currency and transaction system (e.g. bitcoin, ethereum). Some of these ledgers have a significant energy consumption, but there are already alternatives on the market that tackle this issue, using, for example, a tangle protocol as is the case for IOTA, instead of a blockchain protocol.

Mobilizing financial resources for mitigation and adaptation efforts, improving transparency of climate action and measuring and managing greenhouse gas emissions are key priorities of the Paris Agreement. The Paris Agreement relies heavily on nationally determined contributions, self-reporting by state parties, peer or expert progress review, as well as facilitating bottom-up climate action by non-state actors and civil society. Distributed ledger technology may be used to facilitate meeting the reporting, accountability and transparency requirements of the Paris Agreement (Climate Ledger Initiative, 2018). Developing a distributed ledger of such data may assist in the global stocktaking and help to encourage increased ambition by contracting states. A first attempt to do that has been started in December 2017 with support of the UNFCCC (UNFCCC, 2018b).

As noted previously, we propose a distributed ledger for the measurement, reporting, verification and monetization of investments under our treaty. In order to do so, the treaty committee (Article 31) shall coordinate the set-up of the ledger after the treaty coming into force. Besides using the ledger to manage the investments under the treaty, the ledger data can also be used to realize additional benefits for investors, such as creating tradable certificates of origin. Certificates of origin are, for example, used in the area of renewable

electricity generation to attest climate friendliness of consumed electricity. Currently, there are many certificate markets around the world and purchase of a certain share of certificates is mandatory in some legislations (Bird et al., 2003). To provide additional incentives for investors, we propose that contracting parties open their certificate markets for certificates that are produced under our treaty. We believe that this can lead to a significant increase of investments since locations with good resource potential are already largely used in developed countries.

Summing up, the proposed ledger serves as a minimum-cost management tool for our treaty that also opens up additional opportunities for investment monetization.

4.6 Charge to be paid for breaches of treatment provisions (Articles 10.4, 11.2)

Although we have chosen to include all substantive investment protections traditionally seen in investment treaties in one way or the other, two innovations specifically designed to meet the purpose of the treaty should be pointed out.

First, in Article 10, which provides for compensation to be paid for expropriation, we have expressly specified two different compensation standards: Firstly, legal expropriations in accordance with the Article are to be compensated using the usual treaty standard of fair market value. Secondly, expropriations that do not fulfil these requirements are to be compensated at the customary international law standard. Moreover, in accordance with Article 10.4, the latter attract a charge of 3% above the compensation awarded to be paid by the violating Contracting Party into the Stockholm Facility under Article 17. Such payment supports Contracting Parties from non-Annex I countries under the UNFCCC in their efforts to increase climate change mitigation and adaptation investments.

Second, in Article 11, we have included an explicit provision that certain other breaches under the treaty are to be compensated in accordance with the customary international law standard. Mirroring Article 10.4, Article 11.2 likewise provides for a 3% charge benefitting the Stockholm Facility.

The charges provide an additional incentive for Contracting Parties not to violate the treaty, while at the same time not benefitting the claimant investor directly, thus not unduly triggering unmeritorious claims.

In sum, the provisions incentivise compliance with the investor protection provisions, with the charges paid into the Stockholm Facility, directly contributing to meeting the challenge of lack of access to capital.

4.7 Right to regulate (Article 20)

Over the years, the stakes at issue in investment treaty proceedings have diversified and increasingly concern the provision of public goods, such as water and sanitation, or the environment, such as the treatment of waste (Elrifai, 2017). They concern the ambit of regulatory powers of states. As highlighted in Section 3.4 above, one of the key challenges of investment treaties and their past interpretation has been to safeguard that states adequately retain their right to regulate while ensuring investment protection.

Article 20 is derived from the language used in Article 8.9 of the draft Comprehensive Economic and Trade Agreement between the European Union and Canada (CETA). CETA Article 8.9 is the result of heavy negotiations on how to achieve such balance. We consider the Article to reflect the current state of the art on the right to regulate. This has also been confirmed by Experts we interviewed (I 08, I 22, I 23). We find that it strikes a good balance and addresses actual concerns that arose in the aftermath of (in)famous arbitration awards,

including Santa Elena v. Costa Rica (ICSID Case No. ARB/96/1, April 2000) and Metalclad v. Mexico ((ICSID Case No. ARB(AF)/97/1), August 2000).

Our Article seeks to ensure that legitimate, genuine, non-arbitrary and proportionate state measures instituted to meet evolving health, safety, labour or environmental standards will not lead to a state being required to compensate foreign investors for any ensuing damage to the value of their investment.

Following in-person interviews with experts I 11, I 12 and I 16, one recent development was identified as highly problematic and current in the face of such Article: the recent drive to deregulate and roll back of climate change mitigation and adaptation efforts by the current US administration (cf. Columbia University, 2018).

The deregulation advances and expands fossil fuel development by reducing its costs. This, in turn, reduces the competitiveness of carbon-friendly energy production, slowing down innovation and deployment in the area. The wording of most state of the art investment treaty provisions affirming the state's right to regulate would likely allow the US administration to avoid compensating a foreign investor for the de-regulation's impact on the value of climate change mitigation and adaptation investments. It would frustrate the very purpose of our treaty.

Article 20.4, excludes regulatory measures that prevent a state from achieving its NDCs under the Paris Agreement from the ambit of the Articles' protection, and would accordingly not cover the US deregulation or any similar exercise. Article 20.4 however also considers the lessons learnt from the recent investment treaty proceedings that concern the cut-back of the Spanish incentive system for investments in renewable energies (Garcia-Castrillon, 2016). Taking an approach focused on the impact of the scale back, the Spanish incentive rollback would be unlikely be caught by the Articl 20.4 exception. The rollback was instituted to avoid the tariff deficit caused by the reduction in electricity consumption due to the economic downturn, which does not impact attainment of Spain's NDC. A result-based approach benchmarked on the NDCs is also in line with ensuring that the treaty is aligned with the aims of the Paris Agreement.

In sum, the provision meets the challenge to ensure that host countries retain regulatory space to act to take account of a host country's investment needs and commitments in the area of climate change mititgation and adaptation.

4.8 Market access/ exception to the bar of performance requirements (Articles 5, 6)

Our goal of swift roll out of climate change mitigation and adaptation finance, is well served by the inclusion of explicit provisions on market access and the prohibition of performance requirements, while at the same time mandating that investments are managed in accordance with best corporate practice through the IFC performance standards. Articles 5 and 6 are derived from Articles 8.4 and 8.5 of CETA, but leave out any reference to the prohibition of standards requiring the transfer of technology, a production process or other proprietary knowledge. In certain circumstances the transfer of technology may accelerate climate change mitigation and adaption efforts, and accordingly a strict exclusion has been avoided.

4.9 Exceptions/ options fit to the differing needs of states (Articles 9, 18, 19, 28)

Our proposed treaty is a multilateral treaty. Accordingly, it must reflect the many different and diverging interests and needs of Contracting Parties.

(a) Reservations and exceptions (Article 19)

In that vein, Article 19 offers Contracting Parties to carve out certain areas from the investment establishment and equal treatment provisions to take account of existing non-conforming

measures (Articles 5 on Market Access, Article 6 on Performance Requirements, Article 7 on National Treatment and Article 8 on Most-favoured-Nation Treatment).

(b) Further elements of FET to be agreed (Article 9)

Article 9, which is derived from CETA Article 8.1, allows under paragraph 2(f), Contracting Parties to agree further or diverging elements for the FET standard in Annex 3.

(c) Optional umbrella clause (Article 18.2)

In light of the often-legit controversies surrounding the application of so-called umbrella clauses by arbitral tribunals (Sasson, 2017), we have made the umbrella clause (Article 18.2) an opt-in.

(d) Optional multilateral arbitration agreement (Article 28)

As a seemingly radical departure from the maxim that two parties must generally give agreement to be bound by an arbitration agreement, we have included in Article 28 a largely free-standing optional multilateral arbitration agreement. Article 28 would allow an investor and a national of the host state to resolve by international commercial arbitration under the SCC Rules a commercial dispute in relation to an investment, if it meets the strict definition under our treaty. Article 28 thus provides an arbitration option, even where the national and investor have not explicitly agreed to arbitration within their commercial relationship. The Article however also allows nationals and investors to explicitly exclude the provision.

We consider that the radical character is moderated given that the notion of consent to investor state arbitration in international investment treaties is also artificial at best (Paulsson, 1995). As Gary Born highlights, the reasons for having such an agreement is the very same as the reason for including investor state dispute resolution (ISDS) in investment treaty arbitration (Born, 2013): international arbitration is the least bad mechanism for resolving international disputes, whether commercial or treaty-based. Giving investors the option to arbitrate a dispute arising out of an investment may help to attract foreign investment. The opt-in under Article 28 may be considered by Contracting Parties particularly keen to entice foreign investors to invest in climate change mitigation and adaptation and wanting to offer a further layer of dispute resolution.

The inclusion of the multilateral arbitration agreement as a free-standing provision and opt-in thus meets both our goal to increase foreign investment flows of mitigation and adaptation finance, while allowing states and commercial actors to opt out of it.

4.10 MFN clause drafted to prevent non-climate change investments from benefiting from treaty protection (Article 8)

The inclusion of MFN clauses in investment treaties and their interpretation by arbitral tribunals has been subject to controversy (Batifort and Heath, 2017; Schill, 2017). We consider that the MFN clause nevertheless serves the important function of ensuring that investments under the model treaty are not disadvantaged compared to third party investors in like circumstances by contracting parties. Accordingly, we have included an MFN clause in Article 8.

Our concerns are however twofold:

First, we consider that the balance between an investor's right to protection and a state's right to regulate may be unfairly tilted, in circumstances where an MFN clause is used to import or export dispute settlement provisions or treaty access requirements. This possibility has been restricted in Article 8.2

Second, the expansive substantive protections under our model treaty are specifically tailored to benefit only investments that further climate change mitigation and adaptation in the host

contracting party state. We have no intention for third party investors to benefit from these protections under the treaty unless the investor also meets its contribution to the bargain. This requires that investors trying to import the substantive provisions under our model treaty into other treaties cannot do so without also importing our stringent investment definitions. Care has been taken to make clear that the various clauses directly refer to crucial defined terms such as the definition of INVESTMENT. Accordingly, clauses should not be imported without those. Article 8 also ensures that investors are not offered the possibility to import substantive host state obligations from other treaties absent measures adopted by the host state pursuant to those very obligations.

In sum, the chosen wording of the MFN clause ensures that investors under our treaty may benefit from better treatment under third party agreements while remaining within the scope of our treaty's goals.

4.11 Dispute settlement (Articles 22, 23, 24, 25, 26)

(a) Investor-state dispute settlement (Article 22)

Despite heavy criticism having been levelled against investor-state dispute resolution in investment treaties, our research as well as in-person discussion with experts (I 10, I 16, I 17, I 18, I 21, I 22, I 23) suggests that the effectiveness of the treaty is best served by allowing investors to enforce their rights via ISDS. In line with other investment treaties we have allowed investors to choose between either SCC or ICSID arbitration or ad hoc arbitration.

(b) UNCITRAL Transparency Rules (Article 22.4)

A criticism regularly highlighted as a weakness of the ISDS system in the past is that ISDS causes disputes often affecting public goods to be decided behind closed doors lacking transparency (Calamita and Zelazna, 2016; Malintoppi and Limbasan, 2015). In Article 22.4, we have accordingly made the application of the UNCITRAL Transparency Rules mandatory to any ISDS proceedings under the treaty. Their application has mainly two desired consequences:

First, comprising a set of procedural rules that provide for transparency and accessibility to the public of treaty-based investor-State arbitration, the application of the UNCITRAL Transparency Rules insures that non-disputing contracting parties can take better control of the Treaty's interpretation. Second, third-parties, such as civil societies and local population that are directly affected by the investment are given wide access to the proceedings, with amicus briefs explicitly authorised.

(c) Tainted investments (Article 22.6)

Article 22.6 of our model treaty builds on Article 8.18.3 of CETA to prevent fraudulent or manipulative claims or those amounting to an abuse of process. Article 22.6 expands the CETA provision and instructs the arbitral tribunal to presume an abuse of process, where an organization has been restructured after a dispute arose to meet the jurisdictional requirements of the treaty.

Although commentators have argued that investment arbitration proceedings no longer favour investors, but instead regularly allow claims to be thrown out for reasons of wrongful behavior on the part of the investor (Llamzon and Sinclair, 2015), we do not see significant evidence to support that claim. The assessment by Emmanuel Gaillard that there are increasing incidences of abuse of process which need to be tackled (Gaillard, 2017), has been shared by the interviewed experts (I 21, I 22, I 23, I 24, I 25) and also matches our own experience.

We consider that excluding tainted investments assists in the fight against corruption, by dis-incentivizing the investor from cutting corners. Not awarding treaty protection furthermore avoids an investor being compensated for the value of an investment after having acquired it at a discount through fraudulent or corrupt means. Given the strong investment protection and incentives offered under the treaty, we consider that any effort needs to be made to exclude "investments" that do not deserve them.

(d) Consolidation (Article 23)

Article 23 provides an in-detail procedure for consolidation. Article 23 builds on a similar provision in CETA Article 8.43. It aims at ensuring due process rights for investors, efficiency of the dispute settlement provision while avoiding severe forms of parallel proceedings that have in the past been considered by some commentators to amount to abuse of process (Gaillard, 2017; Monichino and Fawke, 2012). Article 23 gives both the claimant investor and respondent contracting party the right to request consolidation. It thus allows a respondent contracting party to avoid having to face multiple parallel proceedings in relation to the same alleged breaches and/or facts. On the other hand, the provision allows investors to pool resources by consolidating parallel proceedings, thus reducing costs. While arbitral rules often include their own set of rules on consolidation, they are seldom detailed and regularly lead to a deadlock, where parties to the proceedings are unable to reach consensus. Our proposed Article aims to avoid this issue by allowing the consolidation request and the claims thereunder to be considered by a consolidation tribunal constituted under the PCA Arbitration Rules, when the disputing parties are unable to agree on consolidation. Experts questioned on the issue of consolidation provision considered the inclusion important to balance investor and state rights (I 17, I 21, I 23).

(e) Unmeritorious claims (Articles 24 and 25)

While ICSID Arbitration Rule 41(5) provides an expedited procedure to dispose of unmeritorious claims at the preliminary stage of a proceeding for manifest lack of merit, the provision has seldom been used (however recently in *Elsamex S.A. v. Honduras (ICSID Case No. ARB/09/4)*). While ICSID Arbitration Rule 41(5) was intended to serve the principles of timeliness and effectiveness, the Rule has been criticised for merely adding an additional procedural level serving only to delay proceedings and increase costs (Schreuer, 2009).

We have accordingly included explicit provisions that aim to address that concern. We have also included explicit provisions, because Rule 41(5) would be unavailable to the respondent contracting party in arbitration proceedings, if ad hoc arbitration or arbitration under the Arbitration Rules of the Stockholm Chamber of Commerce were chosen by the claimant investor under Article 22.2 of our treaty.

Our inclusion of a fast track procedure to dispose of a claim without legal merit (Article 24) and those unfounded as a matter of law (Article 25) is intended to strike a balance between the need to save time/costs and due process guarantees in the process of treaty enforcement. The articles are intended to provide a fast track system for rejecting frivolous claims to counteract the practice of investors filing an investment claim, to improve their bargaining position vis-a-vis the contracting state, even where their claim is highly questionable.

Articles 24 and 25 largely reflect Articles 8.22 and 8.23 of CETA and similar provisions of the EU-Vietnam FTA. However, in Articles 24.5 and 24.5, we provide strict time limits for the arbitral tribunal to issue the decision/arbitral award measured from the time the objections are filed. We consider such time limits adequate seeing that, where a claim appears so complex that it may not be disposed of swiftly, the claim should not be so disposed of. The standard of proof to succeed under the Articles is thus very high and ensures that the provisions weed out blatantly frivolous and manifestly unmeritorious claims. In that regard, the provisions also

benefit the claimant investor, who will be spared from investing large sums in the prosecution of a hopeless case. It also puts pressure on the arbitrators to move proceedings forward swiftly.

Summing up, the provisions serve the goal to ensure effective enforcement of treaty rights, thus reducing the risk profile of climate change mitigation and adaption investments, while preventing unmeritorious claims.

(f) No interference with sovereign debt restructuring (Article 22.7)

The decision by the Tribunal in *Abaclat and Others v. Argentine Republic* (ICSID Case No. ARB/07/5) allowing 60,000 investors to bundle and bring their claims before a single arbitral tribunal, has been severely criticised for favouring bondholder protection at the cost of financial policy of defaulted sovereigns. Investment arbitration has the potential to adversely affect the orderly implementation of sovereign debt restructuring and incentivises holdout arbitration (Nakajima, 2018; von Bogdandy and Goldmann, 2013). Commentators have suggested that arbitral tribunals deciding an investment dispute under a treaty that makes no mention of sovereign debt restructuring issues, should under general principles of international law favour interpretations that do not thwart debt restructurings (Strong, 2012). Seeing however that there is no clear consensus on the issue and in light of the diverse legal backgrounds of arbitrators, we consider the better approach is a clear treaty stipulation.

Article 22.7 follows the approach taken in CETA Article 8.18.4 and Annex 8-B. The provision insures that an investment claim is partially rejected when the claim is based upon debts for which a restructuring has been agreed by 75% plus of the bondholders. In that instance, only a claim alleging discriminatory treatment may be brought to ISDS, but no others. This ensures that where a debt restructuring discriminates a foreign debtor, the latter may still seek justice through international arbitration.

The provision balances creditor protection and sovereign autonomy of states and prevents international arbitration to be misused by holdout creditors, who regularly jeopardise the success of sovereign debt restructurings.

(g) Time of Limitation - Ensuring efficiency of proceedings (Article 22.5)

The majority of investment treaties do not provide for a limitation period within which an investor may bring a claim against a contracting party. Adequate limitation periods however ensure that the reparation of wrongs is sought swiftly. This helps to ensure that a claimant may precisely pinpoint and back up its claim and a contracting party likewise able to defend itself. Witnesses being able to attest to the events may still be accessible; documents will be less likely to have been lost and thus available for disclosure and evidentiary purposes. Article 22.5 provides for a 6-year limitation period. The Article reflects a similar provision in the 2016 Georgia-Switzerland BIT.

The provision strengthens due process rights and the efficiency of proceedings while not unduly disadvantaging the investors.

(h) Fair apportionment of costs (Article 22.11)

Under most arbitration rules and investment treaties, an arbitral tribunal enjoys wide discretion as to the apportionment of legal costs, many are silent thereon. Article 22.11 prescribes that the losing party should pay the costs, subject only to exceptional circumstances. We have included this stipulation because research suggests that States have often been stuck with their legal costs, even where a State managed to defeat a claim.

We consider that the clear rule in 22.11, by which costs must follow the event, encourages settlement where the violation of the treaty is evident. At the same time, Article 22 decreases

the incentive for investors to file frivolous and unmeritorious claims. The Article reflects the approach taken by CETA (Article 8.12.5).

(i) Mediation (Article 26)

Article 26 includes an explicit mediation option to the parties to ensure that resorting to mediation is not seen as an indication of weakness in the claim and all the while allowing the claimant to stop the time of limitation running and engaging in resolving their claim with the respondent Contracting Party.

4.12 Binding interpretations of the treaty (Article 30.6)

Article 30.6 explicitly empowers the contracting parties to adopt interpretations of the treaty, which are binding on arbitral tribunals seized of disputes under the treaty. This provision is intended to give adequate control to the contracting parties to ensure a consistent jurisprudence under the treaty in accordance with the shared intention of the majority of contracting parties.

5 Conclusion: How does the model treaty meet the evaluation criteria?

5.1 Compatibility

The proposed treaty is fully compatible with the Paris Agreement and the Sustainable Development Goals because it builds on the principles stipulated therein. It is based on the principle of country ownership and “common but differentiated responsibilities”, which are translated into contractual requirements through the compliance requirement with the NDC and the characteristics of the financial support to Non-Annex I Countries through the Stockholm Facility housed at the GCF, which, to close the circle, is the main financing mechanism of the Paris Agreement and the UNFCCC. This financing mechanism supports the capacity of states, particularly Non-Annex I States, but also Annex I States indirectly by providing support to investors from those states, to achieve their climate objectives.

We purposefully provide definitions and mechanisms which are flexible, i.e. the treaty remains valid with changes in international climate law and national climate and energy related legislation. We do not create cost-intensive additional authorities and institutions. Where needed, we establish lean and decentralized solutions like the distributed ledger which provides trustless interactions between the contracting parties as well as the investors and the contracting parties. Considering the need under the Paris Agreement to measure, report, verify and monetize large amounts of climate-related data in a transparent and incorruptible fashion and for coordinated action of participants at arms-length, our Stockholm Ledger is an opportune fit to meet that challenge.

5.2 Efficacy

We are confident the model treaty will lead to a significant increase in green investments. The treaty provides special protections, but also strong incentives – “carrots and sticks” - to overcome investment hurdles. Building on our collective professional experience “in the trenches” of climate friendly investments, with climate related technology and the investment treaty arbitration as well as commercial arbitration, we demonstrate a solid understanding of the risks and barriers (see inter alia chapters 3.2, 3.3) as well as measures to mitigate those barriers, and include provisions in the treaty to address those risks (Table A 1). The financial mechanism designed will lead to a high leverage of limited public funding and mobilization of

private capital, using recent and tested mechanisms (IADB, 2016), but applying them in an innovative way to the framework of a Multilateral Investment Treaty. The financing mechanism will favour particularly developing and emerging countries and thus level the playing field - to a certain extend.

The treaty is purposefully investor-friendly, while at the same time maintaining the Host States sovereignty to define their individual climate paths and ability to regulate accordingly. The model treaty builds on existing and state of the art treaty standards. It combines best practices and innovations from the Project Finance area, experiences and mechanisms from international financing institutions, as well as latest insights from clean technology and climate policy research. We incorporated new mechanisms that specifically help investments for climate change mitigation and adaptation, assuring at the same time efficacy by maintaining administrational effort or cost at reasonable levels. Where necessary, we created our own definitions in the absence of an internationally agreed definition, such as is the case for climate adaptation investments, to ensure that the treaty provides clarity to investors about “what counts” and thus is able to foster such types of investments in a targeted manner. By explicitly stipulating that breaches are to be compensated using the customary international law standard, whereby a 3% funding charge is to be paid into the Stockholm Facility (Articles 10, 11), we not only provide clear instructions to arbitral tribunals but also incentivise contracting parties to keep their bargain, without overcompensating the investor.

Lastly, the treaty takes advantage of innovative technologies, such as the distributed ledger, to assure efficacy by making the investments themselves, as well as results and outcomes, trackable and transparent. The conversion of host state subsidies gives investors the best solution to either take host state subsidies or reduce their upfront risk to the highest extent possible by reducing their invested capital. The compensation for default mitigates a central risk during the operation of infrastructure investments. Both mechanisms therefore strongly reduce the risks associated with foreign investments and increase trust to conclude long-term contracts.

5.3 Viability

The treaty, as stated above, aims to be investor friendly, while preserving the State’s needs as guaranteed by the link to the NDC and by using incentives: it “nudges” more than it prescribes. The guiding motif for us was to create, as much as possible, a “win-win” situation which aligns the interests of investors, home and host states. Under this treaty, the investor will, in the first place, be encouraged to invest and be put at ease about the expected reliability of the “rules of the game” and thus his revenue stream. The Host State will attract badly needed foreign capital to implement its national climate and clean energy plans and, at the same time, experience a positive developmental impact. The link of our strict investment definition, the application of state of the art environmental and social safeguards, and sound funding through de-risking and capital can be expected to positively impact the Host States’ triple bottom line (economic, environmental and social). The investor’s Home State, in turn, experiences the positive effects of increasing its exports of goods and services, as well as advancing its policy goals of development cooperation and international climate diplomacy. This “win-win” situation leads to a high probability of broad acceptance among States and takes into account the different needs and characteristics of different geographies. By ensuring transparency and traceability through the use of the distributed ledger and disclosure requirements for the Stockholm Facility, adoption of the treaty is more likely, especially by Annex I countries, which are the main donor countries to our Stockholm Facility.

The treaty incorporates the lessons learnt from the application of earlier investment treaties and its benefits but also pitfalls, particularly in relation to the states' ability to regulate (Article 20), the MFN clause (Article 8) as well as investor-state dispute resolution (Articles 22, 23, 24, 25). The investor state dispute resolution provisions succinctly and exhaustively address concerns of transparency, third-party involvement, abuse of process, sovereign debt restructuring, efficiency of proceedings as well as consolidation. Allowing the contracting parties to agree on interpretations of the treaty which are binding for arbitral tribunals puts contracting parties firmly in control, where the meaning of provisions has been wrongly interpreted (Article 30.6).

5.4 Universality

We are convinced that business, if done right, can address society's problems and lead to equitable economic, environmental and social development. This premise and the above described "win-win" approach lead us to a model treaty that has a broad appeal to investors and home and host states alike. Our investment definition encompasses all kinds of investments in climate change mitigation and adaptation, to ensure that any type of investor is served. Instead of prescribing an exact list of technologies under this treaty, we put the burden of proof on the investor to demonstrate how any chosen technology supports the climate goals of the host state.

Potentially diverging interests of developing and developed states are accounted for by provisioning for substantial financial support through the Stockholm Facility to those countries that need it, yet without requiring huge money transfers between states. Rather, we use the leverage of very targeted and comparatively small amounts of funding to lead to the desired leap in climate finance. We also account for individual interests and different local contexts by empowering national governments to be in the driver's seat for their specific path to climate mitigation and resilience through the link of the investment partaken under this treaty with the NDC and their respective national legislation. Additionally, the preliminary sizing of the Stockholm Facility's capitalization, of course, as well as some other specifications on the specific financing instruments for example are notional and can be adjusted according to political will.

Taking the differing needs of contracting parties into account, the treaty allows contracting parties to explicitly carve out non-conforming measures, and allows opt-ins into two of the more controversial aspects of the treaty: the multilateral arbitration agreement (Article 28) and the application of the umbrella clause (Article 18.2).

5.5 Enforceability

Our treaty contains clear and binding provisions. Care has been taken to define terms as exact as possible while safeguarding flexibility. The treaty largely avoids language that may be interpreted as soft or non-obligations. Where a provision's efficacy and enforceability is dependent on outside approval, as is the case with the Stockholm Facility being housed at the GCF (Article 17), this is noted. Where international agreement is lacking, we have developed definitions using the best international standards available (e.g. "Stockholm Investor's Principles for Climate Change Adaption Activities"). Where standards and procedures have yet to be developed and specified, as is the case for NDCs, we have adopted living definitions, continuously but identifiably changing with the host contracting parties' progress.

Enforcement of the treaty is ensured by inclusion of a clear state-to-state dispute resolution mechanism, prescribing dispute resolution under the PCA Arbitration Rules (Article 21) as well

as an investor-state dispute resolution mechanism (Articles 22, 23, 24, 25). The latter succinctly and exhaustively addresses concerns of transparency, third-party involvement, abuse of process, sovereign debt restructuring, efficiency of proceedings as well as consolidation. It allows parties to choose between proceedings before the courts of the host contracting party state or ICSID, SCC or ad hoc arbitration. As amicable settlement of disputes is usually best for both disputing parties, we explicitly include a mediation option which both the investor and the contracting parties may resort to.

Arbitral awards issued under the treaty provisions are enforceable under the ICSID Convention and/or New York Convention. Including a separate appellate tribunal has been avoided to guarantee, as far as possible, efficiency and certainty.

Annex – Table A 1: Overview of risks addressed in the treaty

Risk/Barrier	Common measures	How does the TT30 treaty address this risk/barrier
Limited access to capital	- Increasing the capacity of the financier to assess risks adequately - Lowering the cost of debt-based instruments (concessional loans, on-lending or co-financing structures) - Favourable finance policies in the host country (e.g. priority sector lending, differentiated interest rates, guidelines for green bonds)	- Special protections awarded by the treaty increase financier comfort (treaty in its entirety) - Direct access to the Stockholm Facility with concessional elements lowers capital costs (Art. 17) - Capacity building mechanisms financed under the Facility reduce perception and evaluation barriers (Art. 17) - Potential knowledge transfer on finance policies through increased foreign direct investment and capacity building requested by Host State from the Facility (Art. 17)
Lack of capacity in early project development	- Grants and technical assistance to fund technical and financial project documentation, feasibility studies, resource/engineerial/environmental studies etc.	- Access to grant funding through the Stockholm Facility (Art. 17)
Exploration Risk	- Financial help (through grants or concessional loans provided by a public financial institution) that covers the resource exploration, for example drilling for geothermal steam; feasibility studies to identify the resource availability etc. or - Partial or full risk guarantees provided by a public institution	- Early stage funding provided by the Stockholm Facility to help project become bankable (Art. 17) - Guarantees provided by the Stockholm Facility (Art. 17)
Resource risk (variability of revenues from volatility of the resource, e.g. wind in a wind park)	- Insurance for minimum income or guarantees for output targets	- Guarantees and financial support for insurance products from the Stockholm Facility (Art. 17)
Construction and completion risk	- Performance guarantees by the host state government tied to several construction milestones - Harmonization / certain guarantees for the permitting process / Environmental Impact Assessments (EIAs) / environmental and other licenses without compromising quality	- Performance guarantee may be provided by the Host State or Stockholm Facility (Art. 17) - Home States can receive capacity building funding from the Stockholm Facility to harmonize permitting / EIA requirements and other licenses (Art. 17)

Technology Risk	- capacity building programs for labour associated with the construction, operation and maintenance of new/nascent technologies - "Demonstration effect": (first mover projects that "prove the business case" in a specific market)	- De-risking instruments provided under the Stockholm Facility (Art. 17) - Demonstration effect achieved by the joint provisions of protection and incentives of the treaty (treaty in its entirety)
Operating Risks	- Capacity building to deal with technical complexities - Avoid unscheduled plant closures by having sound financial resources to operate, equipment damages by making sure top-quality equipment is purchased and installed/maintained by qualified personnel	- Capacity building available under Stockholm Facility (Art. 17) - Some operating risks that arise from climate impacts potentially mitigated by adaptation provisions (Art. 2.1 Definition "Stockholm Investor's Principles for Climate Adaptation Activities")
Demand Risk or Counterparty risk (power off-taker risk in RE investments)	- Default risk by the power offtaker (the utility) needs to be mitigated and investors and project sponsors need to perceive PPAs as reliable. That depends on the "quality" of the PPA	- Robust and secure PPAs guaranteed by host contracting state (Art. 16) - Dispute resolution for PPAs (Art. 22, 23, 24, 25, 26) - Off-taker risks can be mitigated by off-taker default guarantee under Facility (Art. 16)
Grid interconnection and transmission-line delay risk	- Host country needs to guarantee grid access and transmission infrastructure	- Dispute mechanism when changes breach treaty protections (Art. 22, 23, 24, 25, 26); - Compensation provisions for expropriation (Art. 10) and losses (Art. 11)
Force Majeure	- Insurance for force majeure	- Compensation for war, armed conflict, state of emergencies, revolt or natural disaster in line with compensation provided to nationals (Art. 12.1) and compensation in any event, if losses were unnecessarily caused by contracting state authorities.
Political or Country Risk incl. Expropriation and Nationalization Risk	- Political risk insurance (e.g. MIGA, Worldbank) - Clear process and rules for expropriations that provide compensation	- Political insurance provided under the Stockholm Facility (Art. 17) - Full compensation for expropriation plus treaty surcharge, when compensation is determined to have been illegal (Art. 10).
Policy and Regulatory Risk	- "Enabling policies": Providing clear and strong policy commitments at the national level of the host state (where applicable also home state), for example: national or municipal targets, feed-in-tariffs, subsidies, competitive tendering or auction schemes, net-metering, quotas and tax incentives,	- Commitment to NDCs and national climate related legislation (Art. 2.1 Definition for Investment, c) - Subsidies and investment grants (Art. 15)

	national legislation with climate objectives	
Environmental Risks	- Can be either the risk of that environmental damage from my investment for which I will be held liable or any environmental damage (for example flooding, spills…) on my project. - Mitigate by enforcement of a sound Environmental management system	- Application of IFC performance standards which require the establishment of an E&S management system and many specific measures according to the sector (Art. 2.1 Definition for Investment, e)
Social Risks	- Risk that my project causes social tensions or risk that social issues negatively affect my project (loss of access to project site due to violent protests, for example) - Mitigate through recognized international social and labor standards	- Application of IFC performance standards which require the establishment of an E&S management system and many specific provisions on community consultations, safety etc. (Art. 2.1 Definition for Investment, e) - Application of UNICTRAL Transparency Rules (Art. 22.2), ensuring third party participation in proceedings; - Consultation possibilities with national authorities on investment conduct (Art. 31.1(d)(e)
Short tenors	- Availability of long-tenor financing and extended grace periods, can be provided by development banks and international finance institutions	- Concessional loans provided by Stockholm Facility (Art. 17) - Payments under the investments to be freely transferable, effectively realizable and in freely convertible currency (Art. 10.5, Art. 11.3).
Currency Exchange Risk	- Hedging instruments (but rather expensive) - Debt financing (loans) in local currency (for example from an MDB)	- Both instruments can be provided by Stockholm Facility (Art. 17)
Liquidity Risk	- Avoiding revenue shortfalls through robust PPAs	- Off-taker default protections (Art. 16) and guarantee provided by Stockholm Facility (Art. 17)

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