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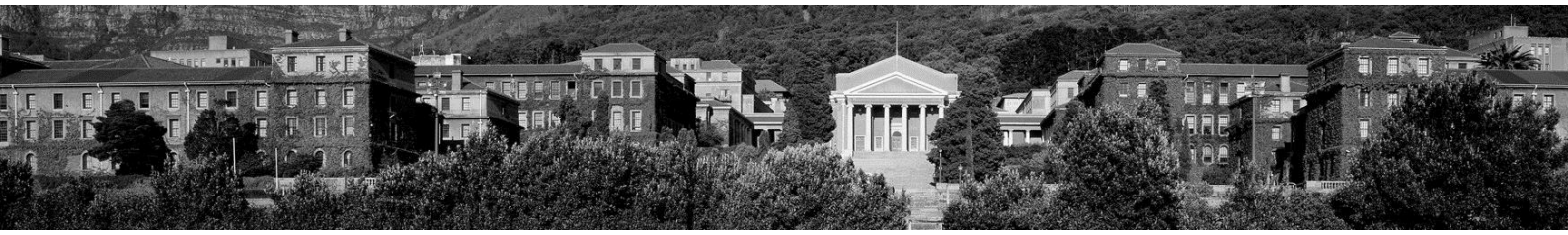

RESEARCH REPORT SERIES

Comparative Analysis of the NDCs of Canada, the European Union, Kenya and South Africa from an Equity Perspective

A research report funded by the Swedish Energy Agency

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Author contributions

HW provided the initial concept of the research, and led on the formulation and elaboration of the research questions. GC coordinated the writing of the overall research report. CH contributed the case study of Canada; WPP contributed the case study of the EU; and KM contributed the case study of Kenya. GC led on the writing of the case study of South Africa, with extensive guidance and review contributions from HW. GC led on the writing of the comparative analysis, discussion and conclusions, with considerable contributions, guidance and feedback from CH, KM, WPP and HW. Overall, all authors provided feedback and contributed to writing the paper. All authors also contributed to the planning and running of workshops and side-events: GC and HW led the workshop in Bangkok, with assistance from CH, and CH led the side-event in Katowice, with assistance from WPP, and remote participation from GC and KM.

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Executive Summary

In the lead-up to COP21 in Paris, 2015, all Parties to the UNFCCC were invited to communicate their *intended nationally determined contributions* (INDCs), which could include information on how the Party considers its INDC is fair and ambitious (1/CP.20, para 14). The same information to accompany *nationally determined contributions* (NDCs) was included in the Paris decision adopted at COP21.

While there is extensive literature on climate equity, comparatively little research exists on equity in NDCs. Analysis of equity in NDCs is important, firstly because NDCs represent a unique step in UN climate negotiations, in that they are universal and applicable to all Parties, and secondly because NDCs are formulated bottom-up. As countries determine their own priorities and ambitions they self-differentiate their responsibilities to address climate change.

This research report examines equity considerations in the domestic processes for the preparation of NDCs.

Four Parties are examined in this analysis, selected based on having widely varying domestic contexts and processes for NDC preparation. The four Parties are as follows:

- Canada
- The European Union (EU, representing 28 countries)
- Kenya
- South Africa

Case studies were developed for each Party based on a common set of guiding research questions, and drew first on a content analysis of the NDC documents themselves, followed content analysis of other key primary texts, including policy documents, legislation and pronouncements by key individuals, as these were found to be highly relevant in the context of assessing equity in the NDCs. The content analysis was further supported with data gathered from interviews with key individuals, representing various actors and groups of actors relevant to the climate policy decision-making of each Party. The evidence gathered from these sources was further explored with reference to academic and grey literature, where necessary.

Based on the findings of these case studies, a comparative analysis of the four NDCs was undertaken drawing on five themes that emerged across the four case studies, that illustrate how equity considerations influenced the NDCs, as follows:

1. How were mitigation targets in the NDC formulated, and how did Parties substantiate that these targets are fair and ambitious?
2. Did the scope of the NDCs include adaptation and/or Means of Implementation, and were these included from the perspective of equity?
3. Who are the key domestic actors or groups that influence climate policy discourse within each Party, and how did they influence the formulation of the NDC?
4. What impact has the NDC process had on domestic climate action more broadly? Have NDCs been a 'game-changer', or were they in fact reworked from previous or existing climate policy?
5. Could there be a role for facilitative guidance or the establishment of norms in helping Parties, more broadly, to develop their NDCs, and consider the fairness and ambition of their contributions?

Emergent from these five thematic areas was the basis for discussion on whether, and to what extent, equity enables ambition in NDCs. Whilst such a question cannot be answered definitively based on the NDCs of four Parties, the case studies and comparative analysis do show how international considerations of equity can motivate Parties to develop NDCs that are ambitious.

Equity is found to enable ambition internationally, in that the four Parties examined here based the formulation of their NDCs at least in part on considerations of submissions by other Parties. All four Parties refer to equity in their respective NDCs, though in some cases implicitly, and the case studies show that these Parties do more if others are doing so, and are generally motivated by a desire to be perceived as making a fair, or even leading, contribution to the global effort.

Amongst the four Parties, NDCs are shown to have had a 'lock-in' effect for climate ambition, in the face of changing political circumstances at sub-Party level. This is reflected particularly in the cases of Canada, with a federal government structure, and the EU, which represents multiple Member States; in both cases, it is plausible that the NDC can provide a safeguard against potential backsliding by individual provinces or Member States, and evidence from both case studies showed that domestic ambition was raised at least partly as a consequence of the NDC.

However, in general across the four case studies, it is also found that equity in domestic processes to prepare NDCs raises distributional issues within Parties or countries, which has the effect of tempering ambition at the national level. Parties have to balance ambition in their NDCs with national circumstances and other social or economic priorities. Such a balance varies depending on the specific context of each Party and, as such, the domestic political 'culture' of Parties is found to be highly important. In addition to political opposition from sub-Party government bodies, each of the case studies showed that the perspectives of various actors, including private business, civil society and other groupings specific to each Party, influence the NDC preparation process to varying degrees, depending on the relative strength and capability of the local actors to advance their interests.

Furthermore, amongst the four Parties, domestic policy and planning tends to shape the scope and form of Parties' NDCs, and their mitigation targets in particular, rather than the other way around. In each case, however, the NDCs have at least partly driven Parties either to raise their overall ambition, beyond what had previously been established domestically, or to develop further climate change response plans and measures for implementation. However, none of the four Parties have as yet updated the mitigation targets of their NDCs, and there was little evidence to instil confidence that the Parties' NDCs would be updated in or before 2020, irrespective of equity considerations.

The scope of the NDCs varies between developed and developing Parties, with both Kenya and South Africa including adaptation and means of implementation as part of the scope of their NDCs, whereas Canada and the EU both limited the scope of their NDCs to mitigation. However, both Canada and the EU treat adaptation and provision international support elsewhere. In the case of Canada, a short paragraph on adaptation does appear in the narrative component of the 2017 NDC submission, but this does not constitute an adaptation *component* of the NDC in the same way that it is included in the Kenyan and South African NDCs. In general, the understanding of equity in relation to adaptation appears limited by comparison to mitigation across the four case studies, and likely beyond them as well.

Finally, while there remains little appetite among Parties for prescription on how to run domestic processes when including equity issues in future NDCs, there could perhaps be a role for facilitative guidance and the sharing of experiences on understanding of fairness considerations for NDCs. With provisions provided in the decision text from COP 24 in Katowice, 2018, for consideration of equity as a source of input to the five-yearly global stocktake, it is likely that analysis of equity, particularly at a domestic level, will continue to

be relevant for Parties. In general, equity will continue to be crucial in order to move global climate change response negotiations forward.

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List of Figures and Tables

Acronyms

AGN	African Group of Negotiators
BASIC	Brazil, South Africa, India and China
BAU	Business-as-usual scenario
BC	British Columbia
BLSA	Business Leadership South Africa
BUSA	Business Unity South Africa
CAF	Country Adaptation Fund
CBC	Canadian Broadcasting Corporation
CAIA	Chemical and Allied Industries Association of South Africa
CIDP	County Integrated Development Plan (CIDP)
CO_2-eq	Carbon-dioxide equivalent
COP	Conference of the Parties to the UNFCCC
COSATU	Congress of South African Trade Unions
CSIR	Council for Scientific and Industrial Research (South Africa)
DEA	Department of Environmental Affairs of South Africa
DG	Directorate-General of the European Commission
DoE	Department of Energy of South Africa
ECO	Environmental Commissioner of Ontario
EDD	Department of Economic Development of South Africa
ENGO	Environmental Non-Governmental Organisation
ERC	Energy Research Centre
ETS	Emission Trading Scheme of the European Union
EU	The European Union
FPT	Federal, Provincial, Territorial
G7	Group of Seven (Canada, France, Germany, Italy, Japan, UK, USA)
G77	Group of 77 at the United Nations
GCF	Green Climate Fund
GDP	Gross Domestic Product
GHG	Greenhouse Gas(es)
INDC	Intended Nationally Determined Contribution
IPCC	Inter-governmental Panel on Climate Change
IPCC AR4	Fourth Assessment Report of the Intergovernmental Panel on Climate Change
IPCC AR5	Fifth Assessment Report of the Intergovernmental Panel on Climate Change
ITTCC	Industry Task-Team on Climate Change (South Africa)
LPC	Liberal Party of Canada
LTAS	Long-Term Adaptation Scenario
LTMS	Long-Term Mitigation Scenario
LULUCF	Land use, land use change and forestry
MENR	Ministry of Environment and Natural Resources, Government of Kenya
MRV	Monitoring, reporting and verification
MTP	Medium-Term Plan for Economic Development, Government of Kenya
MW	Mega-watt (unit of electricity capacity)
NAP	National Adaptation Plan of Kenya
NCCAP	National Climate Change Action Plan 2013-2017 of Kenya
NCCAP2	Second National Climate Change Action Plan 2018-2022 of Kenya

NCCRWP	National Climate Change Response White Paper 2011 of South Africa
NDC	Nationally Determined Contribution
NDP	National Development Plan 2030 of South Africa
NEMA	National Environmental Management Authority of Kenya
NGO	Non-Governmental Organisation
NIR	National Inventory Report
NPC	National Planning Commission of South Africa
NUM	National Union of Mineworkers (South Africa)
NUMSA	National Union of Metalworkers of South Africa
OECD	Organisation for Economic Cooperation and Development
PCF	Pan-Canadian Framework of Clean Growth and Climate Change
PPD	Peak, plateau and decline
ppm	Parts per million (unit of concentration)
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme of South Africa
RMI	Republic of the Marshall Islands
SADC	Southern African Development Community
SNC	Second National Communication of Kenya to the UNFCCC
StARCK+	Strengthening Adaptation and Resilience to Climate Change in Kenya Plus programme
StatsSA	Statistics South Africa
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
WCI	Western Climate Initiative

1. Introduction

In the lead-up to the 2015 United Nations Climate Change Conference in Paris (COP21), the *Lima Call for Climate Action* (1/CP.20, UNFCCC, 2014) invited all Parties to the *United Nations Framework Convention on Climate Change* (UNFCCC) to communicate their *intended nationally determined contributions* (INDCs) [Decision 1/CP.20, para 12], which could include information on how the Party considers its INDC is fair and ambitious (1/CP.20, para 14). The same information to accompany *nationally determined contributions* (NDCs) was included in the Paris decision adopted at COP21 (1/CP.21, para 27, UNFCCC, 2015).

This research report examines equity in respect of Parties' NDCs. Equity is a foundational principle of the *Paris Agreement*, as outlined in its Preamble and Objectives (Article 2), and is fundamental to its implementation, since "countries will only join agreements, remain party to them, and increase their own ambition, if they consider the contributions of their peers to be fair" (Winkler et al., 2018, p. 100). Consequently, analyses of equity are essential in creating understanding of political dynamics that motivate or constrain countries' contributions and actions in response to climate change, and how these may affect internationally and domestically differentiated groups of people differently (Klinsky et al., 2017).

Analysis of equity in NDCs is important for a number of reasons. Firstly, NDCs represent a unique step in UN climate negotiations, in that they are universal and applicable to all: every country was invited to communicate an NDC,[1] and nearly every country did so (Pauw et al., 2016). It is the first time in history that climate change response plans of almost every country can be analysed and compared. Secondly, NDCs are formulated bottom-up, meaning that countries determine their own priorities and ambitions, allowing countries to self-differentiate their responsibilities to address climate change (Mbeva & Pauw, 2016). Under the mechanism of self-differentiation, it can thus be hypothesised that countries formulate NDCs according to what they consider to be a fair contribution to the international response to climate change, based on what they consider to be a fair and achievable sharing of effort among domestic actors and groups, in the context of domestic issues, circumstances and priorities.

While there is extensive literature on climate equity (Baer, Athanasiou, & Kartha, 2007; Baer, Fieldman, Athanasiou, & Kartha, 2008; Cameron, Shine, & Bevins, 2013; CSO Equity Review, 2015, 2017, 2018; Höhne, Elzen, & Escalante, 2014; Höhne, Fekete, den Elzen, Hof, & Kuramochi, 2018; Holz, Kartha, & Athanasiou, 2018; Kanitkar et al., 2010; Kemp-Benedict, Holz, Athanasiou, Kartha, & Baer, 2018; Meinshausen et al., 2015; Ott et al., 2004; Pan, 2003; Pauw, Bauer, Richerzhagen, Brandi, & Schmole, 2014; Rajamani, 2006; see, e.g., Shue, 1994, 2015; Winkler & Rajamani, 2014), comparatively little research exists on equity in NDCs, particularly from the perspective of domestic actors and institutions. In bottom-up analyses, Winkler et al (2018) demonstrate that countries have put forward a wide variety of indicators and approaches for explaining the fairness and ambition of their NDCs, while Mbeva and Pauw (2016) find that adaptation and financing issues become more prominent as *equity* issues through the NDCs. Among more top-down analyses, du Pont and Meinhausen (2018), the Climate Action Tracker (2017), the CSO Equity Review (2015, 2017, 2018) and Holz et al. (2018) opt for a quantitative top-down approach, comparing NDC ambition with global emissions goal under different equity approaches. The normative choices on emission allocations in such assessments have limitations (Kartha et al., 2018), and as yet there is not an operational definition of equity under the UNFCCC.

1 INDCs automatically turned into Nationally Determined Contributions (NDCs) upon Parties' ratification of the Paris Agreement, unless communicated otherwise [1/CP.21, para 22] (UNFCCC, 2015). Only 14 countries (Canada, as well as Algeria, Argentina, the Bahamas, Belize, El Salvador, Eritrea, Indonesia, Morocco, Nepal, New Zealand, Pakistan, Sri Lanka and Uruguay) communicated an NDC that was different from the INDC (Pauw et al., 2016).

The purpose of this work is therefore to explore modalities and variations among four Parties in more detail. The four selected Parties have widely differing internal contexts, domestic processes for preparing their NDCs,[2] and ways in which equity considerations influenced these processes and resulting contributions. The four NDCs included in this analysis are:

- Canada
- The European Union (EU)
- Kenya
- South Africa

Case studies were developed for each Party. The case studies built on existing analyses and were framed according to a common set of research questions that were designed to explore domestic decision-making processes and equity considerations during NDC formulation. The research questions guiding the case studies were as follows:

- Did preparations of INDCs prior to Paris in 2015 refer to equity and, if so, how? Also, if discussions are underway for updating or submitting a new NDC, have these discussions referred to equity?
- What is the influence of equity on policy/strategy/planning and implementation
- Are there any lessons learned that would help in developing protocols for discussions on equity in domestic preparation processes?
- Is good practice guidance wanted, or do the countries want to run their domestic processes entirely without any external input?
- Is there better understanding of equity in relation to mitigation, compared to adaptation?
- Is fairness in terms of support (finance, capacity building, technology transfer) as well as international cooperation frequently invoked?
- Does equity enable ambition?

Based on the findings of these case studies, a comparative analysis of the four NDCs was undertaken, to compare the scope and different elements of the NDCs, as well as the approach taken by the Parties in terms of equity. Based on the findings of the comparative analysis, discussion is provided on whether, and the extent to which, equity, at both an international and domestic level, enables ambition in the four NDCs, and whether there are any lessons learned that might apply in analysis of equity in NDCs more broadly.

The research report is presented as follows:

- Chapter 2 presents the research methodology followed in undertaking the case studies, as well as the approach taken to compare and contrast the findings in the comparative analysis.
- Chapters 3 through 6 present the case studies of each of the four NDCs, in alphabetical order (i.e. Canada, EU, Kenya and South Africa)
- Chapter 7 presents the comparative analysis of the NDCs, and is structured according to the key themes that emerged from the case studies.
- Chapter 8 presents a short discussion chapter on the extent to which equity enables ambition.
- Chapter 9 presents the conclusions of the research, as well as recommendations for further work.

2 Throughout this report, reference is made to the NDCs of the four Parties listed above, unless otherwise stated.

2. Methodology

2.1 Case studies

The methodology of the case studies includes content analysis of the NDCs as well as other key documents, such as policy documents or legislation, as specified and relevant to each case, and whilst maintaining that the focus of the analysis on the NDCs. In this regard, the Party's approach to explaining how their NDC is fair and ambitious is considered in loose accordance with the following guidelines:

1. Mitigation
    - The form and stringency of the mitigation target
    - The role of science in setting the mitigation target
    - Explanation of how the mitigation contribution is fair (including selection of indicators and criteria, if important in domestic processes)
    - Does the Party demonstrate concern for relative fair shares (in comparison to other Parties)?
    - Comparability of effort to other Parties
    - Domestic effort-sharing, if any, between provinces/counties/Member States, economic sectors, or other key stakeholder groups
    - Policy options considered as part of target setting
2. Adaptation, if included
    - Equity arguments and criteria used in relation to the inclusion of adaptation in the NDC
    - Distinguishing reference to adaptation actions and funding for adaptation investment
    - Use and explanation of quantifiable or qualitative metrics to demonstrate vulnerability to impacts or other aspects of climate resilience
3. Means of Implementation, if included
    - Are domestic investments and/or requests for support raised as equity arguments?

Following the content analysis, semi-structured interviews were conducted with persons who represent key stakeholders, as identified accordingly in each case study. The purpose of the interviews was to generate primary data on the views and considerations of the stakeholders on equity of the NDCs, from a domestic perspective. Key stakeholder groupings vary between the different case studies, according to the prevailing political structure and culture of each Party. The semi-structured interview approach was chosen for this reason. An Interview Guide (included in Annexure A) was developed, and includes a list of general questions designed to elicit common elements from the many different interviewees across the different Parties, whilst allowing the interviews to remain open and flexible so that more valid information about the respondents' perspectives and opinions could be obtained.

2.2 Comparative analysis

The next phase of the research entails comparative analysis between the case studies, including mapping out the domestic (or Union level in the case of the EU) decision-making

processes of the Parties, and identifying commonalities and divergent features between the NDCs, such as:

- Common or divergent modalities through which equity is operationalised, e.g. through stakeholder and public participation
- The extent to which Parties' targets are influenced by perceptions of others contributing (or not contributing) their fair share
- Common or divergent protocols of how equity is assessed and perceived in Parties' own contributions, and the contributions of others.

The comparative analysis is qualitative rather than quantitative, reflecting the nature of the 'data' drawn from the case studies. The analysis draws on similarities and differences between the four Parties in terms of whether, and how, their NDCs addressed mitigation and adaptation, as well as the extent to which NDCs were drawn from and, in turn, influenced domestic climate policy development, and the influence that domestic stakeholder groupings and interests had on this discourse. The analysis is framed by the common set of guiding research questions applied to each of the case studies, allowing for some flexibility to elicit unique and self-determined aspects of each Party and its NDC.

The comparative analysis also draws on the discussion points of a research workshop held at during the UN Climate Change Conference held in Bangkok in September 2018, the report of which is provided in Annexure B of this report. Further findings are drawn from a side-event, held on the side-lines of the COP24 in Katowice in December 2018, as well as the decision text that was agreed at the Katowice COP itself, which outlines the way forward for implementation of the Paris Agreement (UNFCCC, 2018b). The findings of this research are thus considered in the context of information that will be considered as sources of input for the global stocktake (UNFCCC, 2018c).

3. Case Study of Canada

3.1 Introduction

Canada is an interesting case to consider for this study, due to the change in federal government shortly after the release of the Canadian INDC, the fragmented nature of the Canadian climate policy landscape, and strong rhetoric around fairness in the context of responses to climate change by both the new federal government as well as subnational governments.

Canada is one of only a few countries (and the only one among the Parties studied here) that have submitted a different NDC document after their ratification of the Paris Agreement compared to their INDC submission. This reflects the change in government that occurred between INDC submission and the Paris COP21 and thus a comparison of the two documents offers some straightforward insights into the different approaches of these governments. Thus, both the INDC submission submitted by the Harper administration (Canada, 2015), which became the first NDC upon Canada's ratification of the Paris Agreement (in October 2016), as well as the revised NDC, submitted by the Trudeau government (Canada, 2017a), will be considered here. Thus, for clarity, the terms "INDC" and "NDC" are not used interchangeably in this case study, but are used to specifically refer to either of these two documents. Additionally, as will be shown, one of the main differences between these two documents is the articulation of domestic implementation plans in the NDC, known as the *Pan-Canadian Framework for Clean Grown and Climate Change*, or PCF (Canada, 2016), which must therefore also be studied to understand what the Canadian federal government considers its NDC. Importantly, the common mitigation target level of the two documents (30 % below 2005 levels by 2030) has been universally decried as an insufficient Canadian contribution to the global effort (e.g., Burck, Marten, & Bals, 2015; Climate Action Tracker, 2017; Prystupa, 2015).

The Liberal Party of Canada (LPC), under Justin Trudeau, promised during the 2015 election campaign that Canada would "do its part to prevent" greater-than-two-degrees of global temperature increase (LPC, 2015), and Trudeau told delegates at the Paris COP that "Canada is back, my good friends" (Trudeau, 2015), while his Environment and Climate Change minister consistently confirmed that the Harper-era mitigation target represented "the floor, not the ceiling" of the new government's ambition (CBC News, 2015a), and that in the context of the Paris Agreement, "it's really important … everyone commits to do their fair share" (CBC News, 2015b). However, the mitigation target that had been established through Canada's INDC submission remained unchanged. From this study, there is no evidence that concrete considerations of what would constitute an equitable contribution of Canada to a global 2 °C or 1.5 °C-consistent global effort were made when setting this mitigation target. However, there is evidence that considerations of comparability of effort with other major emitters *were* considered in setting the INDC target (arguably a consideration related to equity), and that intra-national equity concerns played a role in devising the PCF.

3.2 Background

Canada is, as a G7 member, one of the leading industrial economies. It is the second largest country in the world but has a population of only about 38 million people. An often-harsh climate, sparsely distributed population and a comparatively large share of natural resource exploitation in its domestic economy presents challenges to Canada with regards to climate response. Politically, Canada is a federation and its 10 provinces[3] exercise jurisdiction

3 In addition to the ten provinces, there are also three territories in the Canadian federation, however, unlike the provinces, territories do not have inherent sovereignty in the areas of responsibility in which they

exclusively in several areas of responsibility or jointly with the federal government, including those relevant to climate policy such as natural resources, energy, and environmental assessments.

Canada is an Annex-I country under the UNFCCC and was an Annex B country under the Kyoto Protocol, under which it committed to a 6 % reduction of emissions relative to 1990 in the 2008-2012 commitment period. Canada withdrew from the Kyoto Protocol in 2011 – the only country to do so – when it became clear that the failure to implement sufficient domestic climate action by the then-governing conservative Harper administration as well as the preceding liberal Martin and Chrétien governments placed the Kyoto target well out of reach. Canada's Kyoto experience might serve as an anecdote to highlight the federal-provincial-territorial (FPT) climate change politics dynamics: before the Kyoto COP in 1997, all FPT ministers (except Quebec) agreed that Canada's negotiation position would be at stabilization of greenhouse gas (GHG) emissions at 1990 levels by 2010, but the federal government agreed in Kyoto to a much more demanding 6 % cut. Just days after the close of the Kyoto COP, provinces extracted reassurances from the federal government that no region of the country would be unreasonably burdened, and that provinces and territories would be involved in the development of the implementation plan for the Kyoto target, which Ralph Klein, then Premier of Alberta, declared to amount to a "provincial veto" (Harrison, 2007). This latter feature of the FPT power dynamic is in fact part of the Canadian constitutional set up, and highlights the importance of provincial buy-in to any federal commitment under international treaties: "While the federal executive may ratify treaties for all of Canada, if the subject matter of the treaty touches on any of the legislative powers [of provinces] […], provincial legislative approval is required to implement the treaty and give it effect domestically" (Barnett & Spano, 2008, p. 4).

In the lead-up to the Copenhagen COP15, Canada had articulated that it intends to embrace a 20 % reduction below 2006 levels by 2020 as its emission reduction target; however, in the context of the Copenhagen COP, this target was lowered to 17 % below 2005, Canada thus became the only developed country that lowered its target during COP15, relative to their pre-COP negotiation position. However, this target signifies an important component of the Canadian climate policy approach, which this author calls the Harper administration's "lockstep-with-America" climate policy doctrine: the 17 % below 2005 target was the position of the United States (USA) coming to the Copenhagen COP, and the Harper administration thus embraced it at the COP as Canada's target, citing the deep integration of the North-American economy and related competitiveness concerns as the reason to adopt the American target. In fact, the "lockstep-with-America" doctrine also finds manifestation in other, concrete climate policies, for example the adoption of the US-federal vehicle fuel efficiency standards by Canada, and has been invoked frequently as a justification for not regulating certain GHG-emitting activities (for example, the oil and gas sector) unless they are also regulated by the United States.

Canada's GHG emissions (excluding LULUCF[4]) have been steadily rising since the adoption of the UNFCCC, reaching their peak in 2004 about 23 % above 1990 levels, at which point Canadian emissions were about 2 % of global totals. The emissions profiles of Canadian

exercise power exclusively and which are defined by the Canadian constitution (Constitution Act of 1867). Instead, territorial governments exercise powers delegated to them unilaterally by the federal government.

4 Land use, land-use change, and forestry; Canadian LULUCF emissions, disregarding the effect of the introduction of the accounting instruments of "Harvested Wood Products" (HWP) and "natural disturbances" under the UNFCCC accounting rules, are widely volatile, and routinely change from being a substantial sink to being a substantial source from year to year. After the introduction of HWP accounting and the decision by Canada to ignore emissions from "natural disturbances" (wild fires and pests), the National Inventory Reports (NIR) show the Canadian LULUCF sector as a reliable sink. To illustrate the magnitude of the shift: in the 2013 NIR, the year with the largest emissions from LULUCF is 1994 with 164 Mt CO_2 from LULUCF. However, after retroactive implementation of these accounting changes, the 2018 NIR reports the LULUCF sector to be a net sink of 49 Mt CO_2 – a difference of 213 Mt CO_2, or roughly one third of Canadian non-LULUCF emissions for that same year.

provinces are very diverse, with provincial emissions of Saskatchewan and Alberta dominated by upstream oil and gas extraction and refining (a third and nearly half of emissions, respectively), while this figure is under 9 % in the rest of the country. At the same time, also owing largely to oil industry emissions, these two provinces have very high per capita emissions at 66 and 62 tons of CO_2-eq per capita, respectively – over three times the Canadian average and over seven times that of the provinces with the smallest per capita emissions, Quebec. In fact, if Saskatchewan and Alberta were independent countries, they would top the global list in terms of per capita emissions ahead of Kuwait. Similarly, the GHG intensity of GDP differs greatly, with Ontario, Quebec and British Columbia (BC) emitting around 300 grams of CO_2-eq per dollar of GDP in 2013, while the values for Alberta and Saskatchewan are three and four times higher, respectively (Saxifrage, 2016).

Furthermore, Canadian electricity supply is already relatively low-carbon, with nearly 80 % of generation coming from non-emitting sources. Again, this varies substantially across regions, with Quebec, Ontario, Manitoba and BC having very low, or virtually no, CO_2 emissions from electricity, while Alberta, Saskatchewan, New Brunswick and Nova Scotia rely on coal for substantial shares of their electricity generation. Coal phaseout was completed in Ontario in 2014, having previously provided 25 % of the province's electricity supply. Other provinces are also undertaking steps to phase-out coal, and federal regulations mandate an end to conventional coal use by 2035.

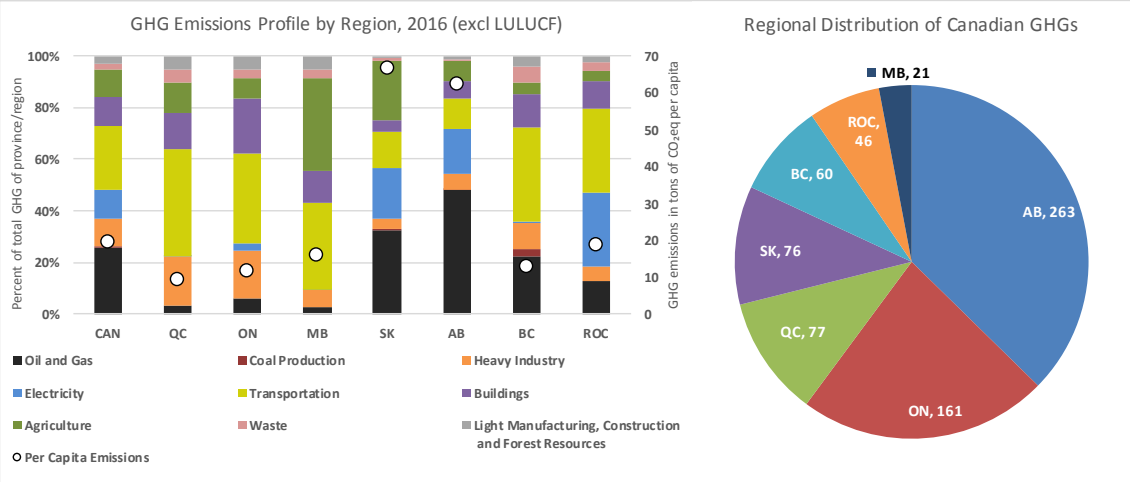


Figure 3-1. GHG profiles of Canada, its provinces and territories: a) stacked bars show fractions of GHG emissions by Canadian economic sector, white dots show average per-capita emissions (secondary y-axis), b) distribution of Canadian GHGs by provinces and territories. Labels show Mt CO_2-eq. CAN=Canada, QC=Quebec, ON=Ontario, MB=Manitoba, SK=Saskatchewan, AB=Alberta, BC=British Columbia, ROC=Rest of Canada (Newfoundland and Labrador, Nova Scotia, Prince Edward Island, New Brunswick, Yukon Territory, Northwest Territory, Nunavut). Source: authors' calculations using ECCC (2018) and StatsCan (2019).

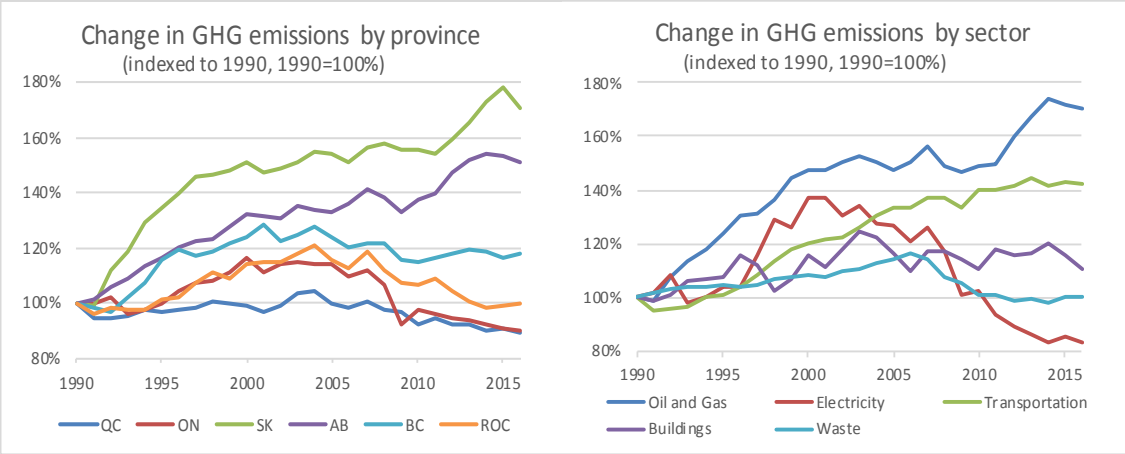


Figure 3-2. Change in GHG emissions over time, by province and economic sector; Source: authors' calculations using ECCC (2018)

Figure 3-1 shows the emissions profiles of Canada's regions, including their average per capita emissions, and the contribution of regions to the Canadian GHG emissions total. Figure 3-2 shows how GHG emissions developed in provinces and economic sectors. This also highlights the different dynamics in provinces and sectors: while emissions are in decline in all other provinces since the early 2000s, Alberta and Saskatchewan have experienced substantial emissions increases. Likewise, and relatedly, the oil and gas sector as well as transportation are the sectors with the most obvious upward trend, while all other sector are in decline or relatively stable.

Owing to these substantial differences between provinces, the provincial climate policy landscape across Canada is very fragmented. While all provinces have provincially legislated GHG emission reduction targets, these targets reflect substantially different forms (absolute emissions target or base-year-relative with different choices of base year) and target substantially different levels of emissions. There are several important climate policy initiatives, including BC's carbon tax, first introduced as North America's first broad-based carbon tax in 2008, the aforementioned Ontario coal phase-out, as well as regulations on emissions intensity for large emitters in Alberta, or an emissions cap for coal-fired electricity generation in Nova Scotia. Quebec, and for a limited period Ontario, has a cap-and-trade system linked with California through the *Western Climate Initiative*; and Alberta has recently also introduced a provincial carbon tax. Arguably, this fragmented policy landscape was encouraged during the Harper administration, where provincial legislators moved to fill a perceived void created by absence of federal leadership on climate. As a result, although, federal policy makers now find themselves in a position where established provincial measures exist, of varying stringency and approach, further constraining the federal response in these same areas, for example on carbon pricing.

These details highlight one centrally important element of Canadian domestic climate politics: that different regions require (and started to implement) completely different approaches, that very different concerns regarding possible side effects of climate action exists across Canada; and this, combined with provinces' constitutional power, suggests that differentiated policy responses, rather than a federally-imposed "one size fits all" approach, are needed to effectively address the policy challenge and to obtain provincial buy-in.

3.3 Case Study Approach and Methodology

This study mainly uses interviews and document analysis as its source of information. Interviews were held with senior government officials (two Assistant Deputy Ministers, former and current, and two Senior Policy Advisors) and senior influencers from the

environmental non-governmental organisation (ENGO) community (two Executive Directors, current and former, one Federal Policy Director, one Climate Policy Director, from three different organizations in total). The author's own active involvement in the advocacy work of Climate Action Network Canada, especially in the lead-up to the INDC announcement and during the UNFCCC COPs, also represents a rich basis of insights from which the interviews were conducted. For the document analysis, the main documents are the INDC and NDC submissions to the UNFCCC (Canada, 2015, 2017a), the Pan Canadian Framework documents (Canada, 2016, 2017b) as well as other relevant documents such as speeches, election platforms, mandate letters and media reports.

3.4 Equity in Establishing Canada's INDC

Despite the invitation to each party by the Lima COP, to articulate "how the Party considers that its intended nationally determined contribution is fair and ambitious, in light of its national circumstances" (UNFCCC, 2014, para. 14), and unlike other countries' INDCs, Canada's INDC does not contain an explicit section responding to this call. There are however certain implicit references to principles often also referenced in other countries justification of equity. Winkler et al. (2018), for example, found that over 100 Parties justify their contribution as fair and ambitious with reference to their small contribution to global GHG emissions. This justification is also used by Canada, although not with explicit reference to equity and ambition. Furthermore, the INDC document articulates Canada's national circumstances as having a "growing population, extreme temperatures, a large landmass, and a diversified growing economy with significant natural resources" (Canada, 2015, p. 1) posing substantial challenges for mitigation, and therefore, it is implied, Canada's mitigation target should be considered more ambitious relative to countries with the same or higher numerical targets but less challenging national circumstances. These arguments have been long-established tenets of the Canadian position, for example articulated in an UNFCCC workshop on a related topic in 2009 (Macaluso, 2009). Based on these points, the INDC concludes that Canada's mitigation target (30 % reduction below 2005 levels by 2030) "is ambitious but achievable" (Canada, 2015, p. 1).

In interviews with government officials, it was confirmed that no formal analysis was undertaken of what Canada's equitable contribution to, for example, a 2 °C consistent mitigation effort would be. In preparing advice for the INDC determination by the federal cabinet, where the final decision was taken under the protection of cabinet confidence, federal bureaucrats focused on a) comparability of effort with major competitors and b) a bottom-up determination of Canadian effort from provincial undertakings.

At the time the federal cabinet undertook the determination of the Canadian INDC's mitigation target, several other countries, including the EU, Mexico, and the US, had already submitted their INDCs, and additional in the case of other large emitters, other public communications had already announced their anticipated contributions (for example, in China's case in the context of the USA-China bilaterals in November 2014, White House, 2014). According to interviews with government officials, analyses were undertaken by Environment Canada for Canada's "main competitors," including the EU, US and China, to illuminate the level of effort needed by those Parties in order to achieve their targets. The frame of "competitors" highlights a concern of Canada, in setting the target, that climate action can result in competitive disadvantages and, therefore, a desire to limit exposure to such disadvantages. The analysis of efforts of other Parties was mainly based on an assessment of the required stringency of *additional* policy efforts required by the Party to reach its target, in order to then establish a similar level of additional policy effort for Canada. Thus, the policies and measures that had already been undertaken by Parties previously were disregarded in the analysis. These analyses contained both qualitative assessments of the additional effort (e.g. how "hard" it would be for the Party to implement these efforts) as well as quantitative assessment (e.g. regarding the marginal abatement costs implied in reaching the target).

The establishment of a comparable additional Canadian effort considered domestic sectoral analysis, according to respondents, with the oil and gas sector, and the oil sands/tar sands in particular, taking a central role in those considerations – reportedly with a policy objective of not impeding the future growth of that sector. While the INDC summarized several climate policy initiatives undertaken by Canada previously, it does not contain any details on how Canada intends to achieve the newly set mitigation target, with the exception of stating, in general terms, that it will do so in coordination with the United States. Further, the INDC envisions a shift in LULUCF accounting approaches, moving to a net-net approach including production of Harvested Wood Products and exclusion of "natural disturbances," an approach which in previous projections resulted in an additional 19-28 Mt CO_2 credit (Environment Canada, 2013, 2014), equivalent to around 10 % of the targeted reduction in 2030 relative to 2005. Furthermore, a decision with regards to the use of international offsets is reserved, while media reports at the time suggested that this was a central component of the internal plans of reaching the target. One respondent pointed to the LULUCF accounting change as evidence that there was some desire by the federal government to not be seen as a laggard, and thus to present a sufficiently large top-level mitigation number; and that the additional credits achieved through the accounting changes allowed the government to embrace a larger number without having to implement more stringent policies – in particular, no policies that would negatively impact the oil industry in general and the oil sands/tar sands in particular.

Interestingly, according to government respondents, there was also no consultation outside the federal government with regards to the mitigation target of the INDC: neither with industry, nor with environmental NGOs (respondents from these organizations confirmed this, although one NGO respondent expressed the view that consultations with industry had in fact taken place), nor with provinces. The latter is noteworthy given the response of provinces to the Kyoto target and the strong constitutional position of provinces, as outlined above. However, the provinces' premiers had issued a joint declaration on climate change (Quebec Declaration, 2015) shortly before the federal cabinet decision of the INDC target level was announced, which outlined, in very broad strokes, the provinces' views on Canadian mitigation action, which would have given the federal cabinet some confidence with regards to the compatibility of the provinces' general positions with its own.

Furthermore, in considering the feasibility of possible mitigation targets, analysis by Environment Canada was based on the assumption that provinces would implement the policies and targets that they had already adopted within their own jurisdictions, and the federal government decision-making with regards to the mitigation target mainly pertained to measures additional to the already-agreed provincial undertakings. According to one respondent, this approach was understood to reflect the bottom-up nature of the emerging new international climate regime, where Parties' self-determined contributions would be the central instrument of determining overall ambition. Additionally, it was the Canadian view that this bottom-up architecture ensured equity, since no entity would adopt a level of ambition that it would see as an unfair burden upon itself. Hence, through the approach of basing the total Canadian contribution to the international effort on the aggregate of provincially determined contributions, it was ensured that no province would consider having an unfair burden imposed on them by the federal level, as it had been provincial concern under Kyoto. Importantly, taking the full implementation of provincial measures and targets for granted, and adding additional (federal) effort to the sum of provincial efforts, effectively cemented the joint provincial level of effort in the collective Canadian target as communicated in the INDC. This is particularly significant since, just like Canada as a whole, several provinces were at the time not on track to meet their 2020 targets (see, for example, for Ontario: ECO, 2013, 2015), let alone their deeper 2030 targets. However, one ENGO respondent expressed the view that this approach was taken to ensure that the target remained sufficiently weak, and that no policies would be required that would adversely impact the anticipated growth in the oil sector, and in the oil sands/tar sands in particular.

It is also noteworthy that the mitigation target marked an end to the Harper government's "lockstep-with-America" climate policy doctrine: compared with Canada's 30 % reduction by 2030, the US had committed to a 26-28 % reduction by 2025, a more stringent overall target than the Canadian one. Respondents hinted that the shift to a different target year and different target level was done, as adopting the US target for Canada would have resulted in a mitigation commitment that was too stringent; thus, choosing a larger percentage figure at a later date was perhaps intended to somewhat obscure the fact that the Canadian target was much less ambitious than the US pledge.

Finally, like other developed countries' INDCs, the Canadian INDC exclusively dealt with mitigation, not with adaptation or with the provision of means of implementation and support to developing countries.

3.5 Equity and Fairness in the Pan-Canadian Framework and NDC

As mentioned before, the new NDC was submitted in May 2017. While retaining the same mitigation target, the NDC submission also contains a synopsis of the central components of the Pan-Canadian Framework on Green Growth and Climate Change (PCF). According to one government respondent, the PCF was brought into the NDC document to demonstrate to international partners the seriousness of Canada's commitment to meet the target, as well as to establish a measure of international accountability with regards to implementation. Since the NDC submission thus made the PCF an integral component of the NDC, it is appropriate to consider the genesis of the PCF, especially from an equity point of view. In particular, it is instructive to consider the FPT equity dynamics, as well as non-governmental stakeholder engagement.

In contrast to the lack of direct provincial consultations by the Harper administration in the context of the determination of the INDC target, the election platform of Justin Trudeau's Liberal Party committed to hold a first ministers' meeting, i.e. a meeting between the federal prime minister and the premiers of the provinces and territories, within 90 days of taking office "to establish a pan-Canadian framework for combatting climate change" (LPC, 2015, p. 39). Based on this commitment, a meeting of first ministers was held in Vancouver in March 2016 and resulted in the Vancouver Declaration (2016), a joint communique wherein provinces, territories and the federal government agreed on the principles of, and a 6-7 month long process to finalize, a pan-Canadian framework. The agreed process included working groups on four thematic areas, which were tasked to report back with concrete policy proposals, and a process for consultations with Canadians via submissions through dedicated portals. In terms of ambition, the Vancouver Declaration arguably codifies the "floor-not-a-ceiling" characterization of the INDC mitigation target, by committing FPT governments to collectively undertake action suitable for "meeting or exceeding Canada's 2030 target of a 30 % reduction below 2005 levels" (Vancouver Declaration, 2016).

The Declaration also recognized that provinces have already developed their own policy agendas and approaches, and that they should be given flexibility to further pursue approaches that they consider suitable to their specific contexts. In that context, the Declaration explicitly invokes the notion of fairness, when talking about the need to recognize the different provincial circumstances and, resulting from these, the need to accommodate flexibility in approach ("recognizing the diversity of provincial and territorial economies, and the need for fair and flexible approaches," Canada, 2016). The PCF implements this principle through the instrument of "equivalency agreements," where provinces and the federal government would enter into agreements that provinces' own policies in a specific area are equivalent to or more stringent than federal policy, in terms of environmental outcomes. For example, Nova Scotia is, at the time of writing, in negotiations with the federal government with regards to its policies addressing coal-fired electricity generation.

According to respondents, one of the design principles of the Pan-Canadian Framework was the recognition of provincial leadership in the climate field and a desire to avoid undermining this leadership, but also to provide "backstops" for various climate policy areas to set a minimum standard of stringency, bring laggards along and prevent backsliding. This approach represents a break with long-standing climate policy practice, since the federal government is asserting jurisdiction in areas where provinces had previously claimed exclusive or principal responsibility. Consequently, the PCF has an equity component as it ensures at least a degree of comparability of effort among provinces and territories, thus levelling the playing field and eliminating 'free-riding.' Whether this approach will succeed is yet to be seen, as currently several planks of the PCF are under siege. For example, Ontario rescinded its own cap-and-trade programme of carbon pricing, and consequently the federal government began to impose its carbon pricing "backstop" on Ontario; several provinces are also suing the federal government, claiming that federal carbon pricing exceeds federal jurisdiction.

Despite this potential setback, the discussions around carbon pricing in the lead-up to adoption of the PCF also serve as an example for explicit invocation of intra-national fairness considerations: the federal carbon pricing proposal envisioned a carbon price starting at $10 per ton of CO_2-eq starting in 2018, and increasing $10 per year until reaching $50 in 2022. British Columbia already had a broad-based $30 per ton carbon tax in place, and Alberta had just announced a carbon tax that would also rise to $30 in 2018. Meanwhile Quebec (and for a while, Ontario) were using a cap-and-trade system to price carbon, where price levels were below the $10 mark in 2016 and projected to remain below the $50 federal price in 2022[5]. On that basis, the BC premier claimed that this price differential would be unfair, and arguably extracted a concession from the federal negotiators to review the fairness of the overall carbon pricing regime in 2020 before the price level would exceed BC and Alberta's.

In terms of consultations, besides the central engagement of provinces and territories, through joint FPT working groups, broad consultations were held with Indigenous Peoples organizations, industry, and environmental groups, as well as the general public. Among the respondents from environmental NGOs, there was disagreement with regards to the effectiveness of those consultations. One respondent referred to a "consultation vortex," where submissions were made to a web portal, and it then remained opaque what, if anything, happened with those submissions. This respondent saw "zero ENGO influence" in the design of the various PCF elements. In contrast, another ENGO respondent would point to several clear instances where policy proposals appeared to have been taken directly from ENGO (as well as industry) submissions, including using identical figures and phrases from these submissions.

Interviews as well as analysis of Canadian media coverage of the federal election campaign and the immediately following period (including COP21) strongly suggest that the Trudeau administration had a preference for strengthening the Canadian mitigation target. For example, Catherine McKenna, the Environment and Climate Change Minister, is quoted in November 2015 as saying about the INDC target inherited from the previous administration: "certainly we want to try to do better" (CBC News, 2015a). This can be partly explained by the domestic political context, but there is also clear evidence that the Trudeau government wanted to set itself apart on the international scene from the previous government, which had not only withdrawn from the Kyoto Protocol (which Stephen Harper once called a "socialist scheme to suck money out of wealth-producing nations", CBC, 2007) but also from the Convention to Combat Desertification, and which generally displayed a more sceptical position *vis-à-vis* multilateralism. This suggests that the Trudeau administration is in principle susceptible to considerations of international fairness, but, as

5 In fact, at the most recent joint California-Quebec allowance auction, allowances of the 2021 vintage sold for an average price of $20.47, just over half of what the federal carbon price is scheduled to be in 2021 (WCI, 2018). The 2022 vintage has not been up for auction yet.

respondents suggested, it became clear to the then-new government that the implementation of the Harper-era INDC target would require a more substantial domestic effort than had been expected. Thus, the government's rhetoric shifted from "certainly want to do better" to "it's a floor, not a ceiling", and subsequently the focus shifted further to implementation, with an aspiration to not only meet but possibly exceed the target, without necessarily formally changing it. Nonetheless, this initial desire to enhance ambition indicates an understanding that the inherited target is insufficient *vis-à-vis* the necessities of science and equity.

As mentioned above, in May 2017, 6 months after the adoption of the PCF, Canada submitted a new first NDC to the UNFCCC. The tabular format of the NDC, including the mitigation target level, remained largely unchanged from the 2015 INDC document. However, the narrative component of the submission was completely replaced. The new version essentially summarizes the PCF and the various domestic policy initiatives envisioned to implement the mitigation target. In the context of this narrative text, the NDC also mentions the PCF's efforts on adaptation, making Canada's NDC one of very few developed countries NDCs to consider adaptation. However, considering that Canada continued to hold a strong position at UNFCCC negotiations that NDCs should in the first instance be about mitigation, it appears that the mentioning of adaptation in the narrative portion of the NDC does *not*, from Canada's point of view, constitute an inclusion of adaptation in the NDC scope.

Similarly, while central to the question of international equity, climate finance as well as other means of implementation and support are not included in the NDC scope. This is notable since the PCF document does reiterate, in a section entitled "International Leadership," Canada's international climate finance commitment of CA$ 2.65bn for the 2016-2020 period[6], made in the lead-up to COP21, but the elaboration of financial details in the NDC submission is limited to domestic financing arrangements. This is important as it has often been argued that wealthier countries' total contribution to the global response to the mitigation challenge must be understood as the sum total of their domestic mitigation *and* their support for mitigation outside of their borders (CSO Equity Review, 2015, 2016, 2018; Holz et al., 2018). Following this logic, the equity of the total Canadian contribution cannot be assessed by scrutinizing the NDC document alone, since climate finance and support considerations are not elaborated there. This, in turn, becomes important, since Canada itself chose not to provide an explicit section on why it considers its contribution to be "fair and ambitious" as encouraged by the Lima call (UNFCCC, 2014, para. 14) and reiterated in Paris (UNFCCC, 2015, para. 27), neither in the INDC nor in the NDC submission. It is also apparent that Canada itself sees fairness considerations to be relevant in the context of climate finance, as evidenced by utterances of the Foreign Affairs Minister, Stephane Dion, at the Paris COP, where he called the Canadian $2.65bn pledge Canada's "fair share" of the global climate finance. According to respondents from environmental NGOs, this statement was explicitly linked by Dion to the $4bn per year climate finance demand they had been articulating as Canada's fair share[7].

6 The CA$ 2.65bn commitment envisions disbursement to ramp up gradually from CA$ 300m per year in 2016/17 to CA$ 800m in 2020. By contrast, the Harper government had pledged (and largely delivered; see Tomlinson, 2013, 2014) CA$ 1.2bn at the Copenhagen COP15 in 2009 for the "Copenhagen Fast Start Finance" period of 2010-2012, i.e. CA$ 400m annually on average. After the fast start finance commitment, the level of international climate finance dropped precipitously to a total of about CA$ 400m over the 2013-2015 period, i.e. about CA$ 133m per year on average (Tomlinson, 2017), although a figure as low as CA$ 50m per year has been given by government (Barton, 2015).

7 However, while the ENGOs' CA$ 4bn demand is an annual figure, the $ 2.65bn federal announcement covers a 6-year period. Furthermore, it is unclear how the difference between $ 4 and $ 2.65 is to be explained. According to respondents' accounts, they were told that the remaining $ 1.35bn were expected private co-finance to be leveraged by the Canadian public climate finance investment, while a media report at the time (Barton, 2015) suggested that the $ 4bn figure was reached by adding previous Canadian climate finance (e.g. the $ 1.2bn from the Copenhagen fast start finance period) to the newly announced pledge.

3.6 Discussion and Conclusion

Canada is an interesting case to study because of the change in government that occurred between the submission of Canada's INDC and the Paris COP, with substantially different approaches to climate policy between the respective governments. While there has been a notable shift in rhetoric toward Canada's approach to climate policy, both domestically and with regards to the engagement with the international community, there has been no change in the overall mitigation target, nor is a discernible change in the approach to international equity apparent. However, the adoption of the PCF marks a substantial shift in Canadian federal climate policy in that for the first time, a Canadian federal government articulated a coherent plan intended to implement mitigation commitments made internationally. While not a shift in quantity (the target) or the justification on equity grounds, this nonetheless represents a major qualitative shift.

As discussed earlier, the original target setting took equity into account through an international comparative effort exercise (albeit a non-transparent one), where one of the main discursive elements focused on Canadian national circumstances (northern climate, resource-based economy, growing population, largely zero carbon electricity supply, etc.) to highlight why mitigation in Canada is relatively more difficult than in other countries. The decision after the change in government to refrain from changing the INDC target, however, was based on concerns about domestic implementability. This change in rhetorical approach is exemplified in the time series charts from the INDC/NDC submission documents: Figure 3-3 shows how the ways in which the mitigation target was presented in the INDC (left) and NDC documents (right).

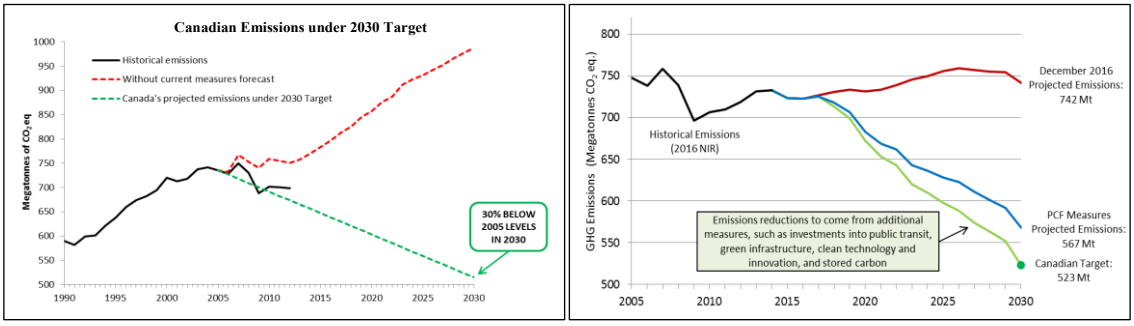


Figure 3-3. Graphical Representation of mitigation target in Canada's 2015 INDC and 2017 NDC submissions: (a) "without current measures" baseline emissions (red dashed line) and target emissions (green dashed line) in Canada's 2015 INDC submission (source: Canada, 2015); (b) projected emissions (red line – "with current measures"), emissions resulting from PCF implementation (blue line), shortfall to mitigation target (green line) (source: Canada, 2017a).

Notably, the chart in the INDC document represented, as the reference case, a "without measures" scenario, and selected, among the emissions forecasts prepared by Environment Canada, the scenario with the highest emissions of three main cases (Environment Canada, 2014), both presumably to make the gap between forecast and target appear as large, and therefore as ambitious, as possible. On the other hand, the chart in the revised NDC submission presents, as the reference case, a scenario with "current measures," i.e. pre-PCF measures, and highlights transparency by also providing an estimate as to how far PCF measures will go towards implementing the full mitigation pledge, as well as highlighting the remaining shortfall.

Given the Harper government's track record on climate change, it was arguably the Lima COP decision's call for Parties to develop and submit their INDCs that provided the impetus to do so ahead of COP21. And given the approach to largely just "add up" provincial pledges and policies, the resulting target indirectly enshrined provincial targets, via the Canadian national INDC mitigation pledge, in an international commitment. Thus, it could be argued

that without the instrument of the INDC, this target would not have been expressed at that time. After the change in government, the existing INDC target set the minimum level of ambition for the new government to calibrate domestic implementation efforts to. Considering, as described above, that the Trudeau administration appeared to have a great appetite for enhancing ambition upon taking office, and that three-and-a-half years later the mitigation target still has not been changed, this highlights their difficulties finding a domestic policy suite that they consider palatable for provincial governments, stakeholders and the Canadian public at large. This is also supported by the emission trends chart in the 2017 NDC, which shows a residual gap between target and PCF measures. Thus, it can be argued that the existence of a target at the beginning of the Trudeau government's term also increased its ambition relative to a scenario where such a target would not have existed.

Given the current federal government's commitment to implementation of this target, a further interesting case is currently unfolding in the Canadian climate policy arena that could shed light on the effectiveness of the NDC instrument to increase ambition, where several provinces have started to backtrack from previous climate policy commitments. However, since their previous ambition level is contained in the Canadian NDC, and the federal government is committed to its implementation (and has been shown to be asserting jurisdiction where it has not historically done so), it is plausible that the NDC, in combination with federal commitment, will prove to be an effective safeguard against provincial backsliding, thus mirroring the Paris Agreement's no-backsliding provisions.

Finally, in the context of the COP21 decisions' request for Parties to "communicate or update by 2020" their NDCs (UNFCCC, 2015, paras. 23–24), it is noteworthy that, while there is no evidence that concrete work is currently under way to prepare a new NDC for Canada, Environment and Climate Change Minister Catherine McKenna has signed the ministerial "Declaration for Ambition" (Republic of the Marshall Islands (RMI), 2018), a Marshall-Island-led initiative wherein countries commit to exploring options for enhancing their own ambition in light of the Paris decision's call to resubmit. Additionally, and more recently, media stories cited the Minister clearly referencing paras 23-24 of the Paris decision by saying that "in 2020 everyone has to come back and be more ambitious," in which context she also indicated that Canada would do so (Rabson, 2018). It remains to be seen what form, if any, such an ambition enhancement would take, and what role, if any, equity considerations would play therein. Nevertheless, given Canada's past application of a comparability of effort approach, it appears plausible that if other Parties were to increase their ambition, Canada would follow suit.

4. Case Study of the European Union

In March 2015, the European Union and its Member States (EU) became the second Party to the UNFCCC, after Switzerland, to communicate an INDC. With the EU's ratification of the Paris Agreement, its INDC became the NDC. At the time of writing, the EU has neither updated nor revised its first NDC, nor communicated a second NDC. This case study therefore analyses the first NDC, as submitted in March 2015.

4.1 The form and stringency of the Mitigation Target

The NDC document is relatively short (five pages) and only lists the EU's mitigation contribution. According to one respondent (German policy officer), the EU aimed to demonstrate climate leadership, and therefore submitted its NDC fast and with a clear and concise structure that could be an example for other Parties.

The EU and its Member States commit to a binding absolute reduction target of at least 40 % domestic reduction in greenhouse gas (GHG) emissions by 2030 compared to 1990 levels. According to one respondent, this target was directly "copy-pasted" from the EU's *2030 climate and energy policy framework*. New, however, was the decision to exclude international credits from this target. The target is to be fulfilled jointly – i.e. allowing for effort-sharing among the Member States.

The European Council decided on the 2030 climate and energy policy framework in 2014, before COP20 in Lima. Despite ongoing differences in views between the Visegrad+ Group[8] and more progressive EU Member States such as Denmark, France, Germany, Sweden and the United Kingdom (Ydersbond, 2016), the Russia-Ukraine crisis and the importance of energy security reinforced common and coherent EU climate policy, and contributed to reaching this framework in 2014 (Oberthür & Roche Kelly, 2008). After extensive consultations with stakeholders such as non-governmental organisations (NGOs), trade unions, industry associations, companies, Member States, local authorities, research and other institutions, and members of the public, as well as frantic lobbying through various instruments, as well as extensive preparations by Member States, the European Council agreed on common targets for 2030 (see Ydersbond (2016)). In a "genuinely negotiated compromise" (Ydersbond, 2016, p. 107) the EU decided to attain at least a 40 % reduction in GHG emissions below 1990 levels, and an increase the share of energy efficiency and renewable energy to 27 % of gross energy consumption (Dellano-Paz, Martínez Fernandez, & Soares, 2016).

4.2 The role of science in setting the mitigation target

All respondents indicated that the long-term EU target to reduce emissions by 80-95 % by 2050 compared to 1990, as mentioned in the NDC (European Union, 2015b, p. 3), can be traced back to the *Intergovernmental Panel on Climate Change* (IPCC). The Fourth Assessment Report of the IPCC (AR4) describes that in order to keep the CO_2-eq concentration in the atmosphere below 450 parts per million (ppm), Annex I countries should reduce their emissions by 80-95 % by 2050, and emissions by all Non-Annex I countries need to deviate substantially from the baseline (Gupta et al., 2007, p. 776).

One policy officer from The EU stated that without the IPCC Fourth Assessment Report (AR4) report in 2007, the EU would not have been able to go so far in its emission reduction targets. Another respondent notes that the long-term target from the IPCC AR4 has been used consistently by the EU. It is first mentioned in the Council Conclusions on preparations

8 The Visegrad countries are Czech Republic Hungary, Poland and Slovakia. In the lead up to the 2030 climate and energy framework, they were led by Poland, and called 'Visegrad+ Group because Romania, Bulgaria and, for a while, Croatia, also joined (see Ydersbond, 2016; 32).

for the UN climate negotiations in Poznan in 2008 (European Council, 2008) and also appears in the 'Roadmap' of 2011, in which the EU Commission further develops the transition towards a competitive low carbon economy against the backdrop of continued global population growth, rising global GDP and varying global trends in terms of climate action, energy and technological developments (European Commission, 2011).

However, one interviewed researcher noted that the -40 % by 2030 reduction target is, as such, not science-based, but a derivative from the -80 % by 2050 target. Another interviewed researcher states that the -40 % target is also science-based, but first and foremost negotiations-based. The -40 % by 2030 target was harshly criticized by environmental NGOs, the renewable industry and others because it represents the lowest possible target for remaining within the trajectory of 80-95 % reduction in 2050 (Ydersbond, 2016).

One EU Policy officer noted that there may well be a new debate on the EU's long-term target, because the context has changed. In particular, the NDCs that were submitted in the run-up to the negotiations in Paris in 2015 were formulated in the context of limiting global average temperatures to 2 °C above pre-industrial levels. The Paris Agreement, however, became more ambitious, and also pursues efforts to limit the temperature increase to 1.5 °C above pre-industrial levels (Article 2.1a, UNFCCC, 2015). Furthermore, the IPCC AR4 (2007) report refers to the Annex I and Non-Annex bifurcation that the EU no longer supports in the UN climate negotiations. Finally, the EU is currently doing an internal analysis with several Directorate-Generals (DGs) to see how much further they can drive mitigation efforts.

4.3 How the EU explains that its mitigation contribution is fair

According to one respondent, the EU put considerable effort into writing the section on how the NDC is fair and ambitious, which demonstrates that it is considered important. Because the EU was the second Party to submit an NDC, it could not formally compare its NDC ambitions to other countries.

The EU calls its target a significant progression beyond the earlier 20 % emission reduction commitment by 2020 compared to 1990. This target, as outlined in the 2009 Energy and Climate Package still included the use of international credits.

The EU furthermore contextualises its emission target in four distinct ways. First, it states that the EU has already reduced emissions by 19 % compared to 1990, while also increasing its GDP by 44 %. Second, the EU states that it has also reduced its per capita emissions from 12 tonnes CO_2-eq in 1990 to 9 tonnes CO_2-eq in 2012 and that the per capita emissions are projected to be at 6 tonnes CO_2-eq in 2030. Third, the EU states that its emissions peaked in 1979. And finally, the EU's mitigation target is stated to be in line with the science (the IPCC is explicitly mentioned). As described above, this reflects the crucial role science has played in the EU's climate policy formulation over time (see also Dupont & Groen, 2018).

In conjunction with the EU's early submission of its NDC, these statements could be considered as clear signals to other Parties, that the EU is a frontrunner in mitigating climate change, regardless of how you aggregate emissions (total or per capita); that GDP growth does not preclude emission reduction; and that science should inform emission reduction targets.

The NDC text also includes a section called 'follow up'. Here, the EU aims to demonstrate leadership by urging "all other Parties, in particular major economies, to communicate their INDCs by the end of March 2015 in a manner that facilitates their clarity, transparency and understanding" (European Union, 2015b, p. 5). The proposed deadline for submission ('end of March') is more stringent than the deadline set by the UNFCCC (see UNFCCC, 2014, para. 13). Furthermore, the EU singles out 'major economies', thus side-lining the Annex I – Non-Annex I bifurcation that thus far dominated the differentiation of responsibilities to address

climate change under the UNFCCC (see Pauw et al., 2014) and hinting at more responsibilities by emerging economies.[9]

4.4 Effort-sharing between Member States, economic sectors, or other key stakeholder groups

Large differences exist among the different EU Member States in terms of per capita GHG emissions[10] and per capita incomes.[11] Effort-sharing legislation establishes binding annual GHG emission targets for Member States for emissions not covered by the EU Emission Trading Scheme (ETS[12]) such as transport, buildings, agriculture and waste. Although effort-sharing on emission reduction is always subject to negotiations, one respondent (EU policy officer) notes that countries always find agreement on emission reduction effort-sharing easier than, for example, effort-sharing to take up refugees. Effort-sharing to reduce emissions was first done to meet the EU's -8 % target under the Kyoto Protocol. This target was divided among the Member States and codified into supranational EU law five years after the UN climate negotiations in Kyoto, and ranged from negative 28 % Luxemburg to positive 27 % for Portugal (see Figure 4-1) (European Council, 2002).

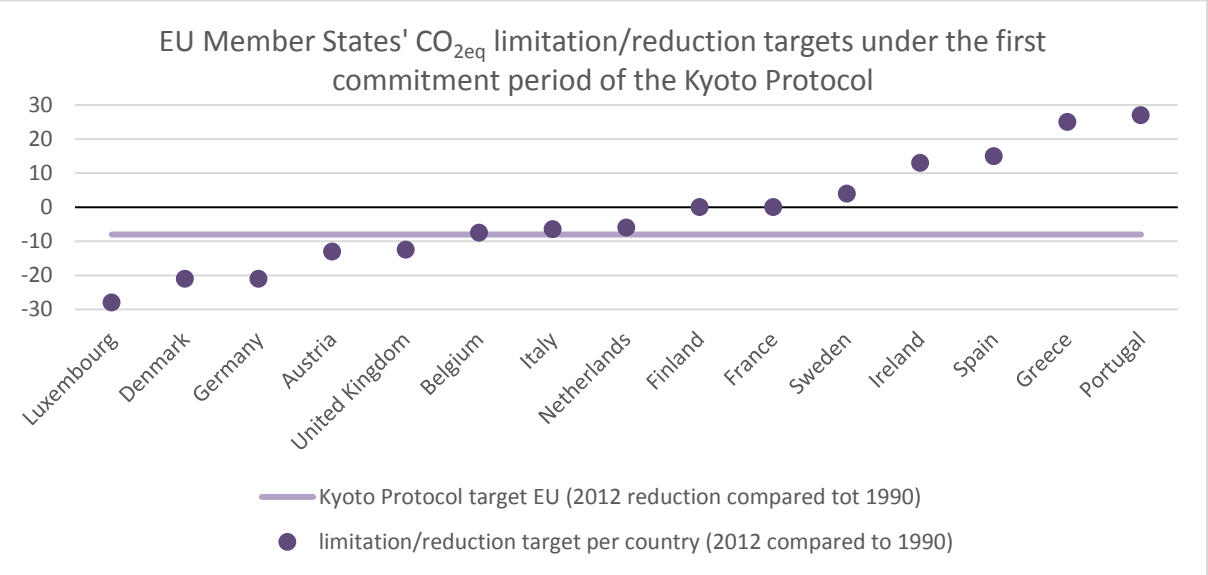


Figure 4-1. Effort-sharing agreement among the Member States to meet the EU's target under the 1997 Kyoto Protocol. Source: author's calculation based on European Council (2002).

Effort-sharing among Member States' is based on their relative wealth, measured by gross domestic product (GDP) per capita. This ensures fairness because higher income Member States take on higher emission reduction or limitation targets than lower-income Member States. In addition, since the *Energy and Climate Package* (2009), effort-sharing is also confined by upper and lower bounds, and the targets are adjusted to balance fairness and

9 The Annex I countries is a group 43 Parties under the UNFCCC that include all of the Member States of the Organisation for Economic Cooperation and Development (OECD) (as of 1992) plus a host of additional states undergoing the process of transition to a market economy in the wake of the Soviet Union's collapse.

10 Malta and Liechtenstein have the lowest CO2-eq emissions per capita (5 tonnes/year), while Luxembourg has the highest (19.8 tonnes/year).

11 Bulgaria has the lowest GDP per capita (EUR 10.200), and Luxembourg the highest (EUR 30.500).

12 The EU emission trading scheme that has been in effect in the EU (all 28 Member States) as well as Iceland, Liechtenstein and Norway. The ETS operates on a 'cap and trade' principle, whereby a cap is set on the total amount of greenhouse gases that can be emitted by installations covered by the system (around 45 % of the EU's greenhouse gas emissions); within the cap, companies can trade emission allowances amongst each other as needed.

cost-effectiveness for Member States with an above average GDP per capita (European Commission, 2016). Transferring parts of annual emission allocation to other Member States is also allowed.

As Member States evolve, so does their share in the EU's emission reductions. The Energy and Climate Package of 2009 sets an EU target of -10 % by 2020 compared to 2005 for emissions in non-ETS sectors. Here, Portugal has a target of +1 %, as it no longer had the lowest GDP per capita among the Member States following the 2004 enlargement of the EU.

In May 2018 (three-and-a-half years after the 2030 climate and energy policy framework was agreed) EU Member States agreed on specific targets for countries (see Figure 4-2). These vary from 0 % reduction (Bulgaria) to -40 % reduction (Luxemburg and Sweden) by 2030 as compared to 2005 emission levels (European Commission, 2018b).

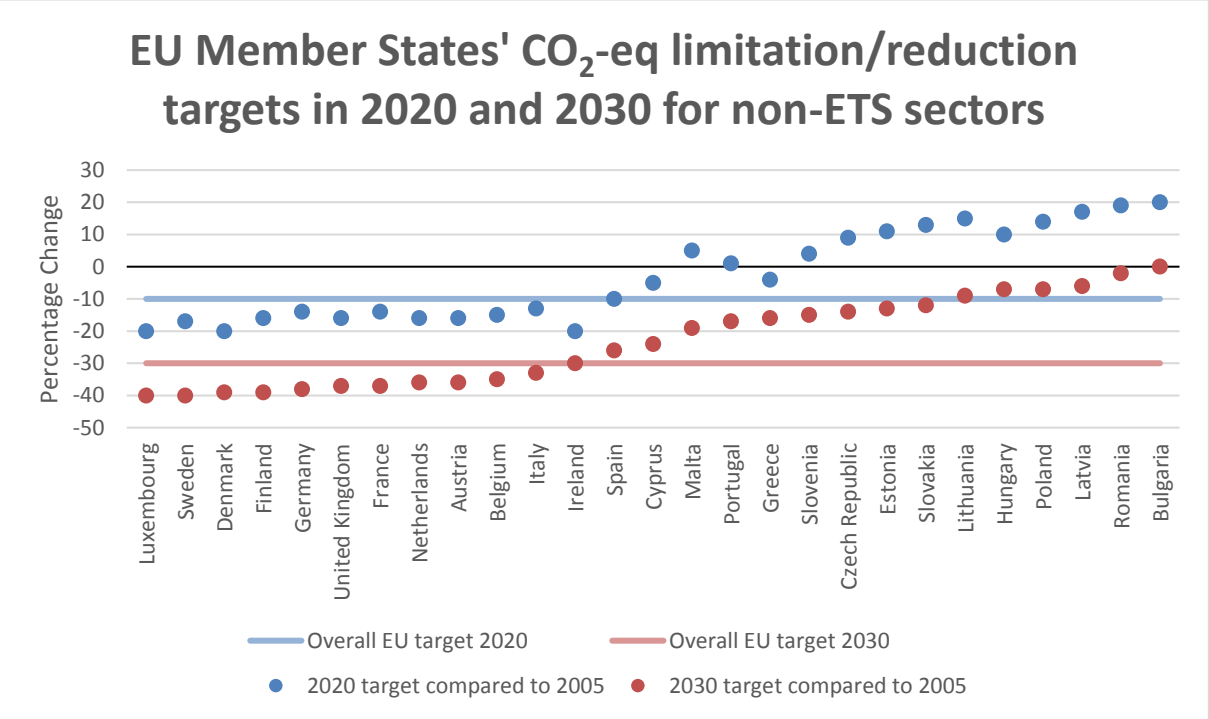


Figure 4-2. Effort-sharing agreement among the Member States to meet the EU's mitigation target of the Climate and Energy Package from 2009 (blue) and the 2030 climate and energy policy framework from 2014 (red). Source: author's calculation based on European Council (2009) and European Commission (2018).

4.5 Policy options considered as part of target setting

The policies to implement the 2014 targets are still being developed. Two of the interviewed policy officers state that this could prevent the setting of a new mitigation target for an update of the EU NDC. At the same time, the policies that were developed to share the efforts among Member States when implementing the EU's renewable energy and energy efficiency targets of the 2030 climate and energy policy framework led to an overhaul of the targets. The renewable energy target was increased to 32 %, and the energy efficiency target to 32.5 % (European Council, 2018), both up from 27 %. If all Member States do what they promised, it is estimated that these targets would decrease EU-wide emissions by about 45 % by 2030, below 1990 levels; i.e. 5 percentage points further compared to the current NDC target (EU policy official in interview). According to an interviewed researcher, the EU is likely to overachieve on all targets. He stated that the energy efficiency target is based on models that so far exclude options with high potential for increasing efficiency; that

renewable energy became so much cheaper that the EU should have increased the renewable energy target by more than 5 % extra, and that the EU will also reach the 45 % target easily, according to modelling exercises.

4.6 Adaptation and Means of Implementation

The NDC of the EU does not refer to adaptation or to the provision of technology transfer, capacity building, climate finance in its NDC. Adaptation was briefly discussed in the formulation process, but all the interviewed policy officials noted that the Working Party decided to keep the line of the EU in the UN climate negotiations that the scope of NDCs is mitigation. One respondent (EU policy official) noted that the EU instead decided to submit a separate document on the EU undertaking on adaptation. *The European Union undertakings in adaptation planning* (European Union, 2015a) was submitted to the UNFCCC three months after the NDC. In this document, the EU states that it considers adaptation to be an integral element in its internal policy and planning processes, mentioning that it decided that at least 20 % of its budget for 2014–2020 should be spent on climate change-related action, including adaptation. The submission describes adaptation at EU-level, at Member State-level (with examples of planning, coordination, involving stakeholders, implementation, transnational/regional cooperation, as well as monitoring, reporting and evaluation), and in collaboration with other Parties. As part of the latter, the EU also briefly describes the mobilization of technology and climate finance to support developing countries (European Union, 2015a).

5. Case Study of Kenya

5.1 Background

Kenya communicated its INDC on 23 July 2015, which became its NDC following ratification of the Paris Agreement. Kenya ratified the Paris Agreement on 25th December 2016, and it entered into force in January 2017, thus formalizing Kenya's commitment to addressing climate change under the Paris regime. The NDC is therefore Kenya's primary international climate policy.

Equity is a key feature of Kenya's NDC, and its subsequent implementation. Even although the country's NDC presented an ambitious mitigation target – a 30 % abatement of greenhouse gas (GHG) emissions below business-as-usual (BAU) by 2030 – Kenya, like other countries with NDCs up to 2030, will not communicate an updated NDC in 2020, as requested by the Paris decision (UNFCCC, 2015, para. 24). It will instead finalize the *Second National Climate Change Action Plan 2018-2022* (hereafter NCCCAP 2) and use it as the implementation policy document for the first NDC. This analysis therefore focuses on how equity has been reflected in the first NDC, and the draft NCCAP 2.

5.2 Legal and Policy Landscape on Climate Change

Kenya's contributions to addressing climate change are anchored on several legal and policy instruments. The Climate Change Act of 2016 is the centrepiece legislation, and is operationalised by the National Climate Change Policy 2018. Implementation is anchored on the National Climate Change Response Strategy 2010 and the subsequent National Climate Change Action Plans (NCCAP). The National Adaptation Plan (NAP) is a crucial additional policy document.

At the international level, Kenya has ratified the key climate change treaties: UNFCCC, Kyoto Protocol, and the Paris Agreement. These treaties are now part of Kenyan law (The Climate Change Act, No. 11 of 2016, 2016, see Table 1) and act as references to national-level climate policies and plans. The East African Community's Climate Change Master Plan also forms part of Kenya's climate policy landscape.

Several institutional arrangements, especially related to the financial mechanisms of the UNFCCC, have been developed. The National Environment Management Authority (NEMA) is the implementation of entity of the Adaptation Fund, while the Ministry of Finance (National Treasury) is accredited as the National Designated Entity of the Green Climate Fund (GCF). In several counties, the sub-national tier of the two-level government, have developed Country Adaptation Funds (CAFs). See Table 5-1. National and county-level policies relevant to implementation of climate change in Kenya below for a summary of key policy instruments.

Table 5-1. National and county-level policies relevant to implementation of climate change in Kenya. Source: Reproduced from the draft National Climate Change Action Plan (NCCAP) 2018-2022 (Government of Kenya, 2018a, p. 25)

Instrument	*Description*
National Level	
Kenya Vision 2030 (2008) and its Medium-Term Plans	*Kenya Vision 2030* – the country's development blueprint – recognized climate change as a risk that could slow the country's development. Climate change actions were identified in the Second Medium Term Plan (MTP) (2013-2017) (Government of Kenya, 2013b). MTP 2018-2022 (Government of Kenya, 2016)

Instrument	*Description*
	recognized climate change as a crosscutting thematic area and mainstreamed climate change actions in sector plans.
National Climate Change Response Strategy (2010)	Kenya's *National Climate Change Response Strategy* (Ministry of Environment and Natural Resources (MENR), 2010) was the first national policy document on climate change. It aimed to advance the integration of climate change adaptation and mitigation into all government planning, budgeting and development objectives.
County Integrated Development Plans (2013)	County Governments are required to mainstream climate change in County Integrated Development Plans (CIDPs). All 47 CIDPs developed in 2013 mentioned the impacts of climate change and many identified actions to address these impacts. Adaptation actions were a priority for many County Governments.
National Climate Change Action Plan (2013-2017)	Kenya's *National Climate Change Action Plan, 2013-2017* (Government of Kenya, 2013a) was a five-year plan that aimed to further Kenya's development goals in a low carbon climate resilient manner. The plan set out adaptation, mitigation and enabling actions.
National Adaptation Plan (2015-2030)	Kenya's *National Adaptation Plan 2015-2030* (MENR, 2016b) was submitted to the UNFCCC in 2017. The NAP provides a climate hazard and vulnerability assessment, and sets out priority adaptation actions in 21 planning sectors.
National Spatial Plan (2015-2045)	The *National Spatial Plan 2015-2045* (Ministry of Lands and Physical Planning, 2014) provides a national spatial design framework for the integration of social, economic and political policies. The plan indicates Kenya's intention to enhance disaster preparedness in all disaster-prone areas and improve the capacity for adaptation to climate change.
Kenya's Nationally Determined Contribution (NDC) (2016)	Kenya's NDC (Kenya, 2015b) under the Paris Agreement of the UNFCCC includes mitigation and adaptation contributions. Regarding adaptation, "Kenya will ensure enhanced resilience to climate change towards the attainment of Vision 2030 by mainstreaming climate change into the Medium-Term Plans (MTPs) and implementing adaptation actions." The mitigation contribution "seeks to abate its greenhouse gas emissions by 30 % by 2030 relative to the BAU scenario of 143 Mt CO_2-eq." Achievement of the NDC is subject to international support in the form of finance, investment, technology development and transfer and capacity development.
Climate Change Act (No. 11 of 2016)	The *Climate Change Act (No. 11 of 2016)* is the first comprehensive legal framework for climate change governance for Kenya. The objective of the Act is to "Enhance climate change resilience and low carbon development for sustainable development of Kenya." The Act establishes the National Climate Change Council (Section 5), Climate Change Directorate (Section 9) and Climate Change Fund Section 25).
Green Economy Strategy and Implementation Plan (GESIP 2016-2030)	GESIP (MENR, 2016a) is Kenya's blueprint to advance toward a low-carbon, resource efficient, equitable and inclusive socio-economic transformation. The GESIP aims to integrate resource use efficiency into and minimize negative environmental impacts related to the country's economic development.
National Climate Change Framework Policy (2016)	The *National Climate Change Framework Policy* (MENR, 2016c) aims to ensure the integration of climate change considerations into planning, budgeting, implementation and decision-making at the national and county levels and across all sectors.
National Climate Finance Policy (2016)	The *National Climate Finance Policy* (The National Treasury, 2016) establishes the legal, institutional and reporting frameworks to access and manage climate finance. The goal of the policy is to further Kenya's national development goals through enhanced mobilisation of climate finance that contributes to low carbon climate resilient development goals.

Instrument	*Description*
Big Four Agenda (2018)	The Big 4 Agenda (Government of Kenya, 2018c) establishes priorities areas for 2018 to 2022 of ensuring food security, affordable housing, increased manufacturing and affordable healthcare. Sector plans and budgets are to be aligned to the Big Four priorities.
County Level	
Makueni Climate Change Fund Regulations (2015)	The regulations establish the Makueni County Climate Change Fund. The aim is to provide funding for climate change actions identified in the Makueni CIDP. The regulations mandate the County Government to set aside 1 % of its annual development budget for climate change.
Wajir County Climate Change Fund Act (No. 3 of 2016)	The Wajir Climate Change Fund Act (No. 3 of 2016) established a Climate Change Fund to facilitate and coordinate finance for community-initiated adaptation and mitigation projects and for connected purposes. The Act mandates the County Government to set aside 2 % of its annual development budget for climate change.

5.3 Equity in Kenya's NDC

Equity has been a key issue in Kenya's engagement in international climate negotiations. In tandem with other developing countries, Kenya has been at the forefront in calling for the reflection of equity in the UNFCCC negotiations, as part of the African Group of Negotiators (AGN) and G77 negotiation blocs. It is therefore not a surprise that the country's NDC strongly reflects the principle of equity. This section presents an overview of the equity issues in Kenya's NDC. Even although the issues are international-facing, and are the focus of this section, they have implications for the domestic context and subsequent implementation of the NDC.

Four key aspects of equity from the international process that appear to be applicable to the NDC are: 1) Historical responsibility; 2) Vulnerability; 3) Respective capabilities; 4) and equitable access to sustainable development. Analysis of Kenya's NDC and relevant policies is therefore undertaken within this context. Equity is a key component of Kenya's 'default template' on climate policy[13]. These issues do not however depart significantly from Kenya's previous climate policies, and hence can be considered part of the 'template elements' of the country's climate policies.

Historical responsibility

Kenya's NDC was developed within the context of historical responsibility, but this only served the minor role of framing and putting the NDC into the broader international context. The country's historical GHG emissions are relatively low: "... at 0.1 % of the total global emissions, while the per-capita emissions are less than 1.26 Mt CO_2-eq compared to the global average of 7.58 Mt CO_2-eq" (Kenya, 2015b, p. 6). Furthermore, the NDC represents the first time that the country has stated an intended contribution to global mitigation efforts. It thus views its NDC as fair in view of its modest contribution to historical GHG emissions.

13 Also, confirmed from interviews with civil society organisation (CSO) and government officials that the key elements of equity (historical responsibility, capability, support for means of implementation, and right to development/equitable access to sustainable development) were introduced by the government in the NDC. A look at previous climate policy documents also confirms this.

Vulnerability

Over 80 % of Kenya's land area is arid or semi-arid, and is thus highly vulnerable to the impacts of climate change, especially droughts and floods. The NDC notes that climate change impacts cause an estimated loss of 3 % of GDP (Kenya, 2015b, p. 1). Furthermore, the economic sectors that the country is most highly dependent on, including rain-fed agriculture and tourism, are also the most vulnerable to impacts. Vulnerability, as presented in the NDC, comprises: 1) geographical vulnerability; and 2) economic vulnerability. Agriculture is of economic importance since it accounts for 80 % of jobs and livelihoods, yet 75 % of GHG emissions come from land use, land use changes and forestry (LULUCF).

Capability and Support for Means of Implementation

Kenya is still grappling with major development challenges is presented as a major limitation to the country's ability to increase their contribution to climate action. Full implementation of the NDC is therefore conditional on the availability of support for means of implementation, and the ability of the government to meet its other development objectives.[14] Specifically, the -30 % mitigation target is subject to "international support in the form of finance, investment, technology development and transfer, and capacity building" (Kenya, 2015b). The cost of support is estimated at USD 40 billion, but a detailed analysis will be conducted later by the government (Kenya, 2015b, p. 7). Moreover, the NDC also identifies priority sectors for both mitigation and adaptation actions, which would further deliver co-benefits. Priority mitigation actions include renewable energy, energy and resource efficiency, forestry, bioenergy, transportation, climate smart agriculture, and sustainable waste management systems (Kenya, 2015b, p. 3).

A comparison of the NDC and the Second National Communication (SNC) submitted to the UNFCCC brings into sharper focus the aspect of equity. The SNC, submitted in 2015, has a 60 % emission reductions target by 2030 (Kenya, 2015a), whereas the NDC has a 30 % target. This is a significant difference, even although both analyses use the same baseline. The government has justified this reduction by arguing that the SNC is aspirational while the NDC presents a 'doable' contribution:[15]

> "[The SNC] represents what can be achieved if Kenya takes up all expected technology advances, introduces appropriate and enabling policies and regulations, and moves forward on all mitigation actions. It is aspirational and based on a best-case scenario. Kenya's Nationally Determined Contribution (NDC), submitted to the UNFCCC in 2015 as the country's' Intended NDC, adopts a doable and conservative mitigation contribution that is half the potential identified in the first NCCAP (2013-2017)" (Government of Kenya, 2018a, p. 42).

Equitable Access to Sustainable Development

Perhaps the most pronounced dimension of equity in Kenya's NDC is that of *equitable access to sustainable development*. although not titled so, the NDC was developed within the context of national development goals and aspirations. Specifically, the NDC states that it "will also contribute towards the delivery of the Constitution of Kenya and the attainment of Vision 2030, the country's development blueprint" (Kenya, 2015b, p. 1). *Vision 2030* is implemented through 5-year Medium Term Plans (MTPs).

The National Climate Change Action Plan (NCCAP), the implementing policy of the NDC, will be updated every five years to inform the MTP. This synchronization would thus allow the development and implementation of subsequent NDCs to be aligned with the broader

14 Interview with government official working on Big Four agenda, on 16th October 2018

15 Surprisingly, a representative of the major private sector associations in Kenya, in an interview, noted that the key challenge to implementing the target is policy incoherence. That is, the target was attainable, and argued instead that the government needs to instead align fiscal, trade and other related policies, with climate policies, so as to foster private sector engagement such as trade in climate technologies.

economic development agenda. This is not a surprising development since Kenya has always framed climate action within the broader context of sustainable development.[16]

One striking aspect however is the exclusion of emissions from the extractives sector in the NDC. Kenya recently discovered vast fossil fuel reserves, such as oil in Turkana (first barrels have been transported to the Kenyan Coast, Mombasa, coal in Kitui (400 million tonnes, and believed to be the largest in Africa, and a subsequent plan to develop an 960MW coal plant there) and offshore gas and oil in Lamu, which it begun exploiting early this year (2018). Bos and Gupta (2018, p. 438) argue that Kenya has a "simple" choice, between investing in extraction of its newly discovered fossil fuels, or ignoring these fossil fuel resources and investing directly in renewable and low-carbon technologies. The latter choice presents a clear opportunity cost in terms of revenue from fossil fuels, and presents other economic risks of being a potential early adopter and investing in stranded assets (Bos & Gupta, 2018, p. 439). Perhaps in lieu of these risks, it appears Kenya plans to fully exploit its fossil fuel reserves.

The fossil fuels sector will thus present a major new source of future emissions, which the NDC expressly excludes from the accounting of future mitigation accounting: "Future contribution from the extractive sector has not been included in the accounting" (Kenya, 2015b, p. 2). Tensions between exploiting the fossil fuel reserves, especially for export, and embracing progressive targets in the NDC, are clearly apparent. Even although the government claims a 'clean' energy-mix that includes geothermal, solar and wind energy, it notes that broader efforts towards transforming Kenya into a newly industrialized middle income country by 2030 will lead to increased emissions " (Kenya, 2015b, p. 1). Furthermore, the proposed coal power plant in the pristine coast of Kenya has underscored the tensions between climate policy and exploitation of fossil fuels in the country, which equity must "resolve."[17] Some analysts however argue that Kenya's renewable sector will continue to expand, even in the absence of GHG abatement (Longa & van der Zwaan, 2017).

5.4 Equity in Discussions to Update NDC

The Paris decision requests those Parties whose NDCs contain a time frame up to 2030 to communicate or update their NDCs by 2020 (1/CP.21, para 24, UNFCCC, 2015). . While Kenya's NDC covers the period up to the year 2030, it remains unclear how the country will sequence communicating its NDC-related processes to the UNFCCC. Kenya's current position is that it will not submit an updated NDC in 2020, and will instead adopt the draft National Climate Change Action Plan 2018-2022 (NCCAP 2), which will serve as the *de facto* updated NDC.

By the end of 2018, discussions were underway on an advanced draft of the NCCAP 2, focusing on key ministries, organised around sector expert groups. The discussions thus far have been limited to government agencies, and the achieving the targets appears to be a primary task for the national governments, while other actors such as the County governments and private sector will play a supporting role. It is not yet clear at this point whether the discussions on implementing the NDC targets will be expanded to other non-state actors. Framing of equity in implementation of Kenya's NDC thus should be understood in this context.

16 Interview with government official in the Presidential Delivery Unit, who confirmed that the current climate policy is being aligned with the Big Four Agenda (the development manifesto of the current administration). The second NCCAP also makes the explicit reference to the Big Four Agenda.

17 An interview with a government official working on renewable energy revealed that their primary concern is the least cost approach to scaling energy access, but also developing and supporting renewable energy. It was apparent that this policy paradox is far from being resolved. Interview conducted on 16 October 2018. Discussions on how to allocate mitigation 'burdens' also revealed that the Ministry of Energy places greater emphasis on least cost energy option than lower emissions, in a relative sense.

This section explores the emerging equity issues during the preparation of the NCCAP 2, and how these issues were reflected in the final draft of the document.

5.4.1 Discussions preceding the drafting of the NCCAP 2

Ministries that have held consultations thus far are: Agriculture; Forestry; and Energy. Key issues emerging from the deliberations are:

- On transparency: Kenya's NDC is general, meaning it would be difficult to 'be pinned down for non-implementation'. The downside however is a lack of easily identifiable projects for international funding (Kenya, 2015b, p. 2). This 'dilemma' reveals the tensions between strengthening the technical basis of the NDC targets, while maintaining flexibility in implementation. Under the Paris Agreement, issues of Monitoring, Reporting and Verification (MRV) were shifted to transparency. There is an explicit provision for tracking progress in implementing and achieving NDCs (Art. 13.7(b), UNFCCC, 2015). Development of a robust MRV system for implementation was considered within this context, and it was suggested that the Ministry of Environment and Natural Resources should take the lead in working with development partners in the development of the NDC MRV system. (Kenya, 2015b, p. 2). The MRV system would therefore comprise information to enhance transparency in implementation and support for implementation.[18]
- Priority actions: It was reiterated that adaptation would be of greater priority than mitigation. Discussions on the development of a national Vulnerability Assessment Report are currently underway to bolster the focus on adaptation. This is in line with the government's development priorities; hence climate action that leads to simultaneous attainment of the development priorities was considered equitable. Kenya's NDC also noted that the focusing on priority actions was part of the equity and fairness of the contribution.
- Conditionality: Conditionality was highlighted as a political decision and that it will continue to be an integral component of future NDCs (Kenya, 2015b, p. 2). Kenya's NDC notes that the document is the first commitment the country has made towards addressing climate change at the UNFCCC, and it considers the unconditional component as a fair/equitable contribution. Support of means of implementation was noted as necessary for equity and enhanced ambition.[19]
- Baseline for mitigation target: The current baseline is a conservative estimate an increase in target would make the NDC harder, not easier to implement (Kenya, 2015b, p. 3). It was also suggested that emission reduction accounting used in the forestry and land use context includes both removals (sinks) and the actual reduction or limitation of emissions from the sectors. The emissions include underground, above ground and in the atmosphere in living biomass (Kenya, 2015b, p. 3). A further suggestion was made to increase the timeline for emissions reduction from LULUCF to beyond the 2030 end year in the current NDC. Discussions focused on the forestry sector making the greatest cuts in emissions since it was the greatest source of the emissions and had the highest emissions abatement potential. Officials from the forestry sector noted ongoing efforts to strengthen the technical monitoring framework for emissions from the sector. The focus on updating the baseline for mitigation target is premised on identifying sectors with the highest GHG abatement potential, since they present the most equitable approach (Kenya, 2015b, p. 4).

18 Kenya currently has a draft policy on climate finance (The National Treasury, 2016)

19 "Kenya is determined to continue playing a leadership role in addressing climate change by communicating a fair and ambitious contribution. This intended contribution targets a high proportion of its mitigation potential, dependent on the level of support available" (Kenya, 2015b, p. 6).

- Context of national development: Climate change actions to be undertaken within context of national development goals and priorities. Kenya's NDC and other climate polices make an explicit linkage to mainstreaming climate action in the development process. Adaptation is prioritized over mitigation. Hence climate action that contributes to attainment of the domestic policy agenda, whether the Big Four Agenda (Government of Kenya, 2018c), the Medium-Term Plan (Government of Kenya, 2013b) or Vision 2030 (Government of Kenya, 2018b), is considered equitable. The Ministry of Energy, during the deliberations, noted their potential contribution to the mitigation target, but emphasized their primary approach of least cost development option – that is, focusing on the cheapest source of energy to alleviate energy poverty.
- Fossil fuel reserves: The issue of accounting for emissions from the recently discovered oil and gas reserves (up to 600 million barrels of oil) remains unresolved (Kenya, 2015b, p. 4). The 'equity dilemma' is therefore between the exploitation of the fossil fuel reserves, in line with national development plans, and an ambitious climate policy – Kenya considers itself a climate leader.[20] Future emissions from the development of the fossil fuels have been treated as a policy uncertainty, as an exception in the NDC and as uncertainty in the NCCAP 2.
- Burden sharing: Discussions on whether to update the NDC have focused on line Ministries as the key actors responsible for meeting the NDC targets, especially on mitigation. Much attention has been on Ministries with sectors that have high mitigation abatement potential. Yet County governments, which are a crucial arm of the executive in the new devolved governance structure in Kenya, have been largely absent. They have been identified as a key implementing entity of the NCCAP 2, but they have not been present in the meetings on updating an NDC.[21]

5.4.2 Equity as reflected in the NCCAP 2

With technical support from the Strengthening Adaptation and Resilience to Climate Change in Kenya Plus (StARCK+) Programme, the Government of Kenya recently updated its emission baseline projections, developed by the Ministry of Environment and Natural Resources (MENR) with support of the StARCK+ programme (MENR, 2017). The analysis also included impacts of the revised projections on Kenya's NDC mitigation target. These technical analyses underpin the NCCAP 2, which is Kenya's *de facto* updated NDC. This section highlights the key elements of the technical analysis and how they are reflected in the NCCAP 2.

Motivation for Update

The primary objective of the updated analysis of emission baseline projections was to re-assess the (potential) mitigation contributions of each sector, to analyse factors that may impact achievement of the NDC target; and explore options to meet the NDC target (MENR, 2017, p. 1). Since the NDC was based on analysis for the first National Climate Change Action Plan (NCCAP 1) 2013-2017, there was need to consider the impact of new data on the projections. Further, the revised updates would form the basis of the second NCCAP 2 (2018-2022), which would be used in lieu of an updated NDC. To be clear, the exercise to revise projections is "not to change or update the BAU scenario or the overall target of 30 % emission reductions by 2030, but simply to inform emission reductions strategies in each sector" (MENR, 2017, p. 1).

20 "Kenya is determined to continue playing a leadership role in addressing climate change by communicating a fair and ambitious contribution" (Kenya, 2015b, p. 6).

21 A county government official working on climate change noted that there is significant potential for County governments to contribute to implementing the NCCAP 2, yet there is still much disconnect between the national and County governments. A Council of Governors official also confirmed this view in an interview

Modelling details

Analysis for the revised projections are based on IPCC guidelines for years, as it "fulfils the objective of the COP for the use of comparative methodologies" (MENR, 2017, p. 2). Previous Business-as-Usual (BAU) baseline and projections for the NDC were based only on existing policies, and did not account for future policies, such as development of fossil fuels in the energy sector. The original BAU did not also include climate finance and other regulations.

Key findings in relation to baseline

The key finding of the revised emission baseline projections is that even although the projections roughly match earlier ones (a reduction of 0.2 % of BAU 2030 emission target), there are significant sectoral changes that would significantly impact implementation of the NDC (MENR, 2017, p. 2). Three drivers have been identified as having the greatest impact on the NDC mitigation target: 1) GDP growth rate by sector; 2) New projections on electricity generation; and 3) New forecasts in urbanizations (MENR, 2017, p. 2).

Surprisingly, the three trends lead to ***lower*** emission projections for 2030 under BAU, a reduction of almost 14 % from the original BAU in 2030. That is, a reduction from 143 Mt CO_2-eq to 124 Mt CO_2-eq. While increased GDP growth rate by sector and increased urbanization were projected to increase emissions, lower power generation - due to expected lower demand and fuel mix with less coal assumed – would lower the emissions, overall. This would mean that Kenya would need to reduce its emissions by 24 Mt CO_2-eq instead of 143 Mt CO_2-eq by 2030, thus making the BAU projection of the NDC too conservative (MENR, 2017, p. 2).

Challenges to articulating a more ambitious NDC target

Instead of updating its NDC to reflect the new findings, e.g. by increasing the target, Kenya offers five justifications of why it should not update its NDC, all with premised on equity, whether implicitly or explicitly: 1) problem of policy attribution; 2) policy uncertainty; 3) policy sensitivity; 4) policy scope; and 5) policy feasibility. Each justification is discussed in turn below. The issues have been identified as key inhibitions to a more ambitious target.

- Policy attribution: Captures the difficulty of attributing the impact of new policies, such as on climate, on NDC targets. Trends that can, for instance, reflect the impact of other policies such as energy and not necessarily climate policy (MENR, 2017, p. 3). Hence a more modest target would allow for flexibility to account for impacts of other policies on the NDC targets, especially policies related to priority development sectors. This is related to placing climate action within the broader context of development. Such flexibility and modest targets would foster equity.
- Policy uncertainty: Policies change over time; hence this greatly impacts emissions. Development of emission-intensive industries such as oil and gas, cement, steel, aluminium and coal mining present a major challenge to emission projections. The impact of such related policies has not been included in the updated projections, hence creating a high level of uncertainty (MENR, 2017, p. 3).
- Policy sensitivity: Small changes in trends can have significant impacts on emission projections. Policies therefore become sensitive to such changes. Projections of Kenya's emissions are especially sensitive to changes in GDP growth. The updated projections for instance revealed a change a difference of 3.5 Mt CO_2-eq for a change of 0.5 % in GDP growth (MENR, 2017, p. 4).
- Policy scope: Current policies do not account for positive future changes, such as improvements in emission intensity of production and service industries, and adoption of cleaner and more efficient technologies (MENR, 2017, p. 4).
- Policy feasibility: The 30 % emission reduction target in Kenya's NDC reflects the circumstances at that time, and what was feasible and achievable by the Government of Kenya (MENR, 2017, p. 4). The updated projections therefore

present a basis for assessing the implementation of the NDC but not to update it. Some stakeholder, for example in the private sector, believe that aligning the various policies such as in trade and finance can make the target more attainable by for instance supporting trade in climate technologies.[22] Several counties are also working on climate policies, and implementing them, and they believe that they can contribute significantly to the realization of the current target.[23] For counties, the major challenge inhibiting higher ambition is poor coordination with national government, and lack of technical capacity.[24]

Key challenges

The key challenges of the updating exercise include data gaps and assumptions (MENR, 2017, p. 6):

- Assumption that much of the renewable energy capacity will be met by coal
- Assumption that fuel demand for cement production will be met by coal
- Assumption that oil refinery has not been in operation since 2014 and is not expected to restart
- Uncertainty from use of outdated data
- Oil and gas, and coal power generation, not included in the analysis

Impact on NDC target (Equity)

Based on the foregoing discussions, Kenya is taking the following steps on its NDC target:

- Flexibility to allow responsible ministries and agencies to select from a suite of policy options for their individual sectors
- Maintain ability to adjust mitigation policy options
- Adjust projections over time, based on uncertainties and potential actions
- Alignment of sectoral mitigation actions with political, economic and social objectives and priorities

Additionally, focus should be aligning the sectoral targets with the 'floor' of Kenya's NDC, so that the country can achieve its NDC (MENR, 2017, p. 7).. These trends underscore the tension between economic growth and climate change mitigation, in tandem with equitable access to sustainable development.

5.5 Case study conclusions

Equity is central to Kenya's contribution to the achievement of the objectives of the Paris Agreement, through its Nationally Determined Contribution (NDC) of 2015. While equity issues outlined in the NDC focus on the usual topics of support for means of implementation, and national circumstances, focus has now shifted to implementation.

There are three emergent elements of equity in Kenya's domestic preparations for 'updating' its NDC: capability; support for means of implementation; and right to development. First, the NDC's targets are framed as both fair and ambitious given the country's socio-economic conditions and its minimal historical contribution to international

22 Interview with private sector network official, 17th October 2018

23 Interview with council of governors official, 17th October 2018

24 Interview with two County government officials working on climate change, 10th October 2018 & 17th October 2018

GHG emissions. Related, the NDC also has conditional and unconditional components, where the former is an indication of the country's contribution despite its challenges and limited responsibility, while the latter is framed as potential source of ambition subject to international support for means of implementation. Efforts to align the climate targets with national development priorities, especially the exploitation of fossil fuel reserves, reveal an 'equity dilemma' where the country tries to reconcile both policies. Focus has therefore shifted to targeting sectors with the highest abatement potential as the sources of the greatest emission reductions, and the prioritization of adaptation over mitigation.

Ambition, in Kenya's case, lies between capability and support for means of implementation. On the one hand, the country has identified its socio-economic situation as a major challenge towards enhancing emissions, at the domestic level. On the other hand, it identifies support for Means of Implementation as a potential source of increasing ambition. Hence the conditional and unconditional components of the NDC. Moreover, challenges such as policy attribution, uncertainty, sensitivity, scope and feasibility have been identified as inhibitors of ambition. Much attention now is focused on improving the technical analysis underpinning the mitigation target. The government is getting financial and technical support from UKAid to improve especially its baseline and scenarios modelling.

Several lessons can be drawn from this case study, that may relate to other developing countries. First, it is important to distinguish between equity at the international and domestic levels. They two levels of equity may be similar or different in their framing, and different countries can place varying emphasis on the different levels. For example, Kenya places great emphasis on the domestic process, including policy timelines. Second, the concepts of right to development/equitable access to sustainable development take a stronger impetus at the domestic level – as one would anticipate. Of interest is the issue of fossil fuel reserves, especially when viewed in the broader global efforts to limit warming to 1.5 degrees focusing on the supply side of fossil fuels such as subsidy reforms. Numerous African countries are facing a similar challenge, especially considering recent discoveries of significant fossil fuel reserves.

Third, technical support for modelling climate targets especially within the broader development context would be salient (e.g. see case of Chad, and many developing countries putting their NDCs in the broader context of sustainable development) (Makomere & Mbeva, 2018). Fourth, it would be interesting to see whether other countries (especially less developed) plan to communicate an updated NDC or otherwise. If the latter, then what would be the implications for the relevant Paris Agreement processes? Fifth, how is domestic 'burden-sharing' framed in terms of equity? A focus on government action as (implicitly) bearing the primary responsibility of meeting the targets, and the focus on high abatement potential sectors. In Kenya's case, it is interesting to note the NDC and NCCAP 2 mentioning the multi-stakeholder approach in developing and implementing the policies, yet the ongoing discussions focus almost exclusively on action by the national government.

Finally, analysing the similarities and differences between science based and political based targets would be interesting. For instance, does a country use the IPCCC targets or other 'external' metrics such as carbon budget points as the starting point for developing (mitigation) targets, or do use domestic factors such as abatement potential (as in Kenya's case) as the basis? In a broader sense, is there any such thing as science-based and politics-based targets? Such issues would also inform development of protocols for discussions on equity in the domestic preparation process.

6. Case Study of South Africa

This case study explores considerations of equity in domestic processes for the preparation of the NDC communicated by South Africa to the UNFCCC (South Africa, 2015b). South Africa communicated its INDC to the UNFCCC on 25 September 2015, which became its first NDC upon Parliament's ratification of the Paris Agreement in 2016. As of late 2018, South Africa had not communicated a new or revised NDC. This case study therefore focuses on equity in relation to the first South African NDC. But before turning to equity, the following subsections briefly discuss the context and policy background within which South Africa's NDC was formulated.

6.1 Background of South African climate policy

South Africa is a middle-income country with an economy that is small by global standards but is one of the largest in Africa. Owing in part to the legacy of *apartheid*, South Africa continues to grapple with persistent challenges of economic inequality, poverty and unemployment (National Planning Commission (NPC), 2011).

South Africa's energy sector remains highly reliant on coal, which accounts for 67 % of total primary energy supply (Department of Energy (DOE), 2015). Historically cheap coal supply fuelled significant economic growth between 1994 and 2008, but also led to South Africa having one of the most carbon-intensive economies in the world (Burton, Caetano, & McCall, 2018). Table 6-1. Selected economic and GHG emission indicators for South Africa shows that South Africa's share of annual greenhouse gas (GHG) emissions is disproportionate to its share of global GDP.

Table 6-1. Selected economic and GHG emission indicators for South Africa (for the year 2012)

Indicator	*Value*	*Notes*	*Source*
Aggregate GHG emissions (excl. FOLU) (Mt CO_2-eq)	539.1	21.7 % above 2000 levels, from National Greenhouse Gas Emissions Inventory (2000 – 2012)	Department of Environmental Affairs (DEA, 2017a)
Annual GHG emissions per capita (excl. FOLU) (t CO_2-eq per capita)	10.29	Derived from the National Greenhouse Gas Emissions Inventory and StatsSA Census data	(StatsSA, 2012)
Share of World GDP, PPP (constant, 2011 international $)	0.66 %	Derived from World Bank data	(World Bank, 2018)
Share of annual global GHG emissions (Kyoto greenhouse gases, AR4, excl. FOLU)	1.09 %	Derived from PRIMAP	(Gütschow, Jeffery, Gieseke, & Gebel, 2018)

South Africa's national climate policy is articulated in the *National Climate Change Response White Paper of 2011* (NCCRWP), published by the Department of Environmental Affairs (DEA). Policy-makers ostensibly have to strike a balance between supporting a transition to a low-carbon economy that constitutes a fair contribution to the global mitigation burden, supporting adaptation measures to make society more resilient to the impacts of global warming, and finding ways to drastically reduce poverty, inequality and unemployment.

The *National Development Plan 2030* (NDP) makes explicit the goals of eliminating poverty and reducing inequality by 2030. The objective of transitioning to an "environmentally sustainable, climate-change resilient, low-carbon economy and just society" (NPC, 2011, p.

199) is contextualised as just one component of the broader objectives of development. South Africa's NDC was thus informed by both climate and development policy objectives.

Key domestic actors

DEA has the government mandate *inter alia* to develop and oversee climate change response policy and implementation. Other government departments, such as the Department of Energy (DoE), also have important roles to play, given the cross-cutting nature of climate change.

Outside of government, other key stakeholders include Eskom, the national electricity utility that generates 90 % of South Africa's electricity (90 % of which comes from coal; see Eskom (2017)), and Sasol, the South African-founded petrochemicals company that supplies 21 % of domestic liquid fuels production from its trademark coal-to-liquids technology (SAPIA, 2017). Sasol's GHG emissions in South Africa amounted to 66.82 Mt CO_2-eq (roughly 10 % of the national aggregate) during the 2015/16 financial year (CDP, 2017).

Beyond government, Eskom and Sasol, it is among organised business[25] and civil society that much of the discourse on domestic climate policy is held. This is reflected in the number of submissions from business associations and civil society organisations (including NGOs) to public hearings on climate change, such as during the lead-up to Paris in 2015, as well as during the development of the NCCRWP in 2011, and more recently following the announcement of the Draft Carbon Tax Bill (South Africa, 2017) and Climate Change Bill (South Africa, 2018a).

Finally, labour unions are a prominent and powerful grouping in South Africa, who have been clear in calling for a "just transition" to a low-carbon and climate resilient economy, e.g. in the 2011 Policy Framework on Climate Change of the Congress of South African Trade Unions (COSATU, 2011), or in a submission by the National Union of Metalworkers of South Africa during public consultations on the NCCRWP (NUMSA, 2011).

Labour unions have more recently scaled back their participation in public climate discourse. According to an interviewee from a labour research unit, this is partly a reflection of growing "despondency" with the Paris Agreement and the UN process more broadly, which unions criticise for having produced "few tangible outcomes" to date. Nevertheless, recent legal and industrial actions by the National Union of Mineworkers (NUM, 2018) and NUMSA (NUMSA, 2018) in opposition to the renewable energy independent power producer procurement programme (REIPPPP)[26] – which they believe poses too much of a threat to jobs in the coal sector[27] – have shown that unions still have considerable influence over the efficacy of climate action.

The following section examines how equity discourse between these actors played out in the preparation process of South Africa's NDC.

25 In this case study, the term 'business' refers to associations representing South Africa's corporate business community as well as heavy industry sectors, such as Business Unity South Africa (BUSA), the Chemicals and Allied Industries Association (CAIA) and the Industry Task Team on Climate Change (ITTCC).

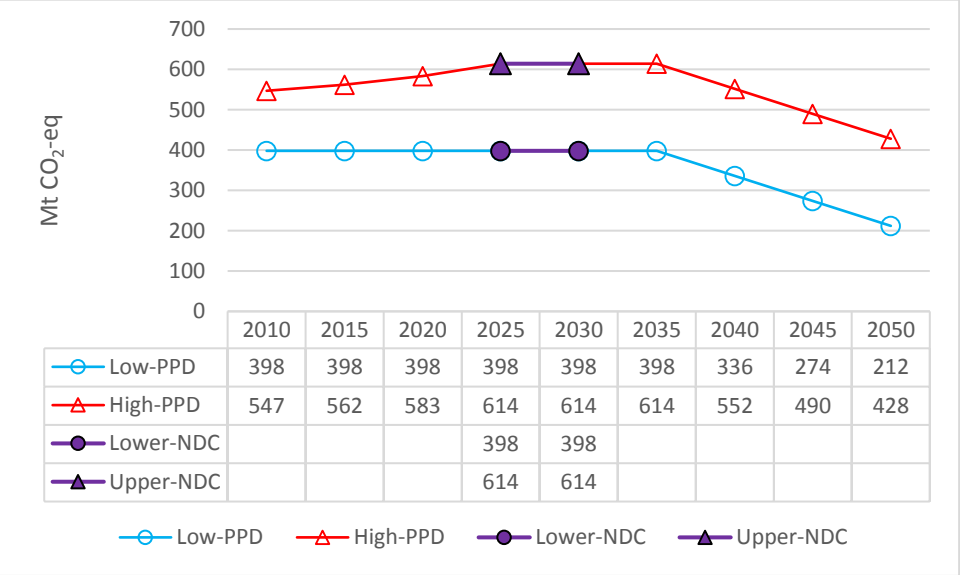
26 The REIPPPP is an independent renewable electricity bid programme that was first launched in 2011 and has since led to considerable growth of renewable generation capacity. After a two-year 'stall', the programme was revived in early 2018, despite (ongoing) opposition from the unions.

27 The unions are very clear on their position: they are supportive of renewable energy but opposed to *privately-owned* renewable energy, consistent with their view that "capitalism is the primary cause of climate change" (COSATU, 2015, p. 56).

6.2 Mitigation NDC

South Africa's NDC includes separate components on (sequentially) adaptation, mitigation and support, and explicitly states that "equity applies to mitigation, adaptation and support for both" (South Africa, 2015b, p. 8). This section examines the preparation process, and equity considerations, of the mitigation component of the NDC, followed by sections on the adaptation (Section 6.3) and support (Section 6.4) components.

South Africa's mitigation NDC states that, by 2025 and 2030, GHG emissions will be in a range between 398 and 614 Mt CO_2-eq (South Africa, 2015b). This range is consistent with official long-term (2050) mitigation strategy to keep emissions within a 'peak, plateau and decline' (PPD) trajectory (DEA, 2011, p. 27), as illustrated in Figure 6-1. Simplified PPD emissions trajectory, highlighting the NDC target period of 2025-30. The NDC states that the mitigation contribution is a progression from the previous "deviation below business-as-usual" form of mitigation target that South Africa pledged at Copenhagen in 2009.[28] Development of the mitigation INDC was supported by technical work prepared by the Energy Research Centre (ERC, 2015).



	2010	2015	2020	2025	2030	2035	2040	2045	2050
Low-PPD	398	398	398	398	398	398	336	274	212
High-PPD	547	562	583	614	614	614	552	490	428
Lower-NDC				398	398				
Upper-NDC				614	614				

Figure 6-1. Simplified PPD emissions trajectory, highlighting the NDC target period of 2025-30; Source: author's compilation from INDC technical background information (ERC, 2015)

The mitigation NDC text lists a number of "policy instruments under development" for implementing the NDC, including a carbon tax, desired emission reduction outcomes for sectors, and company-level carbon budgets. Since ratifying the Paris Agreement, South Africa has released draft carbon tax (South Africa, 2017) and climate change (South Africa, 2018a) bills, although neither of these have as yet been signed into law. The NDC is further stated to reflect South Africa's "full mitigation potential as assessed in 2014" (South Africa, 2015b, p. 6). This statement refers to *South Africa's Greenhouse Gas Mitigation Potential Analysis*, which concluded that, if all mitigation interventions identified in the analysis were implemented – and within the context of underlying assumptions on economic growth and the extent to which this would otherwise drive emissions increases – then the emission trajectory through 2030 would fall well within the Upper-NDC limit (614 Mt CO_2-eq), and would remain within the targeted PPD trajectory (i.e. below High-PPD) until 2040 (DEA, 2014).

28 South Africa voluntarily announced a pledge to reduce greenhouse gas emissions below business-as-usual (BAU) levels by 34 % by 2020 and 42 % by 2025 at COP15 at the Copenhagen Climate Conference in December 2009.

It should be noted that considerations of the NDCs developed by other Parties, and other BASIC[29] countries in particular, provided considerable motivation to South African government officials, representing multiple economic sectors, to support the INDC process in 2015, and to communicate the PPD target for 2025 and 2030, which was considered by government to be ambitious in the context of national circumstances.[30]

Carbon budget approach to fair share analysis

South Africa substantiates the fairness and ambition of the 2025 and 2030 mitigation target by comparing the cumulative emissions implied by the upper-PPD trajectory to 2030 with a self-determined fair share of a global carbon budget consistent with limiting global warming to 2 °C. This is explained in the text as follows:

> "South African experts, applying Convention principles of responsibility, capability and access to equitable sustainable development, determined a carbon budget that is larger than the PPD trajectory range outlined in this INDC. South Africa has used this evidence base to evaluate whether its INDC is a relative fair effort. In the context of this objective assessment of South Africa is [*sic*] of the view that its contribution is both fair and ambitious" (South Africa, 2015b, p. 8).

The text further states that the PPD trajectory "fully aligns with the IPCC AR5[31] future global carbon budget". At the time of submission, South Africa's was the only INDC to use a carbon budget approach to show how its contribution represents a fair share of the mitigation burden (Rich, Northrop, & Mogelgaard, 2015). "South African experts" refers to analysis of in-country experts, which determined a carbon budget for South Africa of between 28 and 32 Gt CO_2-eq for the period 2000 – 2049 (Winkler, Letete, & Marquard, 2013). This translates into a carbon budget of between 20 and 22 Gt CO_2-eq for 2016 – 2050 (ERC, 2015). The analysis drew on previous work that calculated a remaining carbon budget for the world of 1,440 Gt CO_2-eq between 2000 and 2050, for a 50 % chance of keeping warming below 2 °C (Meinshausen et al., 2009). The South African experts calculated South Africa's share of the 1,440 CO_2-eq using a burden sharing methodology that was based on the Greenhouse Development Rights (GDR) framework (Baer et al., 2008), "with some adjustments" (Winkler et al., 2013, p. 413), in an effort to operationalise the equity principles of responsibility, capability and development, as set out in Article 3 of the Convention (United Nations, 1992).

The result of this analysis was a self-determined fair share of 20 – 22 Gt CO_2-eq between 2016 and 2050. Whereas, if South Africa followed the long-term PPD trajectory, its cumulative emissions would range between 12.4 and 19.7 Gt CO_2-eq for the same period (2016 – 2050) – i.e. even under the upper-PPD pathway (which, to 2030, is the same as the upper-NDC emission trajectory), cumulative emissions would be *lower* than what could be considered fair. On this basis, South Africa considers its mitigation NDC both fair and ambitious.

The NDC however acknowledges that other effort-sharing analyses allocate smaller fair shares to South Africa. For example, analysis by BASIC country experts determined a carbon budget in the range of 7 to 11 Gt CO_2-eq for South Africa over the 2016 – 2050 period (CASS / DRC Joint Project Team, 2011; Jayaraman, Kanitkar, & Dsouza, 2011). The NDC also notes a "meta-analysis of different approaches", using the PRIMAP tool (Gütschow et al., 2018), which result in carbon budgets that are lower than the PPD trajectory range (South Africa, 2015b, p. 10).

29 Brazil, South Africa, India and China

30 The notion of South Africa adopting (arguably) ambitious climate policy, given its developing context, is discussed further in Trollip and Boulle (2017, p. 28)

31 The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC, 2014)

The role of equity in framing South Africa's mitigation NDC

Irrespective of how effort-sharing is analysed, South Africa's NDC demonstrates concern for the fairness of its contribution to the global mitigation burden. Understanding that the mitigation NDC is an expression of South Africa's PPD trajectory for 2025 to 2030, the question of how considerations of international fairness influenced the mitigation NDC can be best answered by examining how the PPD trajectory was originally determined.

The South African Cabinet first agreed to the "emissions decline trajectory" at a cabinet *lekgotla* meeting (a mid-year review and strategy planning meeting for senior government officials) in July 2008, where Cabinet stated its commitment to "negotiate an equitable burden-sharing paradigm that balances the needs of developing nations against those of developed nations", and further noted that "among developing nations, South Africa, together with Brazil, India and China, were among the largest emitters of greenhouse gases" (South Africa, 2008).

The PPD trajectory was informed by the Cabinet-mandated Long-Term Mitigation Scenario (LTMS) process, the key outcomes of which, as reported in a scenario document approved by stakeholders (Scenario Building Team, 2007), were a proposed set of strategies South Africa would need to follow in order to 'bend' its emission trajectory towards a "Required by Science" pathway (defined from the outset as the mitigation effort required by South Africa to stabilise the climate by 2050, in the absence of any restraints on resources or technology).

South Africa's 'below-BAU' emission reduction pledge in 2009 – a move which was praised at the time (Rosenthal, 2009) – was based on the emission trajectory work, and was motivated at least in part by a desire to contribute a fair share to the global effort. One local expert observed that South Africa had "portrayed an image of a world leader in addressing the environmental challenges of the 21st century" (Patel, 2014, p. 170).

Perceptions of ambition at the time owed more to the fact that South Africa announced its voluntary pledge at a stage when developing countries were not required to set mitigation targets, and South Africa's voluntary targets appeared arguably more ambitious than those announced by China and India (Nhamo, 2011).

Post-Paris, nearly all countries have now communicated mitigation NDCs (Pauw et al., 2016), and the level of ambition expressed in South Africa's mitigation contribution is more debatable. From the framing of the mitigation NDC, through the bottom-up mitigation potential analysis (DEA, 2014) and carbon budgeting analysis which emphasises development needs, it can be hypothesized that domestic equity considerations have in fact *limited* South Africa from raising its level of ambition further.

Views on ambition

This view was strongly reflected in submissions made by civil society to Parliament's Environmental Affairs Portfolio Committee during public hearings on South Africa's draft INDC (South Africa, 2015a) in September 2015 (prior to communication of the final INDC on 25 September). These submissions were especially critical of the carbon budget implied by the PPD trajectory, both to 2030 and in the longer-term to 2050:

- Groundwork referenced the global carbon budget for 1.5 °C stated in IPCC AR5, and argued that "the South must still reduce emissions by more than its fair share to avoid dangerous climate change. This leaves South Africa with a carbon budget of between 10 and 12 Gt from 2010 to 2050 and almost nothing thereafter" (Groundwork, 2015b, p. 2)[32].

32 Groundwork's submission further asserted that the PPD trajectory, as codified in the NCCRWP and INDC, was already greater than South Africa's previous "Copenhagen offer" (which Groundwork further asserted was too high in any case, as it was based on a 2 °C temperature limit, rather than 1.5 °C) (Groundwork, 2015b).

- Earthlife Africa stated that "in order to make a proportional contribution to a less than 2 °C increase, South Africa would need to reduce emissions by 5 % each year from 2020" and presented analysis which showed that, by following this path, annual emissions in 2030 would be around 250 Mt CO_2-eq (Earthlife Africa, 2015).
- WWF-SA cited IPCC AR5 and PRIMAP (Gütschow et al., 2018) in stating that a 2016 – 2050 carbon budget of 20 – 22 Gt CO_2-eq "cannot credibly be included as being in valid contention for South Africa's fair share", and proposed that a lower carbon budget, in the range of 12.4 – 16.0 Gt CO_2-eq, would represent a fair effort (WWF-SA, 2015b, p. 17).
- Greenpeace's presentation lamented a "significant lack of ambition" in the (draft) INDC, calling the carbon budget of 20 – 22 Gt CO_2-eq "unacceptably large" and "twice as much as SA could justify as equitable" (Greenpeace Africa, 2015).
- SAFCEI's submission stated that the INDC should "clearly indicate South Africa's commitment to 1.5 degrees, not 2 degrees" and that "it would demonstrate leadership if South Africa took a position in line with the Africa Group's position of 1.5 degrees" (SAFCEI, 2015).

Each of these submissions were premised on South Africa having some responsibility for historic and current emissions, especially by comparison to other African countries, and on the acute vulnerability, in terms of health, food and water security, of poor communities to high levels of warming. Three submissions (Greenpeace Africa, 2015; SAFCEI, 2015; WWF-SA, 2015b) explicitly called on South Africa to "demonstrate leadership" in the UNFCCC process, by signalling ambition in its INDC.

Two submissions were also made by representatives of the business community to the INDC public hearings, by Business Unity South Africa (BUSA, 2015) and the Chemical and Allied Industries Association (CAIA, 2015). Both were supportive of South Africa making a commitment to transition to a lower carbon economy. BUSA, however, stressed the need "to balance national contribution to the global effort to reduce emissions and national imperatives of increasing economic growth and employment" (BUSA, 2015, p. 9), while CAIA called for an update to the mitigation potential analysis "to determine what, and how much, mitigation is still available to the South African economy without impacting economic development" (CAIA, 2015, p. 8). BUSA also noted that South Africa's emissions in 2010 had been lower than previously expected, when the NCCRWP was published, owing partly to lower-than-projected economic growth, and that the trend of lower emissions was likely to continue to 2021 (BUSA, 2015, p. 6).

Both submissions called for revising the PPD, based on more up-to-date data, and for additional flexibility to be included in the INDC, to reflect emissions peaking later than anticipated, and to ensure that South Africa commits to "achievable targets" in this context (CAIA, 2015).

An interviewee noted that ITTCC considered South Africa's NDC to be fair on the basis of national circumstances, including socio-economic challenges the country presently faces and poor economic performance in recent years, and that "once the economy recovers ambition can be built into the NDC, taking common but differentiated responsibilities into account".

It should be noted that, in addition to public written submissions, business also engages government directly, in meetings that are typically not open to the public. The extent to which such engagements influence government decision-making is not always fully apparent, although further analysis of this is beyond the scope of this case study (Trollip & Boulle, 2017).

A subsequent report prepared in 2017 by BLSA and BUSA, discussing *inter alia* the then-forthcoming carbon tax bill, reiterated concerns that South Africa is "currently emitting

below the PPD due to the stagnant economic climate and lower generation of electricity", and that "the urgency of mitigation action is not justifiable" (BLSA & BUSA, 2017, p. 93). Assertions about a lower emission trajectory are supported by the Reference Case scenario documented in a draft report prepared for DEA on the effect of *Policies and Measures to Reduce Greenhouse Gas Emissions* (PAMS) (EScience Associates & ERC, 2018). The analysis finds that, were South Africa to follow a least-cost pathway in planning and implementing measures in the electricity and liquid fuels sectors, combined with lower economic growth forecasts as well as advances in the assessment of South Africa's terrestrial carbon sink, the emission trajectory would then fall within the NDC range in 2025 and 2030. Illustrative text from the study follows:

> "It is a very noteworthy departure from emissions trends in previous emissions Reference scenarios. The results stem from four main drivers: firstly, a revolution in the costs of renewable energy technology, which drives decarbonisation in the electricity sector; secondly, a decline in liquid fuels demand through efficiency improvements, modal and technology shifts (particularly to fuel cell and electric vehicles) in the transport sector; thirdly, a more moderate economic growth path; and lastly, advances in the assessment of South Africa's terrestrial carbon sink, which was not considered in the 2014 study" (EScience Associates & ERC, 2018).

When asked, in light of this evidence, if South Africa could raise its ambition in a new or updated NDC, an interviewee from Eskom felt that it would be fairer to keep to the existing PPD trajectory, and prioritise economic growth to support this. An interviewee from ITTCC noted that it would only be fair for South Africa to raise its ambition if other countries were equally committed to doing so, noting that otherwise, under a future of "committed" warming, South Africa would need to prioritise spending on adaptation. An interviewee from government confirmed that there is ongoing work to update and potentially revise the PPD trajectory. The interviewee noted that South Africa would be unlikely to update or revise its NDC before the findings of the study were finalised and released.

Emergent mitigation equity themes

To summarise, the equity debate surrounding South Africa's NDC is primarily drawn between the urgency of mitigation action, which civil society argues is driven by South Africa's responsibility for emissions and vulnerability to climate change impacts, and, in business's view, the potential opportunity costs of mitigation action in terms of socio-economic growth and development. While there is growing consensus that climate and development objectives need not be trade-offs – e.g. achieving universal electricity access need not require building more large coal-fired power generation (Tait & Winkler, 2012), while carbon tax revenues could be used to fund large-scale programmes to alleviate energy poverty (Winkler, 2017) – this remains a key concern for business.

Furthermore, whereas civil society argues that South Africa should aim to be more ambitious – i.e. targeting the lower-PPD trajectory, or lower still – and follow the 'polluter pays' principle, business cautions that this could place considerable strain on the South African economy, disproportionate to the perceived burden taken on by other countries, and that the existing evidence base cannot provide sufficient certainty on possible outcomes of mitigation policy measures. Business also notes that, as South Africa's actual emission trajectory is presently below (upper) PPD, in their view this eliminates the need for further action (such as a carbon tax).

The following section turns to the preparation process, and equity considerations therein, of the adaptation component of South Africa's NDC.

6.3 Adaptation NDC

South Africa's NDC outlines six goals through which it will "address" adaptation over the 2020 – 2030 period, and includes high-level investment requirements for each goal. The

NDC states that "this information enables Parties to meet commitments under Article 4.4 and the provisions of Article 12 of the Convention in relation to adaptation" (South Africa, 2015b, p. 3). South Africa, like other developing countries (Pauw et al., 2018; Winkler et al., 2018), places significant importance on adaptation, owing to its relative vulnerability to the adverse effects of climate change and limited capability to adapt accordingly.

Preparation process

The Council for Scientific and Industrial Research (CSIR) developed a technical document which supported the preparation of the adaptation NDC (CSIR, 2015). As with mitigation, the adaptation contribution was developed based on the NDP, which called for "ensuring that all sectors of society are more resilient to the future impacts of climate change" (NPC, 2011, p. 209), and the NCCRWP, which established the policy framework for "mainstreaming climate-resilient development" (DEA, 2011, p. 36).

The latter further provided the mandate for the undertaking of an "Adaptation Research Flagship Programme" (one of eight near-term flagship programmes in the NCCRWP) by the South African National Biodiversity Institute, with the purpose of understanding the long-term risks of unabated warming at sectoral level, and identifying cross-sectoral adaptation strategies to respond to these risks. This culminated in the publication of Phase 1 of the *Long Term Adaptation Scenarios* (LTAS), which identified implications of warming and adaptation responses and research requirements for the water, agriculture and forestry and marine fisheries sectors, as well as human health and terrestrial biodiversity (DEA, 2013).

CSIR's analysis built on the LTAS work and led to the formulation of six adaptation undertakings for the period 2021-2030, with high-level estimate investment costs quantified, all of which were included in the INDC. One of the more prominent of these was the goal of taking into account climate considerations in national, sub-national and sectoral policy frameworks (South Africa, 2015b, p. 4), reflecting CSIR's report which stated that, in order to "mainstream climate-resilient development", all government sectors needed to ensure policy and planning alignment with the NCCRWP, and all national departments needed to develop "sector specific climate change adaptation plans" (CSIR, 2015, p. 8).

Fairness considerations of adaptation NDC

The NDC is clear that adaptation is a "global responsibility and concern", and forms part of South Africa's fair contribution to the global effort:

> "South Africa views adaptation as a global responsibility in the light of Article 2 of the Convention as further codified in the UNFCCC as a temperature goal. Further understanding climate impacts as being driven by global inaction / action on mitigation, the adaptation burden is therefore a global responsibility. It is in that light that South Africa considers its investments in adaptation as a contribution to the global effort, which should be recognised as such. Further information is provided in the equity section of the INDC" (South Africa, 2015b, p. 6).

Interviewees from business, civil society, government and Eskom emphasised the importance of including adaptation as part of the NDC, and concurred with the statement that adaptation forms part of a fair contribution to the global effort, based on the varying views on domestic vulnerability, as outlined below:

- For government respondents, the greatest challenges would lie in bringing together multiple actors, from multiple sectors, to coordinate cross-sectoral planning required to improve climate resilience, at a time when the full potential and severity of impacts of climate change remain relatively uncertain.
- For business respondents, concern lay in South Africa's sensitivity to climate risks, both in terms of the cost of modifying investment plans and decisions to hedge against transition risks, as well as the physical risks from acute and chronic weather events.

- For an Eskom respondent, concern was expressed around how climate variability created increasingly "tangible" risks for operations, for example through loss and damage to electricity generation or transmission infrastructure resulting from water loss, lightning events, flood events, and other natural disasters.
- For a civil society respondent, of greatest concern are the implications of climate change impacts for those already living in poverty, with greatest reliance on climate-affected economic activities and the lowest capability to adapt.

One respondent from government also noted that adaptation planning was important from a regional perspective, particularly given South Africa's trading network with neighbouring SADC (Southern African Development Community) countries, e.g. in relation to foodstuffs such as maize. For example, climate-affected harvests in South Africa could increase food prices, not only in South Africa, but in neighbouring countries, and *vice versa* for foods South Africa imports. Similarly, the interviewee highlighted that the dependence, particularly of eastern regions of South Africa, on water supply from the Lesotho highlands, is such that changes to rainfall patterns in Lesotho could consequently have implications for South Africa.

Public responses to the adaptation component of the INDC were mixed. WWF-SA, for example, welcomed the identification of national adaptation measures, in the draft INDC (South Africa, 2015a), as "an excellent first step", and noted that, compared to other countries' INDCs, "South Africa's is among the best in terms of adaptation, underpinned by excellent research" (WWF-SA, 2015a, p. 3). In contrast, Worthington (2015) described the adaptation component of the INDC as "very generic and high-level, with no discussion of national means of implementation or issues such as providing direct stakeholder access to adaptation funds" (Worthington, 2015, p. 5).

Groundwork went further, highlighting the occurrence of drought in areas where timber plantations are located and acid mine drainage affecting water catchment areas near Johannesburg as showing how "the priority for capital … has resulted in wholesale destruction of environments and impoverishment of people", and that "adaptation is thus failing before it even starts" (Groundwork, 2015a). South African labour unions take a very similar position on climate change response overall, and emphasise the need for greater transparency around allocation and disbursement of adaptation funds (COSATU, NALEDI & NUM, 2015).

Emergent adaptation equity themes

The public responses of civil society and labour (adaptation was not mentioned in publicly available submissions from business to the public hearings (BUSA, 2015; CAIA, 2015)) assert the importance of adaptation in South Africa's contribution, but arguably do not present nuanced *equity* views, beyond the accepted view that climate change impacts will be felt more severely among the economically marginalised and impoverished. While all interviewees agreed that equity applies to adaptation, none arguably drew an exact link between the scale of the adaptation contribution and the extent to which this represented a fair 'share' globally – whereas such links were easily made in respect of the mitigation contribution. This perhaps reflects upon the greater uncertainty of adaptation, rather than on any sentiment of public disinterest. Further work is being undertaken, *viz* the Draft National Adaptation Strategy (DEA, 2017b), which may better inform equity understanding in relation to adaptation in future.

6.4 Support NDC

Under the support component of the NDC, South Africa lists public and private investments already made in both mitigation and adaptation, as well as indicative long-term investment requirements for further planning and measures for both. Further on, the document notes

that "an assessment of equity also needs to take into account means of implementation", and reiterates the need to balance development priorities with mitigation and adaptation (South Africa, 2015b, p. 10).

All interviewees agreed that it was important for South Africa to include support in the NDC. A respondent from government noted that support would be needed for the "huge" costs likely to be incurred, particularly for adaptation programmes. Business respondents emphasised that support was "vitally important" to assist South Africa's "transition", in light of its national circumstances and development priorities. A labour research respondent placed greater emphasis on historic responsibility, i.e. that South Africa was justified in including support requirements in line with the 'polluter should pay' principle.

Another government respondent clarified however that, although investments are quantified in the NDC, this does not render any part or component of South Africa's NDC as 'conditional', primarily on the grounds of there being risk that support (especially finance) might not materialise, but that South Africa would still be held to the "full" NDC. The interviewee did however reiterate the importance of signalling that it would be difficult to operationalise mitigation and adaptation activities required "on a big scale" without support.

6.5 Development and protocols of domestic climate discourse

In developing the NDC, and climate action more broadly, the South African government places great emphasis on stakeholder engagement and public participation, which reflects the country's democratic political culture post-1994. Submissions from a wide range of actors representing business, labour, civil society and other groupings, were considered during the parliamentary hearings on the draft INDC, and are publicly available online (Parliamentary Monitoring Group, 2015).

Such public processes do produce tangible outcomes. A civil society interviewee highlights, for example, the removal of any text on 'nuclear power', which appeared as an emission abatement technology option in the draft INDC (South Africa, 2015a, p. 12), from the final INDC, as a result of numerous objections raised during the hearings. Additionally, WWF-SA suggested text found in the draft INDC on South Africa "being responsible for 1-1.5 % of annual global emissions" be removed (WWF-SA, 2015b, p. 6), and this 'small share' argument does not appear in the final INDC.

Despite this, some concerns were raised on the extent to which the NDC process was fully participatory. A civil society interviewee noted a lack of awareness among much of the public, including key stakeholder groupings (e.g. in rural agriculture and healthcare) who could better-inform response planning. The interviewee suggested that greater awareness of the UNFCCC process needs to be raised amongst the public, and that the language needs to be made more accessible for non-experts to understand these processes.

Labour unions meanwhile stated they "were not happy with the [INDC] process", criticising it for being too rushed, with insufficient time to incorporate stakeholder comments, and called upon DEA to improve its consultation process with civil society, labour and "all interested parties", without "merely ticking the boxes" (COSATU et al., 2015).

Furthermore, there has been limited participation in climate discourse, and in the NDC process specifically, by poor communities or community-based organisations. While civil society makes frequent reference to the vulnerability of poor communities, labour unions argue for the need to protect workers, and business stress the importance of safeguarding economic growth (and, by extension, socio-economic development), none of these groups speak directly for the poor. There is little evidence of engagement with CBOs, church communities and other charities, and the people, to whom these groups provide aid, invariably lack even a basic understanding of climate and environmental issues, according to respondents from civil society and labour.

There is a similar lack of gender themes being represented in climate discussions. Although the *Women in Energy and Climate Change Forum* did make a submission to the INDC public hearings, calling for "legally binding" national and global adaptation and mitigation policies (Parliamentary Monitoring Group, 2015), there was little evidence to suggest that gender equity was taken into significant consideration during the NDC process.

When asked whether good-practice protocols or a standard approach for effort-sharing should be established for NDCs, a government interviewee noted that, in an "ideal world", such guidance or protocols would be established; but that it was impossible to determine a singular approach that would be globally accepted, on account of different "winners and losers" inherent in different effort-sharing paradigms. When asked whether a menu of approaches might be a possible option to overcome these differences, the interviewee pointed out that there is, as yet, still no agreement that would oblige countries to use any of these methods, and that selecting different methods, even within the bounds of a menu of options, would not remove the challenge of comparing analysing and comparing different efforts.

6.6 Just transition

A key theme that has emerged consistently is the call for 'just transition' to a low-carbon and climate resilient economy. As discussed above, South Africa's labour unions have continually insisted that protection of workers, especially in the coal sector, needs to be incorporated into South African transition policy. Just transition is explicitly a concept of equity. While the extent to which it influenced the preparation of the INDC submitted before Paris may have been limited, it is nevertheless a core concept and likely to inform the implementation of NDCs and future updates.

South Africa signals its commitment to a just transition both in the NCCRWP (DEA, 2011, p. 5) and the NDC (South Africa, 2015b, p. 8) – the only NDC, at the time of writing, to explicitly mention just transition (Climate Transparency, 2018). This commitment is further expressed in the Preamble of the Climate Change Bill (South Africa, 2018a) and would thus become a legal mandate, if the Bill is signed into law in its current reading.

The National Planning Commission (NPC) – the government department responsible for the NDP – began an initiative to facilitate a series of dialogues between key stakeholders on pathways for a just transition, with the aim of developing a vision for 2050 and "different paths to transition to low carbon society that also addresses the triple challenge of reducing poverty& inequality and creating jobs" (Essop, 2018, p. 7). The NPC arguably considers the just transition to incorporate a wider section of society, compared to the traditional view amongst labour that just transition applies specifically to workers. The NPC just transition dialogues are expected to continue into 2019.

Additionally, in 2018 the Presidency hosted a national 'Jobs Summit', which brought together stakeholders from business and labour and sought to develop strategies to address the country's crippling levels of unemployment. A Framework Agreement was signed between the parties, which included a Presidential Climate Change Coordinating Commission (PCCCC) – a statutory body mandated to coordinate and oversee the just transition (South Africa, 2018b). It will include social partners (which should include civil society) and consider Sector Job Resilient Plans (SJRPs). The opportunities in green jobs, industries, climate resilience activities that the PCCC will explore are important for a just energy transition and energy democracy.

The ultimate objective of both these processes is to establish a new social contract between government, business, labour and civil society, that further ensures equitable and sustainable development is core to climate change response policy and measures, for both the short and long-term. This reinforces South Africa's position on development being core to its equitable share of global climate efforts, and will continue to be a prominent and influential feature of the domestic policy and planning discourse.

6.7 Case study conclusions

Domestic equity discourse on South African climate policy is 'held' mostly by civil society, who argue that South Africa should commit to more ambition to contribute its fair share, and business, who raise concerns about the uncertainty of South Africa's mitigation potential and the opportunity costs of mitigation action in terms of socio-economic growth and development. Both business and civil society have disputed the evidence base supporting the PPD, and have called for a revision of the analysis informing the NDC and longer-term carbon constraints; both also concur on the importance of adaptation as a component of South Africa's NDC

Civil society is particularly active in engagements with government through public participation processes and opportunities to make written and verbal submissions. While business engages in public processes, there are also government-business meetings, which may influence government decision-making more directly.

Inputs from labour unions have been largely limited to expressing strong support for a just transition that proactively protects workers in the fossil fuels (especially coal) industries, and, whilst encouraging the growth of renewable energy, does not transfer the ownership of South Africa's energy supply to private entities.

On mitigation, South Africa commits to a carbon budget that it determines as fair, based on IPCC AR5 analysis and taking into account equity principles of capability, responsibility and right to promote sustainable development. South Africa highlights that its climate action has to be, and is, contextualised among more fundamental national development priorities. Other effort-sharing approaches however generally determine lower carbon budgets for South Africa (albeit not necessarily accounting for its development priorities to the same extent), which concur with the general call from civil society for more ambition.

On adaptation, South Africa frames an equity argument in relation to global responsibility, which is similar to key provisions of the Paris Agreement. This approach is generally and widely supported by domestic stakeholders, albeit with seemingly more limited understanding of equity in relation to adaptation, as compared with mitigation. On support, the approach taken is to identify support for mitigation and adaptation, respectively. The overall argument relating to equity is that support by developed countries for developing countries is a matter of fairness.

7. Comparative Analysis of the four NDCs

This chapter presents a compare and contrast analysis of the four NDCs. While the NDCs provide a basis for comparison, the unique elements of national circumstances and political cultures and structures present challenges for the task of drawing direct comparisons between the Parties. Furthermore, Parties agreed limited guidance for the formulation of their INDCs (Mbeva & Pauw, 2016), which partly led to wide variance in the accompanying information provided by the Parties in the NDCs on fairness and ambition (Winkler et al., 2018). The scope of NDCs, in terms of mitigation, adaptation and means of implementation, also varies across all four Parties (see **Error! Reference source not found.** below). Nevertheless, some themes emerge from the case studies, and are elaborated below, and support an overall finding that domestic equity considerations influenced the level of ambition expressed in NDCs, although the extent and 'direction' of this influence varies greatly between each Party.

A significant difference across the four case studies (and NDCs in general) relates to scope. The two NDCs from developing countries (Kenya and South Africa) include adaptation and means of implementation; while the NDCs of Canada and the EU (the two developed countries among the case studies) are limited to mitigation.

Table 7-1. Scope of components included in the four NDCs

Component	*Canada*	*European Union*	*Kenya*	*South Africa*
Mitigation	✓	✓	✓	✓
Adaptation	× (2015 NDC) ×/✓ (2017 NDC) (mentioned in the narrative portion of the 2017 NDC, but not included in the scope – see § 3.5)	× (separate undertaking on adaptation submitted to the UNFCCC in June 2015)	✓	✓
Means of Implementation	International climate finance commitments, for 2016-20, stated in the PCF, but not included in the NDC	Provision of support mentioned in separate undertaking on adaptation, but not included in the NDC	Targets conditional on adaptation finance, mitigation finance, technology transfer and capacity building	Support for adaptation and mitigation quantified in USD billions required (did not make an un/conditional distinction)

Error! Reference source not found. shows in more detail which elements were included, while also making clear that elements not included by developed countries are treated elsewhere. While the findings in **Error! Reference source not found.** are drawn from the four cases examined in this study, the pattern reflects a broader divergence between developed and developing countries on scope of NDCs (Winkler et al., 2018).

7.1 Equity in relation to Mitigation

Equity considerations in relation to mitigation commitments are more pronounced, across all four case studies, than they are in respect of adaptation and support. In considering how equity influenced the development of mitigation targets in NDCs, the first step is to consider the approach taken by each Party to formulate its emission reduction or limitation target(s), as stated (according to the authors' interpretation) in **Error! Reference source not found.**, and then to consider how the Party described the fairness and ambition of its contribution.

Table 7-2. Authors' interpretation of 'main' mitigation targets of the four Parties' NDCs

Party	*Mitigation target*
Canada	30 % reduction of GHG emissions by 2030 below 2005 levels (Canada, 2015). "… meet or even exceed its target" of 30 % reduction of GHG emissions by 2030 below 2005 levels (Canada, 2017a).
European Union	"at least" 40 % reduction of GHG emissions by 2030 below 1990 levels (European Union, 2015b).
Kenya	30 % reduction of GHG emissions by 2030 below the BAU scenario of 143 Mt CO_2-eq (Kenya, 2015b).
South Africa	GHG emissions by 2025 and 2030 will be in a range between 398 and 614 Mt CO_2-eq (South Africa, 2015b).

Beginning with the EU's NDC, the economy-wide emission reduction target was taken directly from the *2030 climate and energy policy framework*, and represents the lower bound of the longer-term EU goal to reduce greenhouse gas emissions in 2050 by 80-95 % compared to 1990. The arrangement of the EU is such that targets for non-ETS sectors are established at a central political level, by the European Council, and then differentiated for Member States at a technical level. The differentiation is applied in proportion to the respective capabilities of member states, as measured by GDP per capita and adjusted for countries' abatement costs (discussed further in the case study). In this sense, equity is considered explicitly, and quantitative criteria are applied domestically in formulating mitigation targets for the EU NDC. The EU states that its NDC target is "in line with the EU objective, in the context of necessary reductions according to the IPCC by developed countries as a group" (European Union, 2015b).

In addition to its long-term alignment with necessary emission reductions according to IPCC analysis, the EU references three indicators to substantiate the fairness and ambition of its mitigation contribution, namely that (1) emission levels have already reduced by 19 % below 1990 levels while GDP grew over the same period, (2) average per capita emissions fell from 12 tCO_2-eq in 1990 to 9 tCO_2-eq in 2012 (with a projection of further reductions to 6 tCO_2-eq per capita by 2030), and (3) emissions peaked across the EU in 1979 (European Union, 2015b). As noted in the case study, these statements, along with the early timing of the INDC submission, signal the EU's desire to be perceived as a global leader in climate change mitigation.

By contrast, Kenya's mitigation target – a 30 % reduction of greenhouse gas emissions below business-as-usual (BAU) by 2030 (Kenya, 2015b) – was formulated on the basis of what was considered feasible and achievable, rather than analysis of a fair share. As noted in the case study, Kenya's Second National Communication to the UNFCCC (Kenya, 2015a) presented a more ambitious, aspirational emission reduction target of 60 % below BAU, based on what had been identified previously in the first NCCAP (2013–2017) through rigorous technical analysis (supported by the StARCK+ programme) and cross-sectoral consultation through an inter-ministerial task force (Government of Kenya, 2013a). Kenya chose to adopt the more conservative '-30 %' target for the NDC, based on what it considered "doable" (Government of Kenya, 2018a, p. 13).

Kenya's NDC emphasises the fairness and ambition of its mitigation contribution in light of its national circumstances and low historic responsibility to global emissions, and the need to promote sustainable development (Kenya, 2015b). The key equity arguments underlying Kenya's mitigation target were that (1) Kenya has low historical responsibility for cumulative greenhouse gas emissions, but is nevertheless willing (at least in part due to vulnerability to climate change impacts, as well as wanting access to support) to commit to emission reductions; (2) Kenya contextualises its mitigation contribution within its national development goals (arguing for equitable access to sustainable development), as expressed in Kenya's *Vision 2030* and 5-year Medium-Term Plans for economic development; and (3) given its development needs and opportunity costs, Kenya views its contribution as

equitable, and international support for means of implementation as necessary for raising its ambition.

South Africa's mitigation NDC is effectively the PPD emission trajectory, which frames official mitigation strategy to 2050, expressed in the years 2025 and 2030. South Africa states that the PPD emission trajectory range "fully aligns with the IPCC AR5 [Fifth Assessment Report of the IPCC (IPCC, 2014)] future global carbon budget" (South Africa, 2015b, p. 8), and substantiates this statement with reference to carbon budget analysis performed by South African experts. The PPD trajectory is based on foundational Long-Term Mitigation Scenario (LTMS) analysis, described in the case study, which assessed the mitigation potential of each major economic sector, in order to reach an emission trajectory consistent with IPCC analysis for stabilising greenhouse gas concentrations. This was framed as what is 'required by science', but also included consideration of a fair share.

South Africa referred to effort-sharing analysis by its own experts to substantiate the fairness and ambition of its mitigation NDC, which showed that it was committing to more than its fair share of the global mitigation burden towards the 2 °C temperature limit, based on a fair share calculated by accounting for the equity principles of responsibility, capability and the right to promote sustainable development. Previous analyses found that this claim, when compared to other NDCs, is substantiated better than most others, considering that the NDC itself points to analyses by experts outside of the country (Winkler et al., 2018), albeit that these analyses by 'others' (CASS / DRC Joint Project Team, 2011; Jayaraman et al., 2011) used different effort-sharing approaches.

Equity considerations played a comparatively lesser role in the development of Canada's 2015 NDC, which was formulated by the previous federal government under Prime Minister Harper. Canada, unlike the other three Parties examined here, does not include an explicit section in its 2015 or 2017 NDCs on how it considers its contribution to be fair and ambitious. Canada's NDC mitigation target, determined at a federal level, was however chosen with close consideration of the targets of its 'peers' and main competitors, i.e. the United States and the EU, but also China and others, as well as considerations of domestic implementability and intra-national equity between its subnational entities. Arguably, this reflects equity, albeit non-transparently, through consideration of comparability of effort. The current administration, however, does appear to deploy a more conventional equity frame by emphasising the need for Canada to make "our contribution" to the global fight against climate change, and by implicitly acknowledging the insufficiency of the current target by framing it as a "floor" rather than a "ceiling" (CBC News, 2015a).

Much of the Canadian climate policy development occurs at the provincial and territorial government level where there is wide inter-provincial variance, including in terms of income and, crucially, emission levels and profiles. For example, the per capita emissions in Saskatchewan are over seven times higher than in Quebec (ECCC, 2018). Domestically, Canada appears to mimic the Paris Agreement architecture to some extent, by, in large measures, constructing the Canadian national target in a bottom-up fashion from provincial and territorial targets and policies; this contrasts with the EU, where the target is determined centrally and then 'distributed' among Member States. This configuration has affected Canada's international climate commitments in the past, such as its failure to meet its targets under the Kyoto Protocol, and subsequent withdrawal, as well as the expected shortfall relative to its Copenhagen/Cancun target in 2020.

Equity in mitigation is thus addressed in all four NDCs. While some countries include equity more explicitly and refer to quantitative criteria, others emphasise implementation aspects of NDCs. For all four cases, the distributional implications among domestic stakeholders are an important consideration, arguably underscoring the importance of domestic equity.

7.2 Equity in relation to Adaptation and Support

As shown in **Error! Reference source not found.** above, both Kenya and South Africa include components on adaptation in their NDCs. Additionally, Canada's 2017 NDC also includes a paragraph on adaptation (Canada, 2017a, p. 3), arguably reflecting the fact on the ground established by developing countries' NDCs, although Canada's negotiation stance on NDC scope remains mitigation-only or at least mitigation focussed. While the EU maintains its position that NDCs should be on mitigation only, an EU official noted that adaptation is considered an integral part of EU internal policy and planning processes, and the EU indeed further elaborates on its undertakings in adaptation planning in a separate submission to the UNFCCC (European Union, 2015a).

While all four case studies show that the Parties are grappling with their respective, if differentiated, vulnerability to climate change impacts, the framing of adaptation in the Parties' communications (whether in NDCs or separate undertakings) suggest that more work is needed, across all four Parties, to build capacity and understanding to enhance the climate resilience of various sections of society. The Kenyan and South African cases show that work is being undertaken to assess vulnerabilities and determine adaptation response strategies, and a similar commitment is stated in the 2017 Canadian NDC, operationalised by the Pan-Canadian Framework (PCF; see § 3.5).

Nevertheless, although Canada's 2017 NDC submission mentions adaptation, a clear difference still emerges between the way developed-country and developing-country case studies prioritise adaptation. Kenya's NDC makes adaptation actions a greater priority than mitigation, and South Africa's NDC signals the importance of its adaptation component by placing it ahead of mitigation in the document. Both countries reference adaptation as part of their fair contribution to the global effort. South Africa does this very explicitly, with a section on "Equity considerations in adaptation" (South Africa, 2015b, p. 6), whilst Kenya notes, under the fairness and ambition section of its NDC, its aspiration to increase resilience to climate change through a comprehensive adaptation programme, which "represents a high level of fairness and ambition in light of Kenya's national circumstances" (Kenya, 2015b, p. 6).

It could therefore be argued that, while understanding of equity around adaptation is still limited by comparison to mitigation, there is a clear message from the two developing-country Parties that adaptation is an equitable part of their contribution to the global effort. This is consistent with Article 7 of the Paris Agreement, and Article 7.2 in particular which states:

> "Parties recognize that adaptation is a global challenge faced by all with local, subnational, national, regional and international dimensions, and that it is a key component of and makes a contribution to the long-term global response to climate change to protect people, livelihoods and ecosystems, taking into account the urgent and immediate needs of those developing country Parties that are particularly vulnerable to the adverse effects of climate change" (UNFCCC, 2015).

In terms of support, the Kenyan and South African NDCs include quantitative investment sums that would be required to implement the envisaged mitigation and adaptation actions. Kenya makes its mitigation and actions partly conditional to international support, South Africa only makes its adaptation actions partly conditional on international support.

South Africa's NDC, describes investments that would be required to scale up existing adaptation programmes and further develop and rollout mitigation technologies. South Africa further "seeks recognition" for its investments-to-date on adaptation, and also highlights contributions from the private sector to mitigation, specifically through IPP investments in the domestic REIPPPP (renewable energy independent power producer procurement programme; see the case study). Whilst South Africa's NDC does not distinguish conditional or unconditional components, it does note that scaling up of "viable and successful initiatives" will require contributions from "domestic, private sector and

international sources". South Africa's NDC also alludes to further technology and capacity-building needs, although – again – these are not presented explicitly as international support requirements.

In contrast, the Kenyan NDC is clear that it will be implemented "with both domestic and international support". A high-level investment estimate (USD 40 billion) is presented, encompassing both mitigation and adaptation, with the NDC noting that Kenya will require international support in the form of finance, technology transfer and capacity building in order to fully implement the NDC.

Like all the other developed countries (Pauw et al., 2016), neither the EU nor the Canadian NDCs include details on international support that these Parties expect to make available as part of their contribution, although both Parties make reference to such commitments elsewhere (Canada, 2016; European Union, 2015a).

7.3 Key domestic actors that influence NDCs

Whereas the Section 7.1 compares approaches between the Parties in developing their mitigation NDCs, and how they were considered to be fair and ambitious, this section looks at *who* influences domestic decision-making; i.e. how are the NDCs influenced by domestic groups, and whose equity perspectives determine the Parties' resulting NDCs. Variance between the case studies emerges in terms of the specific domestic actors that have greatest influence on national government decision-making, reflecting the importance of political culture in formulating NDCs.

For example, Canada's NDC target was established at the federal cabinet level, where certain inputs prepared by the environment ministry were weighted to arrive at the final target. However, key factors in its formulation, in addition to the consideration of comparability of effort with its main peers and competitors (described above), were (1) implementability, where existing federal, provincial and territorial policies and targets were taken to be the main vehicles of implementation; and (2) potential adverse economic impacts from climate policy, in particular with regards to the Canadian oil and gas sector, especially non-conventional oil reserves in the oil sands/tar sands.

A progression can be seen in the case of Canada between the 2015 INDC and 2017 NDC (recalling the distinction between these outlined in § 3.1), and the development of the Pan-Canadian Framework (PCF) in the intervening period, in terms of the level of stakeholder participation. Whereas no consultation, not even with provinces, was undertaken by the previous administration in developing the INDC, consultations were very wide and open for the development of the PCF, the basis for the 2017 NDC submission. The PCF was co-created by federal-provincial-territorial working groups, thus directly engaging different levels of government, and balancing their widely varying views on the appropriate level of Canada's level of ambition. Consultations extended to National Indigenous Organizations and stakeholder groups, including civil society organisations, labour unions and industry representatives. Furthermore, through the PCF process an understanding of the impacts of mitigation measures on communities began to emerge, with the PCF committing to a "fair and just transition" for these communities. Beyond just transition for impacted workers and their families and communities, this includes a focus on Indigenous Peoples, their Traditional Knowledge, as well as their specific needs within the transition and particular vulnerabilities, for example with regards to impacts in the Arctic.

A similar degree of stakeholder consultation was undertaken in Kenya. Beginning with the development of Kenya's first NCCAP (Government of Kenya, 2013a), climate planning and policy development in Kenya has been steered by an inter-ministerial task force, ensuring cross-sectoral consultation on the development of the NDC and NCCAPs, with further engagement with civil society, the private sector, youth and other marginalised groups.

As described in the case study, discussions are currently underway on finalising Kenya's NCCAP 2 (Government of Kenya, 2018a) – understood as *de facto* the updated NDC (see § 5.4) – with key discussions on maintaining the context of climate change actions around Kenya's development goals and priorities. Discussions on whether to update the NDC have focused on sectoral Ministries with high abatement potential, and a key 'equity dilemma' has emerged on how to account for Kenya's recently discovered oil and gas reserves in mitigation scenarios. Similar to Canada's provincial governments, the counties of Kenya (units of devolved government under the 2010 Constitution) have been identified as key implementing entities for the NCCAP 2. However, the case study finds that counties perceive they have as yet had limited engagement on the NCCAP 2's development.

South Africa also undertook wide stakeholder engagement in developing its NDC, although, domestic equity considerations were arguably more influential in the development of climate policy that informed the NDC, and in the subsequent preparation of draft legislature for implementation, than the NDC itself. As documented in the case study, the key 'tension' in climate discourse lies between civil society, who call for more ambition, and business (and, by extension, industry and fossil fuel state-owned enterprises), who call for more flexibility.

Labour unions continue to advocate for commitment to a just transition, but otherwise seemingly do not take a strong position on whether South Africa should be more (or less) ambitious. Just transition is likely to inform both the implementation of SA's first NDC, and the formulation of future NDCs. This is driven both by a domestic debate and increased attention to a just transition internationally, including at COP 24.

Finally, fundamental to the EU's climate policy is the effort-sharing paradigm (see § 4.4). The EU is very mindful of internal effort-sharing among Member States, since it has historically formed a central feature of EU climate policy (see Section 4.4), specifically through the European Union Emission Trading Scheme (EU ETS) and other effort-sharing legislation for emissions not covered by the EU ETS. As noted above, equity arguments through the effort-sharing processes generally surface between Member States at sectoral policy level (e.g. between energy sectors).

Across the case studies, the balance of forces among domestic stakeholders was thus key to formulating the NDC, and how equity was considered. All four Parties undertook participatory processes and elicited input from key domestic stakeholders on the NDCs and/or key policy development that informed same.

7.4 Impact of NDCs on domestic climate action

At the international level, NDCs are described as key to reaching the Paris Agreement and instrumental in implementing it (Pauw et al., 2018). The focus on 'contributions' rather than the harder 'commitments' commonly used in international treaties (Rajamani, 2015), as well as the near-universal submission of NDCs, helped to circumvent the contentious differentiation between Annex I (developed) and non-Annex I (developing) country groups (Mbeva & Pauw, 2016). The bottom-up approach of formulating NDCs also allowed for countries to include aspects other than mitigation in their NDCs. On an international level, NDCs can thus be stated to have been a 'game-changer' compared to previous practices. On a national level, the adoption of the Paris Agreement has made mitigation and adaptation more of a political priority in many developing countries, and insights in, for example, options for emission reduction and financing thereof has improved (van Tilburg, Lütkehermöller, Rawlins, Roeser, & Luijten, 2017). An important question that has not been answered, however, is whether the NDC as such were a 'game-changer' at national level.

The most important indicator here, is whether countries' NDCs present new or fundamentally different targets on mitigation and other issues; or whether the NDC was treated, effectively, an exercise in reworking existing statements of climate policy into a format that could be more readily communicated, and compared, at the international level.

Additional indicators that can be considered are whether new governance arrangements or institutions were set up, and whether the NDC led to a different prioritization of respective governments. A further consideration is whether Parties are likely to raise the level of ambition of their mitigation contributions, should they choose to communicate updated NDC targets for 2030, by 2020. Rehashing

All four NDCs build on existing mitigation plans and strategies, and the three NDCs that refer to adaptation (Kenya, South Africa and Canada) also build on existing adaptation plans and strategies. Nevertheless, evidence from interviews across the case studies demonstrates that the importance of the NDC varied between (1) Kenya and Canada, on the one hand, where NDCs led to formulation of, and planning around, mitigation targets, where they had not previously existed, in the case of Kenya, or had not been as ambitious in the case of Canada; and (2) the EU and South Africa on the other hand, where the NDC mitigation targets were derived from existing longer-term targets to 2050.

In the case of Canada, it is clear that without the international expectation to communicate INDCs in 2015, a Canadian 2030 mitigation target would not have been established at that point in time. In addition to the national INDC target, provincial and territorial governments also adopted 2030 targets in 2015, at least partly in response to the international context. Additionally, the fact that NDCs are a very prominent feature of the Paris Agreement, is likely the reason why the current Canadian federal (Trudeau) government decided to communicate the main components of the PCF as an updated NDC in 2017. However, despite the "floor-not-a-ceiling" rhetoric, the target of the updated NDC remained unchanged. Moreover, recently the PCF has since come "under siege" from particular provincial governments, with several provinces challenging parts of the PCF in court. In this sense, while arguably catalysing target setting at national and sub-national level in Canada, it can be seen that the NDC has not had a 'game-changing' effect in terms of shifting domestic equity considerations with regards to inter-provincial equity, and indeed there remains the possibility that these dynamics may (again) have the effect of limiting implementation of current targets as well as further enhancement of the level of ambition. However, at least for the time being, the PCF (and to the degree that the PCF and be considered an extension of the NDC, the NDC) represents a substantial shift in the Canadian approach to climate policy where the federal government asserts jurisdiction in relevant policy areas, complementing provincial climate and energy policy and providing a minimal standard across the country, thus levelling the playing field and eliminating free-riding (see § 3.6).

Kenya's NDC and Second National Communication represented its first international communication of mitigation targets (the former being derived from the latter), which are subsequently directly informing the development of NCCAP 2. This in itself is 'game-changing' for Kenya, as it has arguably launched public discourse on sectoral allocation of mitigation, and thus stimulated considerations of equity that will influence future developments both industrially and in climate policy. The extent to which this results in tangible change on the ground may depend on whether Kenya can establish a robust transparency and monitoring, reporting and verification (MRV) framework, and thus balance access to international support with more stringent assessment of its progress in meeting its contributions.

By contrast, the EU had already established mitigation targets and systems for accounting (and trading) emissions. The NDC provided a catalyst for the EU to internationalise its 2030 emission reduction targets, but apart from taking a position on the role of international market mechanisms and land use, the NDC has not appeared to add much more impetus to climate policy development. Also, no new major changes were made in governance arrangements. However, after the targets of the 2030 climate and energy policy framework were determined, an EU internal effort-sharing arrangement helped to increase EU-wide targets for energy efficiency and renewable energy, and evidence from some of the interviews in the EU case study suggests these might help the EU to update its NDC in 2020 (albeit other interviewees noted the limited time window available to coordinate and reach agreement among Member States for this). This illustrates that the NDC is considered

important by policy officials, but also demonstrates that NDC targets follow from domestic policy, rather than vice versa.

Like the EU, South Africa drew its mitigation NDC from existing climate policy, which had already been previously developed in part by motivation to contribute its fair share to the global mitigation effort. Adaptation planning was also already underway, having begun with the Long-Term Adaptation Scenarios work (DEA, 2013). Domestic events subsequent to Paris, such as the two-year stall of the domestic renewable bid programme (see § 6.1), indicate limited changes to government prioritisation of climate change. However, impetus provided by the NDC arguably pushed the publication of two draft pieces of climate legislation, namely the carbon tax bill (South Africa, 2017) and climate change bill (South Africa, 2018a), and brought more attention to the just transition concept.

Despite these developments, there is insufficient evidence to suggest that NDCs had the same game changing impact in South Africa as was experienced in Canada and Kenya. Equity is thus found to be a game changer in two of the case studies (Canada and Kenya) and not in the other two (the EU and South Africa) – and each 'pair' is one developed and one developing country. In other words, equity playing a catalytic role in domestic policy formulation appears not to relate to developed/developing country status.

Generally, the case studies showed that mitigation targets flow from domestic policies and plans into NDCs, rather than the other way around. One could therefore observe both that national policy priorities matters to countries more that international norms; but that nonetheless, the multi-lateral regime continues to play an important role in setting norms. This hypothesis would however need to be explored further.

Equity in processes for updating NDCs

The Paris decision requests those Parties whose NDCs contain a time frame up to 2025 to communicate a new NDC by 2020 (1/CP.21, para 23), and also requests Parties whose NDCs contain a time frame up to 2030 to communicate or update their NDCs by 2020 (1/CP.21, para 24). In either case, Parties are expected to communicate NDCs every five years after 2020, in accordance with Article 4 of the Paris Agreement. Article 3 explicitly states that "the efforts of all Parties will represent a progression over time" (UNFCCC, 2015). Since all four Parties here communicated time frames to 2030, para 24 applies to them, and they need not communicate *new* NDCs in 2020. "Progression" would imply enhancing the NDC up to 2030 in 2020, and possibly submitting another up to 2035, although that seems unlikely unless there is agreement by all countries to submit two NDCs at the same time.

From the evidence documented in the case studies, the EU is the only Party among those examined here that is discussing whether it will explicitly raise the ambition of its 2030 target in 2020, motivated in part by the enhanced energy efficiency and renewable energy targets described above. Some respondents have however cautioned that the negotiation and coordination effort required to decide on new goals for an updated NDC would be substantial and may simply not be possible within the time remaining to 2020. In any case the EU is planning to submit its long-term strategy by 2020, based on a strategic vision by the European Commission that was published shortly before the 2018 UN climate negotiations in Katowice (COP24). The document 'A clean planet for all' presents a vision that can lead to achieving net-zero greenhouse gas emissions by 2050 through a socially-fair transition in a cost-efficient manner (European Commission, 2018a).

The Kenyan NDC would implicitly become more ambitious if, as indicated in the case study, the revised BAU projection for 2030 turns out to be lower than what is stated in the 2015 NDC, but there does not appear to be interest from the Government of Kenya to change the -30 % target, whether on the basis of equity or other technical analysis.

For Canada, there was no evidence from interviews that there is work currently under way to reconsider the NDC target. However, Minister McKenna is one of the signatories of the Marshall-Islands-led ministerial "Declaration for Ambition," in which signatories "commit to exploring the possibilities for stepping up our own ambition" (RMI 2018). While the

federal government currently focusses on implementing the PCF and defending elements of it against challenges originating from several provinces, there is a degree of optimism that Canada will utilize the Paris-mandated "communicate or update" by 2020 of its NDC to increase its level of ambition. On the side-lines of COP24 this optimism was further fuelled by media reports of Minister McKenna implying that Canada will enhance its ambition by 2020 by stating that "'in 2020 everyone has to come back and be more ambitious,' and she said Canada will" (Rabson, 2018).

South Africa will not likely revise the its mitigation target before work on revising the PPD emission trajectory has been completed, and therefore a new target for 2030 is unlikely to materialise in or before 2020. Interview respondents from the business and industry community have strongly called for improvements to the "fact base" underlying the PPD and, in the absence of more certainty, are unlikely to be comfortable with a new target that is more ambitious than the current trajectory to 2030.

7.5 Good-practice guidance for Parties

A workshop held in Bangkok (see Annexure B: Bangkok Workshop) discussed (*inter alia*) the question of whether, and to what extent, Parties may want guidance in preparing NDCs, including establishing whether (and what) criteria should be considered for guiding Parties in explaining how they consider their NDCs to be fair and ambitious. The consensus among workshop participants was that facilitative guidance could be considered useful to Parties, even if it were only framed in such a way as to offer 'good practice' suggestions and sharing of examples of how equity is operationalised in Parties' domestic contexts. Such guidance could offer a more systematic approach to understanding equity. However, any proposal that calls for mandating elements of NDCs would be rejected, in particular if it would be contrary to the principle of 'nationally determined' contributions.

Post-COP24 analysis

Subsequently, at the Katowice COP24 in December 2018, the decision text on preparations for the implementation of the Paris Agreement, agreed at the conclusion of the conference (1/CP.24, UNFCCC, 2018b), provides more guidance to Parties than was previously provided in either of the Lima (UNFCCC, 2014) or Paris (UNFCCC, 2015) decisions.

Firstly, Annex I of the Katowice decision on "Further guidance in relation to the mitigation section of decision 1/CP.21" elaborates on "information to facilitate clarity, transparency and understanding of nationally determined contributions, referred to in decision 1/CP.21, paragraph 28" (UNFCCC, 2018a, p. 4). Section 6 of Annex I spells out in more detail "how the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances" (UNFCCC, 2018a, p. 6), including a stipulation on "fairness considerations, including reflecting on equity", as well as how the Party has addressed paragraphs 3 (progression), 4 (economy-wide emission reduction targets for developed countries, and moving towards economy-wide emission reduction or limitation targets for developing countries) and 6 (least developed countries and small island developing states) of Article 4 of the Paris Agreement (UNFCCC, 2015). Section 4 of Annex I of the decision includes an element on "best practices and experience related to the preparation of the nationally determined contribution" (UNFCCC, 2018a, p. 5). While these elements are not mandatory for Parties, they provide facilitative guidance that Parties can use in preparing successive NDCs.

Secondly, the decision on matters relating to the global stocktake refers equity in several paragraphs and includes how NDCs are "fair" as an information base. Paragraph 1 recalls Article 14 of the Paris Agreement, while paragraphs 2 and 27 both make clear that equity is cross-cutting, i.e. equity will be considered across all themes and phases of the global stocktake. More operationally, Paragraph 36 outlines information elements that will be considered as sources of input for the global stocktake. These include "good practice experience and potential opportunities to enhance international cooperation on mitigation

and adaptation to increase support under Article 13, paragraph 5 of the Paris Agreement" (referring to the purpose of the framework for transparency of action) and "fairness considerations, including equity, as communicated by Parties in their nationally determined contributions" (UNFCCC, 2018c, para. 36(g) and (h)). The latter is salient to the analysis in this paper.

Furthermore, paragraph 37 provides that sources of input for the global stocktake include "voluntary submissions from Parties, including inputs to inform equity consideration under the global stocktake" (UNFCCC, 2018c, para. 37(g)). Beyond information inputs, the global stocktake has a technical consideration phase. Paragraph 5 refers to paragraphs 36 and 37, and thereby includes references to equity. Equity will thus be part of the technical dialogue and "expert consideration of inputs". The decision is least detailed on equity in the political phase, the consideration of outputs. Given that this will be a discussion among Ministers, the understanding is that relative fair shares are likely to be part of the discussion, but that it is not appropriate to prescribe how equity will be treated in detail. *Hence,* the analysis of fairness considerations provided in this paper are likely to be relevant to the global stocktake.

8. Impact of equity on Parties' ambition

Does equity enable ambition?

A definitive answer to this question cannot be determined on the basis of four case studies of domestic processes for preparation of NDCs, beyond to state that *it depends*. Nevertheless, comparisons of the case studies do shed light on some of the ways in which internal perceptions of international equity, as well as differing perspectives of stakeholders within the domestic context, influence climate response planning and NDC formulation.

Perhaps the most immediate example of differing internal perspectives comes from the EU, which distributes the mitigation NDC among Member States through existing internal effort-sharing practice. To the extent that effort-sharing led to higher energy efficiency and renewable energy targets among Member States, it can be argued that the NDC led to increased EU ambition. Furthermore, the case study and comparative analysis indicate the EU's continued desire to be perceived internationally as a 'climate leader'. In this regard, it could be argued that the EU took a 'proactive' approach to international considerations of equity, by referencing multiple indicators as well as compatibility with IPCC science in their substantiation of why their NDC was fair and ambitious. As the case study further elaborates, that the INDC was submitted relatively early, ahead of all but one other Party, further supports the view that the EU was perhaps aiming to set an example for other Parties, and to show that they were a frontrunner in mitigating climate change, irrespective of whether one considers emissions at aggregate level, or normalises emissions by population or economy.

Outward-looking perceptions of fairness can also be considered a major factor in the establishment of Canada's 2015 INDC. The Harper Administration determined the target set out in their INDC in the context of comparability with targets of other countries, thus showing clear concern about the perceptions of equity of Canada's contribution. Furthermore, it is notable that, in light of fairness considerations that were invoked by the Harper government when they previously withdrew from the Kyoto Protocol, it seems less likely that Canada would not have communicated an INDC, but for the prospect of the Paris Agreement being applicable to all. That the Paris decision was adopted in this format in 2015 gave impetus to the incoming Trudeau administration to further Canada's climate change response planning, *viz* developing the PCF. This process involved wide domestic participation, including from provinces, territories and representatives of indigenous peoples, as well as stakeholders from civil society and relevant industries and thus provided a platform for operationalising domestic equity considerations.

Overarching concerns however remain in Canada on implementability and economic impact of the PCF on the natural resources sectors, with the oil sector as a prominent example. These concerns continue to be amplified in part by the structure of the Canadian federation, which makes it difficult for a federal government to implement policies against strong opposition at provincial level, especially as far as oil is concerned. Thus, to the extent that equity arguments are invoked to say that no sector or region should be disadvantaged, domestic equity issues have the effect of limiting ambition in the case of Canada.

Considerations of what others were doing likewise motivated support among South Africa's government, and particularly among Ministers of key economic departments, for the NDC that was seen domestically as ambitious. South Africa's outward-looking perspective is fairly unique in that is analysed its fair share as a national carbon budget – with reference to SA experts as well as those from other BASIC countries; thus, international comparisons of relative fair shares are explicitly included in the NDC, and show that South Africa is aware that equity might require a more stringent national carbon budget than the one included in its first NDC.

As with Canada, however, South African policy-makers have to consider concerns from influential domestic groups about the economic impact of the NDC. For example, businesses

in South Africa's coal-dominated economy argue that the NDC should not affect its competitiveness negatively, and question the level of uncertainty with which South Africa's mitigation potential has been assessed; meanwhile the labour movement continually argues for a just transition. Both business and labour raise concerns over the implementability of the NDC, and of government's climate policy more broadly, as well as whether proposed mitigation measures may make it more challenging to overcome the country's more fundamental socio-economic challenges. Distributional issues within the country might thus temper the level of ambition.

On the evidence of the case study, outward-looking perceptions of fairness influenced Kenya's NDC similarly to Canada's INDC, i.e. to the extent that Kenya wanted to communicate an equitable share of the effort under a regime that is applicable to all. Like South Africa, Kenya placed its NDC in the context of its developmental objectives. The case study shows that while Kenya's NDC target was communicated based on an assessment of what is doable under this context, Kenya has also considered a much more ambitious, if aspirational, target, which would become more achievable with increased international support. Moreover, discussions on how to share the 'mitigation burden' domestically, during the development of the NCCAP 2 shifted the focus from international to domestic notions of equity.

Once again, implementability arises as a concern for Kenya, from the perspective of competing development challenges that the country has to tackle. Development priorities were a key factor in the decision by Kenya to reduce its aspirational target from 60 % in the Second National Communication to only 30 % in the NDC. As already noted above, the desire to exploit recently-discovered fossil fuel reserves, in order to enhance economic development, may further constrain Kenya's climate change response ambition. Similar to South Africa, the case study of Kenya also highlights a number of concerns on policy certainty and feasibility raised in arguments for why Kenya should not update its NDC.

Across the four case studies, it can thus be shown that the Parties pay attention to what others are doing, and have been driven to consider equity in their NDCs at least in part by the applicable-to-all nature of the Paris Agreement. The devil is in the detail, however, when it comes to distribution of the costs and benefits across domestic stakeholders; here, stakeholders' perspectives of feasibility, implementability and fairness in distributing benefits and costs have been shown to place some limits on ambition.

That is not to say that equity necessarily inhibits ambition. However, evidence from the four cases considered here do arguably lead to a hypothesis that Parties' are more inclined to invoke domestic equity concerns when hard interests are (or could be) affected, as is the case in mitigation and finance; whereas, when interests are less hard (or perceived to be), as in adaptation, then international norms play a greater role. This hypothesis would need to be tested in further work, and is beyond the scope of this report.

9. Conclusions

This report has presented case studies and a comparative analysis of the NDCs of four Parties to the UNFCCC – Canada, the European Union, Kenya and South Africa – with the purpose of analysing the extent to which equity played a role in Parties' domestic preparation of their NDCs.

Until now much of the literature had focused on equity considerations at an international level, with little analysis on how domestic actors, processes and political cultures influence what countries commit to on the global stage. Parties' domestic landscape is an important paradigm to consider in the context of the Paris Agreement, whereby Parties formulate their own NDCs based on national circumstances and priorities.

Such a balance naturally varies depending on the specific context of each Party, and in this regard the domestic political 'culture' of the Party was found to be highly important. Whether a Party has a federal or unitary government, or represents multiple other Parties with their own governments and governance structures, influences the approach that Parties take to formulate climate policy, as well as the extent to which Parties may encounter and have to address political opposition to their policies. Beyond government, each of the case studies showed that the perspectives of a varying selection of private and public economic actors had to be taken into consideration in the NDC preparation processes, with varied degree of influence that largely depended on the relative strength of those local actors; whilst the degree of influence of CSOs, NGOs, labour unions, indigenous peoples (in Canada), and other groupings varied between each Party.

A common finding across the four case studies is that domestic policy and planning tended to shape the mitigation targets of the Parties' NDCs, rather than the other way around. Mitigation NDCs were formulated largely on the basis of ongoing policy decisions and processes, and in the cases of the EU and South Africa were effectively a communication of existing longer-term (i.e. up to 2050) emission reduction or limitation targets for the time horizon of 2030. Whereas, in the cases of Canada and Kenya, the NDC process prompted the formulation of a mitigation target to 2030 that had not previously existed at national or federal level. Each case study also provides an example of how the NDC has, at least partly, provided impetus for the development of further climate change response planning and measures, *viz* (1) the development of the PCF as an NDC implementation plan in Canada; (2) enhanced renewable energy and energy efficiency targets across Member States in the EU; (3) development of the NCCAP 2, coinciding with Medium Term Plans for Economic Development in Kenya; (4) and the development of draft climate change legislation in South Africa. However, while all of these are positive developments, none of the four Parties have, as yet, updated the targets of their mitigation NDCs, and there has been little or no evidence across each case study to suggest these targets will be updated in or before 2020.

While there was little appetite for prescription on how to run domestic processes, facilitate guidance and sharing of experience on understanding how an NDC is fair could be considered useful. However, multi-lateral process continues to play an important norm-setting role. Provisions provided in the decision text from COP24 indicate that equity will be part of the five-yearly global stocktake, as provided in Article 14 of the Paris Agreement, and this is likely to influence countries as they prepare successive NDCs. Analysis of fairness considerations in this paper are therefore likely to be relevant to the global stocktake.

As might be expected of four quite different Parties, the scope of their NDCs varied considerably. Whereas the two NDCs from developing countries – Kenya and South Africa – included adaptation and means of implementation, the scope of the NDCs of Canada and the EU are limited to mitigation only, although the EU submitted a separate undertaking on adaptation to the UNFCCC in 2015, and Canada mentioned adaptation in its 2017 NDC submission; adaptation is covered in more depth in the PCF. Nevertheless, the comparative analysis showed that equity considerations of adaptation were far more prominent in the NDCs of Kenya and South Africa, and that understanding of equity in relation to adaptation

is limited by comparison to mitigation. It is likely that this finding is applicable beyond these four Parties alone.

Broadly it can be argued that equity does enable ambition, in the context of the four Parties examined here. As discussed in the previous chapter, international considerations were found to be a motivating factor for the Parties to develop NDCs that are ambitious, or at least perceived as such. International considerations of equity are however tempered by domestic issues, on the grounds of domestic actors' views on implementability and the equitable (or otherwise) distribution of benefits and costs across stakeholders. The balance of forces across different domestic stakeholders is thus found to plays a critical role in the overall development of the four Parties' NDCs – particularly when setting their mitigation targets.

While it cannot be definitively concluded that equity enables or limits ambition outright, evidence from the four case studies and comparative analysis thereof suggests that equity is, and will continue to be, a key consideration in Parties' climate policy developments, and specifically in their preparation of successive NDCs. Further work is however needed to explore this question in greater depth, which should include a more comprehensive sample and rigorous selection of Parties, and more detailed analysis of the circumstances under which Parties may be driven primarily by national interest, or more receptive to international norms. Such work would be highly important and relevant, as considerations of equity, both at international and domestic level, will continue to be crucial in future negotiations on meeting the Paris Agreement objectives, and moving the global response to climate change forward.

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Annexure A: Guiding questions for case study interviews

1. Processes leading to the preparation for updating of your NDC / preparation of the INDC
    - Is your country planning to update its NDC or submit a new one in 2020? If yes, are there processes under way, or when are they expected to start?
    - Can you briefly describe the process as you have experienced it and your role in it? Specifically, what interactions with stakeholder have taken place, were other departments involved in it, was there an intergovernmental piece or interaction with stakeholders, what was the interaction between political level and bureaucracy like, what kind of scientific and economic sources and considerations were considered.
    - [Follow ups on]
        i. Stakeholder engagement
            1. Consultations within national government
            2. Provinces, territories, municipalities, or Member States (case of EU)
            3. Industry/Business
            4. Civil society / Indigenous communities / Labour unions
        ii. Nature of interaction between political level and bureaucracy
            1. Nature and breadth of advice given to political level
                a. Role of science in target setting (i.e. consistency with global temperature limitation objectives/emissions pathways)
                b. Role of equity in target setting (for INDC mitigation target)
                i. "fair share"
                1. Political: to what extent does the country care about relative fair shares?
                2. Technical: type of target (form) and level of M-ambition (stringency)
                3. Indicators/criteria for both
                ii. Effort-sharing interprovincial/between Member States
                iii. Equity between economic sectors in target achievement
                iv. Other considerations of equity in target setting?
                v. Comparability of effort to other countries? (what kind of countries?
                vi. Timing
                c. Considerations of achieving the target
                i. Was consideration of policy options for target attainment part of the target setting conversations (or considered internally by bureaucracy?)
                ii. Economic modelling?
                iii. (in case of EU: burden sharing among countries)
    - Adaptation:
        i. For EU and Canada: To your knowledge, were there discussions regarding the inclusion of adaptation in the INDC?

    ii. What equity arguments were used in relation to the adaptation NDC / undertaking / communication?
    iii. Were metrics such as vulnerability used?
- Means of Implementation:
    i. For EU and Canada: to your knowledge, were there discussions on whether providing funding was part of the contribution (whether included in the INDC or not)? Why (not)?
    ii. For Kenya and South Africa:
        1. Was support needed for adaptation raised? As an equity argument?
    iii. Criteria from previous papers
        1. Impacts
        2. Vulnerability
        3. Who pays for adaptation

- Political structure and culture of each country
    i. Canada PCF
    ii. EU burden-sharing
    iii. Kenya Climate Act
    iv. South Africa – carbon tax, IRP
- Domestic measures for climate action,
    i. noting the requirement for countries to pursue domestic mitigation measures (Art 4.2 of Paris Agreement)

2. New and revised NDC
    - [reference ministerial declaration; potentially para 24, 1/CP.21]
    - International equity and ambition: is equity enabling ambition, e.g. others are also updating/doing more, so we can go a bit deeper or is target setting independent of such considerations
    - Any processes already anticipated/planned
    - Role of finance in these reconsiderations
    - Considerations of equity in target setting? Consultations?
    - Does Paris inclusion of the 1.5 °C goal play any role
    - Role of adaptation in revised NDC

Annexure B: Bangkok Workshop

Workshop discussion on the approach, methodology and early findings of a research paper funded by the Swedish Energy Agency held during the United Nations Climate Change Conference.

Date: Tuesday, 4 September 2018

Time: 18:15 – 19:45

Venue: Theatre Room, UN Conference Centre, Bangkok, Thailand

List of attendees available on request

Workshop report back

The group was smaller than had originally been planned. Invitations had been issued to more than 20 potential participants (including through virtual participation online), but a number of the invitees indicated they were not attending the Bangkok Climate Conference.
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Nevertheless, a fruitful discussion was held among the small group that did participate, and the workshop became more intimate and conversational, rather than following the more formal agenda as outlined prior to the event. The group comprised researchers and experts with multiple years of experience in the field of climate equity.

It should be noted that much of the discussion was focused around the experiences and findings, so far, for the case studies of South Africa and Canada, since the authors for these respective case studies were present at the workshop. Discussion on the case studies of Kenya and the European Union were more limited.

Implications for the Global Stocktake

A key objective of this work is to determine whether, and to what extent, Parties may want guidance for preparing their nationally determined contributions (NDCs). This extends to establishing whether criteria should be considered, and what criteria could potentially be specified, for guiding Parties in explaining and elaborating on how they consider their NDCs to be fair and ambitious.

The workshop discussion noted that such guidance could facilitate a more uniform, methodical approach to understanding equity, as Parties prepare for Round 1 of the Global Stocktake in 2023. This would serve to supplement the relatively little amount of guidance on the information that should be provided in NDCs that has been offered up until now, which is thus far limited to paragraphs 27 and 28 of the Paris Agreement.

A key distinction should however be made between offering guidance and attempting to mandate or otherwise prescribe how Parties shall develop their NDCs. Countries are likely to reject any proposal that calls for mandating any elements of the development of NDCs, since this would seem to be contrary to the principle of 'nationally determined' contributions. Indeed, such views were strongly held and reaffirmed by various Parties, during informal sessions on the Paris Agreement Work Programme at Bangkok.

Nonetheless, it was observed that many Parties, when preparing their *intended* nationally determined contributions (INDCs), appeared to interpret the text of the Lima Call for Climate Action (1/CP.20 para 14[33]) in a somewhat prescriptive manner, with many Parties

33 The text of 1/CP.20 para 14 and 1/CP.21 para 27 is identical, except that the latter refers to nationally determined contributions, while the former refers to *intended* nationally determined contributions (the 'intended' falls away after the Paris Agreement entered into force in 2016).

including information in their INDCs in loose accordance with many of the elements included in the paragraph. Therefore, guidance could be considered useful to Parties, if it were framed in such a way as to offer 'best-practice' suggestions or examples of how equity is operationalised in Parties' internal contexts. This could ultimately lead to more systematic development and implementation of NDCs, and the emergence of 'best-practice' approaches for operationalising and accounting for equity in the context of the Global Stocktake.

Different approaches by different countries

Much of the discussion centred on the theme of the research paper, and specifically how different countries take different approaches to equity when formulating climate policy, pledges and targets (as codified both in NDCs and elsewhere – see e.g. discussion on Kenya below). Different Parties have to balance various 'mixes' of stakeholders and their interests, and governments and policy-makers give varying levels of 'priority' to those interests.

The extent to which different (government) actors influence the domestic process varies from country to country, and invariably depends on the unique political culture within that country. The example of Canada was highlighted, whereby different organs of state were responsible, respectively, for (a) determining and implementing climate policy, and (b) drafting the NDC (and Pan-Canadian Framework).

Feedback from the workshop indicated that such differences would be experienced across most countries. A limitation of the present-study, as has been raised previously, is that the selected case studies provide a very small sample of all the countries who have submitted NDCs, with countries from key geographic regions and UN negotiating blocs not represented in the paper. This study cannot therefore provide a comprehensive analysis of worldwide approaches domestic NDC preparation. It can however offer an informative comparative analysis from the four case studies that are included, by identifying the similarities and differences between each case, and drawing on the (mostly qualitative) metrics outlined through the research questions (elaborated through the interview questions – see Annex A and B respectively).

Addressing 'winners and losers'

One key area of discussion that emerged, both within the workshop and throughout the conference week, was the issue and concept of a 'just transition'. At a domestic level, each country essentially must balance different interests from various stakeholders or interest groups. Governments have to determine a level of climate action that is ambitious enough to deliver the country's (perceived or justified) fair share of the global effort, which balances the interests of the different stakeholder groupings and establishes a domestic societal consensus, without resulting in too many 'losers' (i.e. stakeholders for whom such climate action would have negative implications). Thus, an often-delicate political compromise is sought during the domestic preparation process, balancing climate policy ambition with 'conflicting' interests from other stakeholder groups.

Examples from Canada were raised again, concerning the level of negotiation and compromise that has taken place between Canada's federal government, and the provincial government of the province of Alberta, in particular. Historically, a compromise has had to be established between the federal government's climate mitigation objectives (e.g. under the Kyoto Protocol, and more recently the Paris Agreement) and accommodation of Alberta's extraction and use of tar sands oil, and other fossil fuel industries. Such issues remain a key political factor in the development of Canadian climate plans, including the Pan-Canadian Framework (established under the current Trudeau administration as an implementation for Canada's revised NDC).

Recent experiences in South Africa illustrate some potential pitfalls of not engaging across stakeholder interests. In 2017 the Coal Transportation Forum, which has support from coal sector labour unions in South Africa, sought a court order to interdict government from implementing its renewable energy IPP procurement programme (REIPPPP). Similarly, in

early 2018, court applications were filed by the National Union of Metalworkers of South Africa (NUMSA) and Transform RSA, a political lobby group[34], to prevent the signing of power purchase agreements (PPAs) with 27 IPPs for renewable power capacity projects. A common believe amongst these groups is that (private) renewable energy poses a threat to workers in the coal sector and, by extension, the surrounding communities and local economies supported by those workers. Such groups in turn have the capability to severely disrupt South Africa's mitigation efforts. Their legitimate concerns therefore need to be heard, addressed and actively considered in the formulation of climate mitigation strategy and policy. Through this example, it can be seen that the issues of equity have fairly close linkages with the emergent just transition concept.

Another example of the importance of the political balances was raised with reference to India, as an example of a case in which climate policy objectives have to be determined in the context of the country's development priorities, including provision of adequate housing and transportation to those living in poverty.

Baseline adjustments

Another issue raised concerned the transparency around baseline determinations, and whether and how such baselines could be adjusted in future iterations of NDCs. This issue is more pertinent for countries whose mitigation NDCs target a reduction of emissions below a business-as-usual (BAU) trajectory; the concern being how BAU is defined, and how it might evolve in future years.

The example of South Africa was again noted. Previously, South Africa had pledged emissions reduction targets below BAU by 2020 and 2025 respectively; the NDC, which targets a peak, plateau and decline (PPD) trajectory range for 2025 and 2030, is understood to be a progression of the previous pledge, and a move away from a BAU-type target. However, even under this context, recent analysis performed by experts in South Africa has shown that, based on existing data and projections, a least-cost pathway for energy development to 2030 would result in an emissions trajectory that is lower than the upper bound of the PPD trajectory for 2030. A key question then becomes whether South Africa could target a more ambitious contribution in a further NDC iteration, and how would equity considerations play out and affect such considerations.

This issue brings to light a prominent feature of South African political culture – albeit not unique to South Africa – of the relationship between business, industry and government, in the context of formulating national policy, and climate policy in particular. A considerable and concerted government lobbying effort is made by actors and associations that represent industrial sectors such as petrochemicals, minerals, heavy industry, and coal power generation. The prevailing perception is that these interests often surpass those of other stakeholders, such as labour unions and civil society, and were seemingly prominent in the formulation of South Africa's national climate change response policy, and the NDC subsequently. It is hypothetically probably that these groups would be opposed to more ambitious climate targets, and would argue their position on the grounds of equity against further action (over and above what they have already 'accepted').

The case study of Kenya provides another example. Early analysis of Kenya's NDC showed that potential future emissions resulting from the exploitation of recently discovered fossil fuel reserves (oil, natural gas and coal) were excluded from, and not mentioned in, the NDC. The issues have been raised in domestic discussions on implementation and updating of the NDC, but with some stakeholders suggesting they should only be included under adaptation. The question in this case arises as to whether a new baseline for Kenya would include

34 Referenced, for example, in a media report issued by Engineering News in April 2018 (http://www.engineeringnews.co.za/print-version/radebe-says-signing-of-27-ipp-agreements-a-new-dawn-for-renewables-2018-04-04)

potential emissions from utilising these reserves, and how this then affects Kenya's mitigation and adaptation pledges.

Transparency

The final part of the discussion focused on how the enhanced transparency framework, as established under Article 13 of the Paris Agreement, could potentially act as an equity driver for Parties developing their NDCs, insofar as it could promote further ambition from developing Parties, who in turn could access more support from developed Parties. In this regard, two initial findings from the case study of Kenya were raised, to offer some insight into possible paradigms around this issue.

Firstly, the case study showed that Kenya's mitigation NDC target, of a 30 % reduction of emissions below BAU levels by 2030, represented half of the target that was expressed in Kenya's Second National Communication (60 %), submitted to the UNFCCC in 2015. It was noted that the primary justification for this difference was that the Second National Communication presents an aspirational target, whereas the NDC presents a 'doable' target. The questions that arise from this are whether the aspirational target is therefore more contingent on the provision of support to Kenya, and further whether consistent baselines are used in the BAU projections referenced in each document.

Secondly, early case study findings showed that there are ongoing discussions, at a ministerial level, on the development of a monitoring, reporting and verification (MRV) framework in Kenya, with a point of difference seemingly arising on how detailed the MRV framework should be. On the one hand, there are some concerns about how more detailed MRV would make it easier for Kenya to be 'pinned down' for non-compliance. On the other hand, more detailed MRV would enable Kenya to have access more targeted climate finance and means of implementation support; creating this transparency is seemingly the purpose of Article 13. The consensus of the discussion was that, ultimately, the effectiveness of the enhanced transparency framework would depend on the political will amongst developed Parties to offer the support that would be identified as necessary by developing countries, through any form of enhanced MRV.

Conclusions

It was generally felt, by those in attendance, that the research being undertaken through this project was of merit, and would provide some valuable additional insights to the body of work on climate equity. Particularly helpful suggestions of findings from experiences in other countries were offered, particularly in the cases of India and Mexico. Ultimately, it was felt that it would be useful at some stage to expand the case study analysis to continue these and other countries, to gain a wider understanding of emerging domestic processes around equity.