

Emerging Trends in Climate Finance

Discussion Draft

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I. Executive Summary

- Climate finance is currently a dynamic mix of north-north and north-south financial flows and public and private sources. Given global macroeconomic conditions and slow progress in multi-lateral negotiations, future of climate finance will rely even more heavily on private sector engagement, south-south financial flows and non-traditional ODA. Developing countries need to prepare to engage with donor countries bilaterally in the short-medium term to arrive at mutually acceptable funding criteria for NAMAs.
- Climate finance flows to developing countries face some unique challenges in comparison with development aid or finance. Although climate policy is inextricably linked to development policy, it requires a paradigm shift in the way in which development is viewed in order to mainstream climate actions.
- Climate actions face barriers that development actions don't because at times they require moving away from least-cost options for development, challenge entrenched commercial interests, affect all economic layers of society and often create intangible benefits in absence of a mandated carbon price or other regulatory requirements.
- Climate finance support for developing countries can be broadly classified into opportunistic projects and transformative policies. Opportunistic projects have demonstration and informative purposes while transformative policies lead to shifts in development pathway towards a low carbon trajectory.
- Developing countries need to create appropriate legal and institutional structures to combine public and private capital effectively. Scarce public climate finance can be used to leverage large amounts of private capital flows that are required to meet mitigation goals in developing countries. Public-Private Partnership (PPP) structures are well suited to achieve large scale development projects and have been successful in traditional areas of development such as conventional transport and energy. In order for PPP to succeed for implementation of NAMAs, host governments would have to create the right regulatory and legal frameworks and develop sufficient institutional capacity.
- Once the enabling environment has been created, public finance can be used to create the appropriate risk-return conditions in order to attract private sector participation.

II. Introduction

This paper aims to advance discussions on various aspects of the conditions under which adequate climate finance will flow to developing countries in their efforts to implement Nationally Appropriate Mitigation Actions (NAMAs). The global community has established broad guidelines on how much climate finance is required and who would be the contributors; as outlined in the Copenhagen Accord and Cancun Agreement. However, there are many details and decision points that are yet to be finalized such as the level of contribution from each of the stakeholders, the structure of financial flows, end use of such finance etc. The answers to the above issues are complex and will necessitate the involvement, and eventually consensus of stakeholder groups such as developed and developing country governments, multi-lateral institutions, financial institutions, civil society and the private sector. The stakeholders will also have to consider the lessons learnt from the various NAMAs that will be implemented over the next few years in parallel with the negotiations on the future of climate finance¹.

Here we will discuss the contours of what broad objectives of international climate finance should be, how it will differ from traditional development finance and what shape and form the financial flows could take.

¹ For the purposes of this report, *climate finance* refers to funds flowing to developing countries for supporting low-carbon, climate resilient development activities

Section III



III. Climate finance at present and expected future trends

Climate finance has evolved into a complicated mix of multi-faceted and multi-directional financial flows. Lack of transparency (mostly due to absence of mandatory reporting) and definition have led to different opinions on the volume and nature of climate finance. There are, however, some common observations about the current state of play.

- Climate finance is a healthy mix of private and public sources.
- An increasing trend of South-south financial flows has also been observed in line with availability of surplus investable funds available in major developing economies.
- Major policy developments such as carbon markets such as the CDM and other offset-based markets, have so far only produced a relatively small amount of the total climate finance.
- Bilateral funding of climate actions has also been observed to be far greater than multi-lateral funding.
- A very high proportion of climate finance flows to mitigation projects.

A recent study has estimated the total climate finance available (a combination of various types of financial flows including the ones mentioned above) in 2010 to be to the tune of \$97 Bn.²

Developed countries had pledged in the Copenhagen Accord to provide \$30 Bn of new and additional public climate finance from 2010 – 2012, referred to as the Fast-start Finance

² The Landscape of Climate Finance, Boucher et al, 2011

(FSF) period. As per a recent report by the Overseas Development Institute, as on June 30, 2011 while \$28.7 Bn had been pledged, only \$8.6 Bn had been disbursed.³

International public finance support for developing countries will come under increasing pressure and public scrutiny at a time when many developed countries are laden with huge debt and faced with burgeoning social costs. Developing countries looking to access climate finance need to examine their funding plans to ensure that they are creating appropriate institutional structures in an environment wherein more emphasis will increasingly be given to non-traditional ODA (such as carbon taxes, aviation and shipping taxes etc.) and private sector finance. The possibility of climate finance support from major developing economies also exist i.e. south-south assistance. However such sources are more likely to be trade or investment-based financial flows.

Given the state of carbon markets and the uncertainty surrounding the CDM, the evolving Nationally Appropriate Mitigation Actions (“NAMAs”) framework is the most promising avenue for developing countries to access funding in the short-medium timeframe for climate actions. Many countries have begun the design and implementation of supported NAMAs⁴ with the aim of accessing public climate finance in order to bring them to fruition. This, of course, presumes that developed countries will commit enough

³ Fast-start finance to address climate change: what we know at the mid-point, ODI, August 2011

⁴ A recent survey by Ecofys has estimated around 31 NAMAs under consideration by various developing countries

financial resources for funding NAMAs through direct access, bilateral avenues and multi-lateral initiatives. Besides the question of availability of funds in donor countries, there are doubts whether both the donor and recipient countries currently have the capacity to assess and implement NAMAs, respectively.

The Copenhagen Accord makes the Green Climate Fund (“GCF”) the centerpiece of climate finance by promising to deliver \$100 Bn by 2020 through a mix of public and private sources. The design of the GCF is currently being discussed through a Transitional Committee (“TC”) that is discussing issues related to governance, institutional structure, fiduciary standards and guiding principles. At the conclusion of the 4th meeting in Cape Town, the TC forwarded for consideration at COP17, among other things, a draft governing instrument for the GCF, requests for voluntary contributions for the start-up of the GCF, and request to the UNFCCC Executive Secretary to set up an interim secretariat immediately after COP 17. The draft governing instrument for the GCF reflects a widespread agreement (though not full consensus) on guiding principles, relationship to the COP and operational modalities. Agreement on operational modalities such as access for private sector companies, accredited sub-national and national agencies are steps in the right direction.

The momentum generated at the TC meeting might not be reflected at COP 17 due to the international deadlock on other issues which might lead to a significant delay in the establishment of a fully operational GCF. Hence post-2012, developing countries will have to continue relying on multi-lateral institutions and bi-lateral institutions/facilities for public finance. NAMA financing in particular might

face challenges as established funding vehicles such as the GEF, CIF and CTF currently do not recognize NAMAs as a concept by itself although projects eligible for funding under these facilities could certainly fall within the ambit of a NAMA. This implies that bilateral initiatives have a significant role to play in the intervening period till the GCF becomes operational. In fact, such initiatives can be viewed as pilot facilities to test the practicality of the GCF guiding principles and operational modalities.

Developing countries looking to fund NAMAs in the short-medium term have the unique opportunity of engaging bilaterally with donor countries and defining the scope of their mitigation actions, the amount and type of financial assistance required and the monitoring and evaluation criteria to measure their performance. It is also probable and probably prudent for bilateral financing facilities to adopt guiding principles of the GCF that have achieved a high degree of consensus such as the need to various funding windows including one for access for the private sector. Developing countries should therefore engage with the private sector and other domestic stakeholders to formulate NAMAs and assess what sort of public climate finance assistance is required to unlock private sector capital flows that are required to bring these NAMAs to fruition. Upon completing such an assessment, developing countries would be uniquely positioned to negotiate bilaterally with donor countries to arrive at a mutually acceptable set of funding criteria, financial instruments and evaluation parameters.

Section IV



IV. Unique challenges for climate finance

The distinction between climate finance and traditional development finance is an important one to make because although climate change is inextricably linked to development, it involves a paradigm shift away from traditional development finance. Traditional development finance can be said to be financial intervention that aims at bringing about convergence of economic and social indicators in the developed and developing world. For example, grants to developing countries to build schools and hospitals in order to improve education and health indicators in the recipient country to respectable standards. The good will nature of such financial intervention also made it highly susceptible to geopolitical and ideological considerations. On the other hand, climate finance is a type of development finance that seeks to preserve a “common good” such as the environment which directly impacts both the developed and the developing world i.e. such financial intervention benefits the donor as well. The great divide that exists currently in international negotiations is over who pays to preserve this common good - those countries that have historically contributed to the concentration of greenhouse gases or those who will do so in the future due to their growing economies.

The next decision point would involve striking a balance between environmental goals and economic goals in recipient countries. In other words, how can climate finance be used to alter development pathways such that it is consistent with both development and climate objectives? Such alternative development pathways consisting of multiple NAMAs face a number of

financial, political and social barriers due to the following reasons.

- Not the least cost option: In developing countries where capital is scarce, least cost technologies and policies are the most financially and politically viable options; in spite of their environmental and health impact. Coal-based power plants figure prominently in economic plans of developing countries for the same reasons.
- Affects all tiers of the economy: While development objectives are traditionally directed towards the “bottom-of-the-pyramid”, climate mitigation objectives and actions include changing economic and social behavior at every economic strata of the society. Hence, consensus building involves a larger group of stakeholders as compared to development efforts.
- Affects entrenched interests: Climate friendly actions in developing countries inevitably affect conventional energy, large industrial and natural resource extraction sectors. These three sectors combined are among the most powerful interests in developing countries (as services sector lag industrial sectors in developing countries in terms of GDP contribution) and hence often oppose climate change mitigation policies that require disrupting business-as-usual practices.

- Intangible returns and incremental cost definition: Returns on climate investments are also mostly intangible in that the primary objective of reducing emissions from a base case scenario only attains a financial value through regulatory frameworks and market mechanisms such as cap-and-trade and carbon taxes. As such the magnitude of return on climate finance will then depend on the stringency of the regulatory mechanism reflected in the price of the environmental attribute. Estimating returns accurately is also a challenge in transport projects where the climate-related benefits that accrue to society at large are far greater than the estimated GHG reductions. Second, climate finance facilities tend to financially support mitigation projects up to the incremental cost of the project⁶. While this is easier to estimate for projects such as wind farms (say by comparing to a coal project), it presents a barrier to financing for projects like Bus Rapid Transit (BRT) or Transit Oriented Development (ToD) which have mitigation potentials but lack a base case to estimate incremental costs accurately. Even when BRTs do secure some amount of climate financing it is based on an incremental cost value that is reduced to a mere fraction of the overall project cost.

Moving on from least-cost options

In order to compete with least-cost options, it is imperative that the global community creates the right conditions to bring down the cost of clean technologies. This will take a significant amount of funding for R&D, venture capital funding and economies of scale. Climate finance could be directed towards creating markets for clean products in developing countries thereby allowing for the economies of scale that is required. This is similar to the model by which cost of vaccines is brought down by creating markets in developing countries through initial rounds of subsidies.⁷

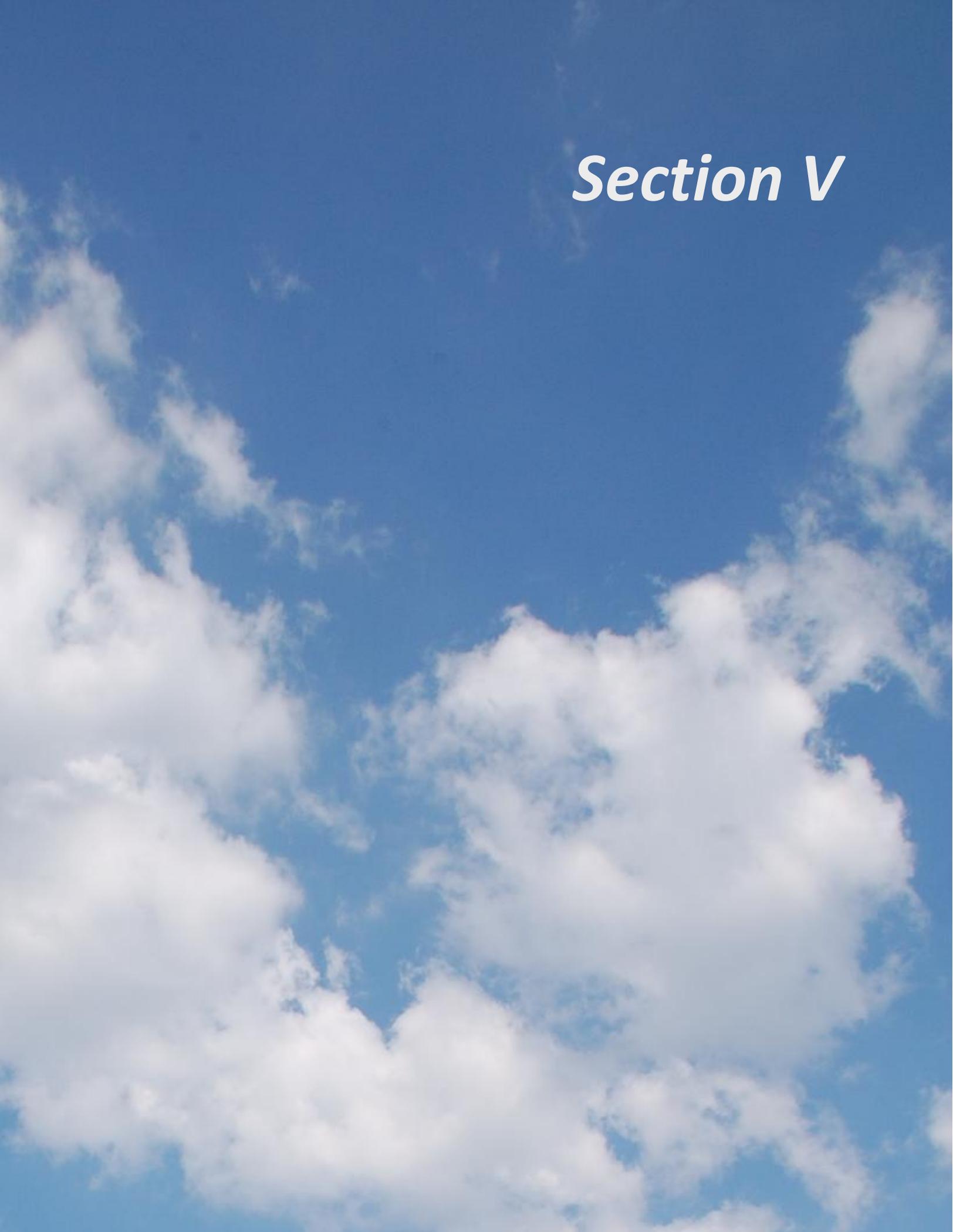
Generating buy-in on NAMAs

The fact that climate actions affect all tiers of the economy and face opposition from entrenched interests means that host governments need to create awareness about impacts of climate change and generate buy-in from its constituencies. Creating a national plan for climate change (both mitigation and adaptation) is a good step in that direction and has been taken by some major developing countries such as India and Indonesia. It is important to note that such action plans should be created with inputs from non-state actors such as civil society, academic institutions and the private sector.

⁶ The latest draft of the governing instrument for the GCF also includes language on financing of incremental costs (section 5.2, 35)

⁷ The End of ODA. Severino and Ray, 2009

Section V



V. Uses of climate finance for achieving mitigation goals

Taking into consideration the uncertain landscape of climate finance in the short-medium term, developing countries need to be strategic in terms of how they frame their NAMAs and ensure that they are not completely reliant on a particular source or type of finance. In fact, the lack of definition about NAMAs allows for significant scope of project structuring and innovation without the constraints present in a structured funding mechanism such as the CDM. In order to meet long-term mitigation goals inscribed in the Copenhagen Accord there is an acute need for adequate and appropriate climate finance as identified in the Accord itself. Climate finance could be thought of as financial support for two broad categories of climate mitigation actions – opportunistic and transformative.

Opportunistic actions can be described as actions that address short-term barriers that are crucial to the development of mitigation projects. Such financial interventions could be handled by a single source given its limited size and scope. Such projects need not cause a multiplier effect or induce long-term shifts in the development pathway to a lower emissions scenario for the sector and/or the country as a whole.

Transformative actions can be described as broad policy-based efforts that aim to induce significant medium-to-long term shifts in development paths in developing countries towards a lower emissions scenario. These actions can be thought of as a package of policies and actions being taken by a range of

stakeholders based on a pre-determined long-term mitigation objective.

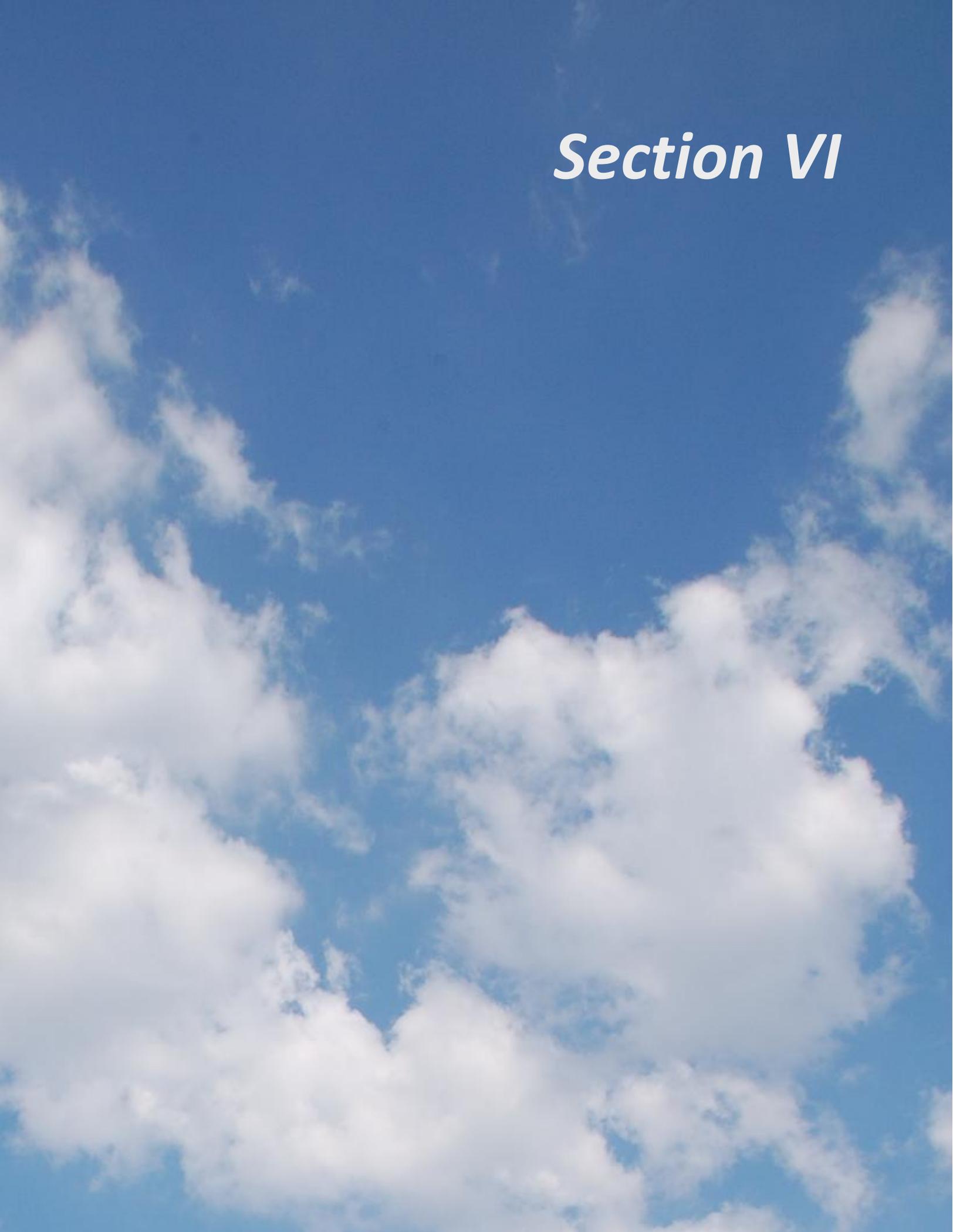
The above two categories while mutually exclusive in their strictest of definitions can also have varying degrees of overlap. In fact opportunistic projects could be viewed as a subset of over-arching transformative policies. For example, funding of a transmission line which connects wind resource rich areas to load heavy areas is an opportunistic project while a Renewable Energy policy package which includes an RPS, Feed-in-tariff, Tax Benefits, Wind Resource Risk Guarantees etc is a transformative policy mechanism.

The term “opportunistic” is not to be understood as inferior to “transformative” as the former type of action is vital for the global community to understand how transformative financial intervention should be designed. While the benefits of opportunistic actions might not be multiplicative in nature, lessons from them in the short-term will be an essential ingredient in the discussions about long-term transformative financial intervention for climate change mitigation.

Opportunistic and transformative climate finance can take various shapes and form depending on the nature of intervention desired. Climate finance should be carefully deployed in promoting policies and in supplementing traditional sources to assist developing countries by (a) bringing opportunistic actions over the finish line in the short-term and (b) inducing transformative actions that lead to shifts in development

pathways towards a lower emissions scenario in the medium-to-long term.

Section VI



VI. Preparing to access climate finance for NAMAs

It has been recognized by both developed and developing nations in the Copenhagen Agreement and the Cancun Accord, that climate mitigation goals can only be reached through a combination of public and private capital. Although the ratio of the public and private sources in the \$100 Bn target is unspecified in the Copenhagen Agreement and undecided as of yet in international negotiations, the deteriorating financial health of some of the world's largest developed countries and the re-shifting of the balance of power towards emerging markets have made it clear that private capital will be a large share. While public funds can be generated through political will and earmarks, private capital will only flow under the right circumstances. Hence, it behooves that public capital be spend in ways that would create the appropriate enabling environment to generate the massive private capital flows that are required. Developing countries will have to create legal frameworks and entities that can access a combination of both public and private capital with each source assuming the risks that it is most capable of measuring and mitigating. One tried-and-tested framework is the Public Private Partnership (PPP)⁸ structure which has been successful in the past in mobilizing capital from the public (domestic and foreign) and private sectors to achieve a shared vision.

The success of PPPs depends on strength of

- 1) Legal, regulatory and policy frameworks;

⁸ For more information on PPPs please refer to <http://ppp.worldbank.org/public-private-partnership/>

- 2) Institutional capacity; and
- 3) Commercial and technological viability.

Once (1) and (2) are in place, public capital can be used to create the appropriate risk-return conditions that can attract long-term private capital for climate change mitigation investments. The appropriate risk-return conditions for an investment can be achieved through instruments that specifically aim at reducing risk and increasing returns.⁹

Examples of risk-based and return-based instruments are in tables 1 and 2 respectively.

The financing packages that bring NAMAs to fruition can be a combination of both risk and return based support. Below we explore the case of a wind project to see how those can be successfully structured as PPP-projects with international support in the form of risk and return based financial instruments.

⁹ If one were to view this from a the perspective of a discounted cash flow (DCF) valuation methodology, risk-based instruments primarily affect the discount rate while return-based instruments affect the net cash flows. The overall effect of a lower discount rate and higher net cash flows is a higher net present value (NPV), i.e., greater return on investment. For more information on DCF and NPV, please refer to http://espace.library.uq.edu.au/eserv/UQ:8138/n11__INTRODUCTIO.pdf

Table 1 Instruments reducing risk

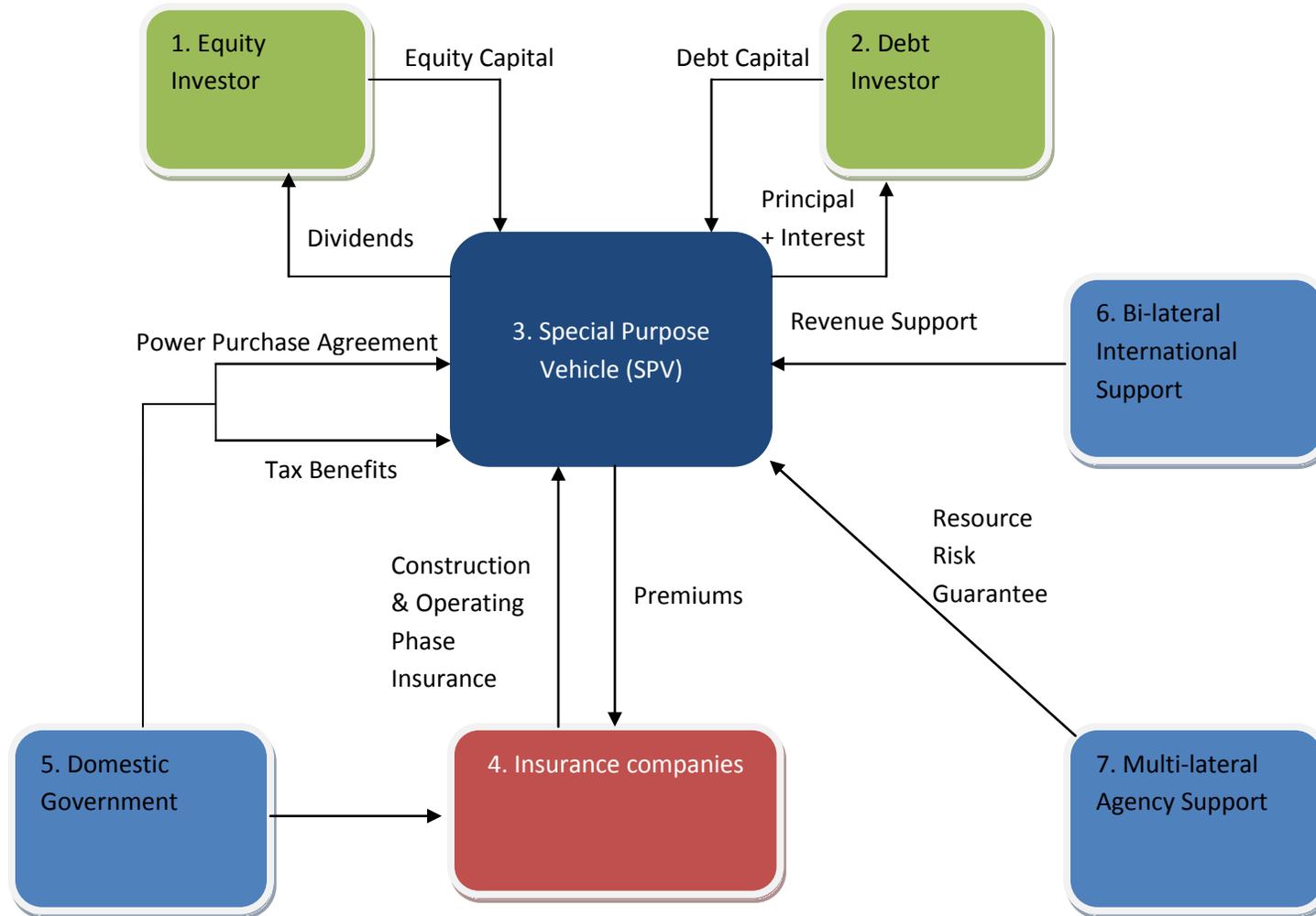
Type of risk	Examples of support from international community
Construction risk	<ul style="list-style-type: none"> • Time delay insurance • Cost-overflow insurance
Operational risk	<ul style="list-style-type: none"> • Technology performance guarantees/warranties • Operational insurance
Market/Revenue risk	<ul style="list-style-type: none"> • Viability-gap funding • Shadow tolling • Resource availability guarantee
Political risk	<ul style="list-style-type: none"> • Sovereign risk guarantee
Environmental risk	<ul style="list-style-type: none"> • Insurance covering <i>force majeure</i> events, acts of God etc.
Financial risk	<ul style="list-style-type: none"> • Interest rate derivatives • Currency derivatives • Credit derivatives • Inflation hedges • Take-out financing
Institutional risk	<ul style="list-style-type: none"> • Counter guarantees

Table 2 Instruments either reducing costs or increasing returns

Income	<ul style="list-style-type: none"> • Feed-in-tariffs • Green commodity purchase (carbon credits/RECs)
Operating expenses	<ul style="list-style-type: none"> • Operating subsidies/support
Tax	<ul style="list-style-type: none"> • Accelerated depreciation • Tax holidays
Capital cost	<ul style="list-style-type: none"> • Capital cost subsidy
Financial cost	<ul style="list-style-type: none"> • Subsidized debt • Tax-free status

Case 1: Wind Energy Project Financing

Figure 1 Financing package for wind project



The above structure would only be viable if the host government has created the appropriate regulatory framework and sufficient institutional capacity to deal with Special Purpose Vehicles or Entities (SPVs). SPVs are legal structures that allow parsing of various levels of risk to the appropriate investor or contractor and are an efficient way of creating innovative financing mechanism outside of corporate balance sheets that are subject to myriad regulatory and financial restrictions.

Typically electricity regulations are not geared for renewable energy and have legal barriers such as penalties for intermittency etc which could make a wind project financial unviable. Similarly, financial institutions may not be sophisticated enough to measure financial risk of renewable energy technologies. Such regulatory and institutional improvements would be required in order to ensure the success of a financing package described above.

Assuming that such conditions are in place, the above financing structure could be adopted to generate private capital for both Equity and Debt Investment. In developing countries where sufficiency equity and debt investors exist for energy projects, the most significant risks would be related to revenue risk and resource risk. Investors would also need a premium on their return compared to conventional energy projects because of lack of familiarity with these technologies.

Revenue risk can be mitigated by signing a Power Purchase Agreement (PPA) with a government entity. Resource risk is more

complicated and this would require an unconventional financial structure called Resource Risk Guarantee (RRG). In a wind energy project, the PPA is tied to a base case of energy generated by the project which means a certain minimum amount of wind availability. When the wind resource falls below this base case, the SPV no longer generates revenue, which means that its fixed expenses such as debt service would not be covered. The RRG is structured such that the guarantor will agree to pay the SPV a certain amount of revenue when the wind availability falls below base case. The amount of revenue support would be enough to cover operating expenses and debt service. Thus the equity investor will still bear the resource risk but the SPV will continue to operate irrespective of the wind availability.

VII. Conclusion

The international community is making steady progress towards reaching future climate finance targets as expressed in the Copenhagen Accord and the Cancun Agreements. The discussions at the latest GCF Transitional Committee meeting are a good indicator that global stakeholders are converging towards a shared vision of what the future of climate finance should be in order to meet economic and environmental goals. The important role to be played by the private sector and non-public finance sources is being recognized and future financial mechanisms should aim to leverage public finance to mobilize greater financial flows from non-public sources and non-traditional ODA.

The current deadlock in climate change negotiations while an obstacle also provides a space where ambitious developed and developing countries can forge their own path by collaborating to meet mutual goals. Such collaborations could mirror the principles that have received widespread agreement in multi-lateral talks in order to test them before they are institutionalized. The lessons from such partnerships could shorten the learning curve for the GCF when it does come into existence. The end goal of mobilizing ambitious mitigation actions on the ground will require effort from developing countries as they endeavor to meet economic aspirations of their populace while remaining consistent with long-term climate goals.

The NAMA framework is increasingly being viewed as the appropriate policy mechanism for developing countries for structuring such

ambitious mitigation actions. The lack of international definition and consensus regarding NAMAs is also an opportunity for ambitious countries to design mitigation actions that are acceptable domestically and can be scaled up using international support. These supported actions can serve as models for an eventual international framework. Developing countries need to invest political and financial capital in bringing on board domestic stakeholders in their efforts to design ambitious NAMAs. They will have to create regulatory frameworks and institutional capacity that would allow them to successfully leverage international support to undertake NAMAs. Developed countries have a crucial role to play in creating flexible financial mechanisms that incentivize developing country policymakers to consider NAMAs as an integral part of their economic development planning. Donors will also benefit from such bottom-up experiences which would allow them to effectively design future financial mechanisms.

Public Private Partnerships are a widely accepted and proven framework to successfully leverage public finance to generate private sector participation to execute large scale development projects. Once the appropriate enabling environment is created for PPPs, public finance (domestic and international) can be strategically provided to create the most attractive risk-return parameters for attracting private capital for NAMAs. NAMAs could be financed using a combination of domestic public finance, multi-lateral institutions and bilateral financing facilities by allocating risks to the party most suited to measure and mitigate it.