Policy Brief

September 2016
PB-16/25

The Road to Marrakech: Key Issues for COP22

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Summary

Climate change is an increasingly integral part of our reality. Over the coming decades, global warming will affect our socio-economic development, human health, our availability of food, water along with our ecosystems and wildlife, more than we are likely able to imagine. The Paris Agreement, adopted last year in December at 21st session of Conference of the Parties (COP 21) by 196 parties (195 countries and the European Union) to the UN Framework Convention on Climate Change (UNFCCC) constitutes by the views of many a landslide agreement in global efforts to mitigate climate change, as well as prepare societies through adaptive action to the likely negative consequences we are yet to encounter even if mitigation efforts succeed in limiting global warming to the below-2°C target.

With COP 22 in November 2016, the parties to the UNFCCC return with their next round of negotiations to Marrakech, the second time the conference is held in Morocco. The critical importance of this meeting for the proceedings after Paris cannot be understated: Marrakech will be the time to clear the road for the implementation of the Paris Agreement, in setting in place those mechanisms and modalities that help the Agreement to become operational. Among the key issues to be addressed in Marrakech – including data transparency, capacity building and the provision of climate finance to developing countries – will thus also be the fundamental question of timing. With considerable progress in the ratification of the Paris Agreement this year, an obvious, overarching question of this year's meeting will be the time at which the Agreement will likely become operational – the original timeframe of 2020 could in principle be feasible to be shifted to an earlier date in line with these recent developments. For the Paris Agreement to enter into force, the ratification of 55 signatory countries that represent 55 percent of emissions of greenhouse gases is required. At the time of writing, 57 countries have indicated their intention to ratify the agreement before the end of 2016.[2]

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Marrakech also brings climate negotiations back to a region that is itself highly vulnerable to global warming, but also has a lot to gain from the successful implementation of the Paris Agreement. Morocco itself

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2. Climate Home, 18 August 2016.

has in recent years topped up its renewable energy capacity considerably, a model that may be attractive for other North and Sub-Saharan countries as well. Morocco also stands for the very large opportunity in regions with significant, clean energy resources such as solar power/CSP in the case of North Africa to make a substantial contribution to emissions reductions in the medium- and long-term, provided the right incentives are set and barriers to investment in renewable energy technologies reduced. Importantly, using Marrakech as an opportunity to offer developing countries chances to invest in climate mitigating technologies, and to reinforce technology transfer into these countries could have significant developmental and in the longer term economic benefits, for all sides. This Policy Brief explores some of the key agenda points for the road to Marrakech.

Five Priorities for COP 22

1. Enhancing climate action

Key to making the Paris Agreement successful is the implementation of practical climate action – operationalizing the Paris Agreement but also working out ways in which its signatories can realistically expect to meet, and exceed their own targets. This is no small task, particularly in developing countries beyond those that make the headlines. Morocco, the host country of this year's COP, epitomises the vulnerabilities not only of many parts of the Arab world, but indeed of developed and developing countries to climate change in its various manifestations including more extreme temperatures, more extreme precipitation and more frequent occurrences of droughts, ocean acidification and sea level rise, and the associated consequences for human life such as degradation of land and water resources, drought-stress in already drought-prone regions such as Africa, reduced crop productivity, increased pest and disease damage and flood impacts on food systems and infrastructure, among many more.[3] A recent study further highlighted the link between natural disasters caused by climate change and violent conflict – adding further urgency to the cause of climate change mitigation and adaptation across the world.[4]

Additional pressure arises from time constraints and the lagging of national progress in Paris Agreement-related climate action whilst the modalities of the Agreement are yet to be determined over coming rounds of negotiations. Delaying mitigation efforts in particular will increase mitigation costs over the medium- to long-term – a catch-24 situation in view of the parallel challenges of speeding up climate action while ensuring all UNFCCC parties agree to every aspect of the operation modalities that are to form part of the Agreement. Marrakech will hence be a testing ground for enabling and pushing countries for climate action in the pre-2020 period, before the Agreement is expected to come into effect.

Climate change mitigation. Climate change mitigation lies at the heart of the Paris Agreement; the Intergovernmental Panel on Climate Change (IPCC) defines mitigation as a human intervention to reduce the sources or enhance the sinks of greenhouse gases.[5] Signatories to the Agreement have submitted own Nationally Determined Contributions (NDCs) in preparation of the meeting, committing to reduce their GHG emissions by a certain level through a variety of actions. All parties must hereafter prepare, communicate and maintain NCDs that are expected to form a progression from their original targets over time (Art. 4.4). NDCs are mitigation actions and emission limitation objectives that a national government intends to take. All parties must also report biennially on their national emissions and progress in implementing their national mitigation measures to the UNFCCC, evaluation of which will ensue multilaterally. This is a tall order for many countries and requires dedicated institutional capacity able and mandated to deal with the collection and reporting of data, but equally important with the design and implementation of national strategies to systematically reduce the emissions-intensity of their economies over time.

Morocco as the host country of this year's COP 22 stands exemplarily for the challenges, but also opportunities associated with implementing climate targets into quantifiable action. In September 2015, France and Morocco launched and signed the "Call of Tangier" on climate change, a brief manifesto expressing their mutual concern about the many negative impacts of climate change and calling for the speeding up of the transition towards a "green global economy". Morocco's 2011 Constitution enshrined sustainable development as a fundamental right for all citizens; and has adopted the National Charter for Environment and Sustainable Development. While these steps alongside the signing and ratification of the Paris Agreement constitute important framework conditions for climate action, they are actually not the same of practical plans of action,

3. IPCC (2014b).
4. Schleussner et al. (2016).
5. IPCC (2014a: 4).

leaving governments and their citizens to work out how to move on from initial targets.

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Morocco, too, has submitted its own NDCs, along with 168 other countries.[6] The country's own emissions profile has been growing, as has been the emissions- and energy-intensity of its GDP – a trend observable also in other parts of North Africa and the Middle East as a whole. Morocco itself has hence linked its mitigation targets to the transformation of its energy sector – its main source of GHG emissions – although with important interventions in other sectors including agriculture, water, waste, forests, energy, industry and housing (see Box 1). Morocco also intends to develop a national plan to combat short-lived climate pollutants (SLCPs), with support from the Climate and Clean Air Coalition. As part of this process, Morocco aims to develop SLCP emission inventories and assess the benefits of reducing SLCPs for climate, health and agricultural production.[7] Reducing SLCPs- which are black carbon, methane, tropospheric ozone, and hydrofluorocarbons- is essential

Box 1. Morocco's mitigation targets as submitted under its INDCs to the UNFCCC, June 2015

"Morocco's commitment is to reduce its GHG emissions by 32 % by 2030 compared to "business as usual" projected emissions. This commitment is contingent upon gaining access to new sources of finance and enhanced support, compared to that received over the past years, within the context of a new legally-binding agreement under the auspices of the UNFCCC. This target translates into a cumulative reduction overall investment in the order of USD 45 billion, of which USD 35 billion is conditional upon international support through new climate finance mechanisms, such as the Green Climate Fund."

Mitigation targets

- Unconditional target: A 13% reduction in GHG emissions by 2030 compared to a business as usual (BAU) scenario.
- Conditional target: An additional 19% reduction achievable under certain conditions, which would bring the total GHG reduction to 32% below BAU emission levels by 2030.

Expected emissions trajectory

- To reach 113 Mt CO2eq in 2020 and 129 Mt CO2eq in by 2025, decreasing 7% and 10% compared to BAU emissions in 2020 and 2025;
- To reach 103 Mt CO2eq in 2020 and 104 Mt CO2eq by 2025, decreasing 16% and 27% compared to BAU emissions in 2020 and 2025.

Specific targets for the energy sector

- Provide 42% of the installed electrical power from renewable sources (of which 14% solar energy, 14% wind energy, and 14% from hydraulic energy) by 2020
- Achieve 12 % energy savings by 2020 and 15 % by 2030, compared to current trends
- Reduce energy consumption in buildings, industry and transport by 12 % by 2020 and 15 % by 2030.
- Install by 2030 an additional capacity of 3,900 MW of combined-cycle technology running on imported natural gas.
- Substantially increasing the use of natural gas, through infrastructure projects allowing liquefied natural gas (LNG) imports.

Source: UNFCCC (2015)

6. WRI (2016).
7. UNFCCC (2015).

for slowing the pace of global warming in the near term.

There are also substantial opportunities associated with mitigation measures that function not only in view of reducing the long-term carbon footprint of countries, but can also contribute significantly to economic growth and socio-economic development and greater access to opportunities. These concepts include:

- Investment in public infrastructure and transport, contributing to sustainable mobility, including in urban-rural transport;
- Sustainable and resilient city planning, including public investment incentives and regulatory reform to standardise urban building stocks and provide greater access to clean energy, including to the poorest;
- Climate-smart land-use, the more systematic management of natural resources inside the water-food-energy-environment nexus; and
- Overall "green" growth, including where appropriate the creation of competitive innovative centres of technology and research, which in turn can contribute to the creation of jobs for new generations of educated youth, including in many parts of the developing world.[8]

Conceptualising climate-friendly development as an economic opportunity now and in the future rather than merely a way of accounting for GHG emissions will be a principal tool to help countries reconcile climate targets with developmental priorities in the her and now.

A number of existing schemes and concepts that could be used in their current or adapted format to encourage climate mitigation will also be likely to be further negotiated in Marrakech and subsequent meetings. They include emissions trading, a key feature of the Kyoto protocol – in practice used in the European Emissions Trading System (ETS), some regional schemes in the U.S. and pilot schemes in China.[9] They also include Joint Implementation (JI) and the Clean Development Mechanism (CDM) projects, both of which featured in the Kyoto Protocol, the latter of which having funded various projects in developing countries including in Morocco and the wider Arab world. Morocco, like a number of other developing countries, have specifically added to their mitigation targets a set of conditional targets, clearly signalling the need for sufficient climate finance in order to reach more ambitious targets (Box 1).

Other schemes have not yet been touched upon, but could feature in the debate around nationally appropriate measures, including carbon caps, and reform in national fuel and electricity subsidies.[10] Marrakech could also provide an opportunity to discuss the future use of these mechanisms, and to explore future schemes that assist the very wide range of different national circumstances in shouldering the financial burden of the climate transition between different actors.

Climate change adaptation. Adaptation strategies are the other key area in which work over the coming years will be critical to reducing the vulnerability of countries across regions to climate change. Adaption measures seek to reduce vulnerability, and to facilitate adjustment to expected climate and its effects.[11] They are a follow-up task that includes a vast array of policies that are highly specific to each country's own geographic and socio-economic context, from disaster risk management, adjustments in (public) infrastructure and technology, coastal and water management, environmental protection and land planning, to conservation management, reforestation and community work. The Paris Agreement calls on parties to the UNFCCC to "engage in adaptation planning processes and the implementation of actions" (Art. 7.9), as well as to report on progress every five years (Art. 4.9).[12]

«In Morocco nearly 9% of the state's overall investment expenditures in 2005-2010 has been channelled into adaptation measures»

Morocco as the host country of COP 22 has included a list of polity goals for adaptation measures for the period of 2020-2030 in its INDCs as submitted in June 2015 (Box 2). Close two-thirds of the country's climate-related spending, or nearly 9% of the state's overall investment expenditures in 2005-2010 has been channelled into adaptation measures – an investment allocation which the Moroccan INDC states "demonstrates the magnitude of the challenges facing Moroccan society."[13]

8. E.g. World Bank, IFC, and MIGA (2016). For a discussion of green growth opportunities specifically in the Middle East and North Africa, see Oxford Institute for Energy Studies (2015).
9. Mitchell (2016).
10. E.g. Bridle and Kitston (2014); Merrill et al. (2015).
11. IPCC (2014b).
12. The full agreement can be accessed online under the UNFCCC's website at http://unfccc.int/paris_agreement/items/9485.php (accessed July 2016).
13. UNFCCC (2015); see also World Bank (2013).

Box 2. Morocco's adaptation plans (selection) as submitted under its INDCs to the UNFCCC, June 2015

Goals for 2020

- Substitution of water withdrawal from overexploited aquifers by withdrawal from surface water (85 mn m3/yr)
- Increase the current area under drip irrigation (from currently 154,000 ha to 555,000 ha)
- Reconstruction of forests (200,000 ha)

Goals for 2030

- Desalination of drinking water to supply several cities and centres
- Reuse of treated wastewater
- Construction of 38 new dams and development of an inventory and the treatment of all sites vulnerable to flooding
- Connection to sewage system and wastewater treatment to reach 100% of urban areas
- Wastewater treatment to reach 100%
- Savings of irrigation water (2.4 bn m3/yr)
- Conversion of grain crops (nearly 1mn ha) to fruit plantations to protect agricultural areas from erosion
- Treatment to prevent erosion (1.5 mn ha over a period of 20 years)

Source: UNFCCC (2015)

The magnitude of the challenge is indeed significant, not only because of the complexity of adaptation – to be determined for each national context – but also because estimating the cost of adaptation remains a difficult task. A recent UNEP report notes that "there is no single estimate of the costs of adaptation"[14] although it reasons that

> ***"[T]he costs of adaptation are likely to be two- to-three times higher than current global estimates by 2030, and potentially four-to-five times higher by 2050."***[15]

2. The Enhanced Transparency Framework

One of the key elements of operationalizing the Paris Agreement is the creation of an enhanced transparency framework, which will set the parameters for the reporting and review of all countries' climate plans and actions.[16] Transparency is a particular priority item for developing countries, which lack well-established monitoring, reporting and verification processes or whose reporting practice requires further development. Both historical and current data collection may be missing, as can be institutional capacity to collect and evaluate data in the future.

Since part of the Paris Agreement's implementation mechanisms will involve regular 'stocktaking' on global scale – to start from 2023 to be repeated every five years – as well as evaluating individual countries' progress towards achieving their NDCs, and available, reliable and transparently collected data will play a pivotal role in providing all parties with a clear understanding of climate action taken and national objectives being met. Part of finding suitable mechanisms to support data transparency across UNFCCC parties could actually involve 'borrowing' from the experience of parallel data inter-governmental projects from within the energy sector, for instance projects such as JODI, the IEF's Joint Oil Data Initiative, which has aimed to increase transparency on oil and fossil fuel-related data. A separate but very important issue are obligations by developed countries that are parties to the Agreement to report climate finance contributions, to ensure pledges are followed up with available funds for developing countries. Climate finance is one of the key areas where increased transparency is of immediate priority. An OECD report

14. UNEP (2016: xii).
15. UNEP (2016: xii).
16. Luomi (2016).

published prior to the COP 21 in Paris that estimated total volumes of climate finance mobilised by public and private sector sources in 2013-14[17] was later on heavily criticised, among other things for "double-counting, mislabelling and misreporting climate finance"[18] by a "club of rich countries".[19] With existing controversies around the accounting of and definition of climate finance itself, this is an area of immediate concern. Marrakech, as well as follow-up meetings are a key opportunity to address underlying methodological issues inside climate finance, and to bring all signatories to the Paris Agreement to a common line over the issue.

3. Climate finance

Marrakech offers an important opportunity to further discuss and design suitable and accessible modalities for collecting and channelling available climate funds into appropriate projects inside developing countries. Climate finance may indeed be seen as one of the most critical aspects – some would argue the most critical aspect – of facilitating climate change mitigation and adaptation. This is not only so in developing countries where climate action in many case depends on financial assistance from abroad; but more generally so because, as some observers have argued, the focus of many climate change scholars has become to follow the "money-trail".[20] Heffron (2016: 10) captures the argument of one side of the "climate camp", arguing:

> ***"There remains too much money in the fossil fuel industry. This is the big battle society is facing and a transformative shift, in terms of how we govern the energy sector and indeed the greater economy, is required."***

The Paris Agreement includes provisions on the support of developing countries' NDCs, although in so far broad terms with no immediate mechanism beyond what is already in place. It also confirms developed countries' existing pledge from Copenhagen to mobilise some $100 bn per year in climate finance in the period of 2020 up to 2025, to be followed by a new collective target sum thereafter; progress with the dispersal of this sum is to be reported biannually. A recent UNEP report emphasises the difficulty of adequately estimate the costs for global adaptation to climate change, but suggests needed financial resources could be three times higher for the period of 2010 – 2030, and four to five times higher in the period up to 2050; indicating that the costs of adaptation could range from US$140 billion to US$300 billion by 2030, and between US$280 billion and US$500 billion by 2050.[21]

«Cop22 could be an opportunity to provide developing countries with more effective tools to invest more into clean energy in line with UNFCCC objectives, but could also demonstrate developed countries' real commitment to climate change mitigation»

To support the availability of climate finance, increasing emphasis is placed also on local private sectors. Supporting private sector investment in climate-friendly technology and adaptation remains particularly in developing countries a major challenge, however, due to a whole range of known factors including legal, economic and regulatory hurdles, immature financial markets, currency exchange and general country risk.[22] Conflict-affected countries will struggle further due to the absence of political stability to start with, leaving many countries in need of adaptive measures behind. But there is also much potential, including by providing governments with the toolkits to break down domestic barriers to climate investment, and by demonstrating opportunities related to green finance and investment, including in terms of technology transfer, innovation, and the creation of new, knowledge-based industries and the creation of skilled jobs. Marrakech could offer an important forum to provide a framework for discussion as well as the creation of channels of practical in national capacity building towards this goal.

Morocco itself stands for the opportunities of supporting climate-friendly, renewable energy technology deployment at large scale in developing countries and regions with an abundance of such resources. In the past Morocco has taken on to accelerate the global deployment of Concentrated Solar Power (CSP), which offer the potential to reduce CSP capital costs through manufacturing economies of scale and learning effects. For this reason, the Clean Technology Fund has allocated significant subsidised financing to CSP in Morocco, although not enough to cover all of the incremental cost of using CSP.[23] More available capital finance could be one way to keep supporting such investment, the other

17. OECD (2015).
18. Roy (2015).
19. MOF (2015).
20. Heffron (2016: 10).
21. UNEP (2016: xii).
22. E.g. UNEP (2016).
23. Author's conversation with Jonathan Walters, August 2016.

option being the opening of and reduction of trade barrier on key export markets – in this case Europe – to clean electricity from North Africa. Using Marrakech as an opportunity not only to collect funding, but also to reduce trade barriers and allow green energy free access to markets could not only provide developing countries with more effective tools to invest more into clean energy in line with UNFCCC objectives, but could also demonstrate developed countries' real commitment to climate change mitigation.

4. Capacity building

Capacity building in developing countries is an integral part of making climate change mitigation and adaption work around the UNFCCC's diverse member states. The Paris Agreement established Paris Committee on Capacity-building with the central objective of addressing gaps and needs of developing countries, and established an own committee for capacity building. Parties to the Paris agreement differ in terms of their development status as well as their capabilities, which is why capacity building is delivered as part of the UNFCCC framework both bi- and multilaterally. A series of activities under the Convention include thematic dialogues and technical advice and support for strengthening institutions as well as the private sector, following the Framework for Capacity Building in Developing Countries that forms part of the Marrakech Accords at COP 7 in 2001.[24]

«Capacity building is delivered as part of the UNFCCC framework both bi- and multilaterally»

In its own INDC submission, to the UNFCCC, Morocco maintains that "…The implementation of the INDC requires an unprecedented mobilization of Moroccan society and international financial partners."[25] This is an important sub-aspect of operationalizing the Paris Agreement in a number of countries and could warrant considerable efforts by the international community to help developing countries build this kind of capacity. In order to facilitate this mobilisation, Morocco in September 2015 set up the Moroccan Competence Centre for Climate Change (Centre de Competence Changement Climatique du Maroc, 4C Maroc), which is aimed to provide a capacity-building and information-sharing platform on climate change for Morocco, with regional and African outreach.[26] Similar centres of excellence could be build up elsewhere, but will also need to be staffed and given the necessary mandate to contribute towards national planning, auditing and reporting through adequate tools.

Box 3. Morocco's experience in rural electrification using hybrid systems

Morocco's government has since the 1990s taken proactive steps to provide remote rural communities with access to electricity – using a combination of technologies making use of all available local resources. The country's Programme d'Électrification Rurale Global (PERG), first launched in 1996 when estimated rural electrification rates were as low as 18 per cent, specifically catered to a range of village needs based on the long-term commercial viability of village- based electricity access. In areas where the connection to the grid was deemed uneconomical, the programme reviewed local conditions to assess the viability of alternative solutions such as photovoltaic (PV) generators, small hydro turbines, wind turbines, diesel generators and hybrid systems. Over a period of 15 years, more than 35,000 villages and some 1.9 million rural households were electrified, lifting rural electrification rates to 97 per cent by 2009.

Source: El-Katiri (2014a, b); Agence Française de Développement (2013)

5. Technology transfer

Climate change mitigation is driven by technology that enables countries to make better use of their available resources, increase the efficiency of the way it exploits energy in particular, while enabling growth and socio-economic growth. Renewable energy is an obvious central point that deserves much greater focus in developing countries' policy agendas in particular.[27] Issues include known challenges in renewables deployment such as financing costs, the typical need for regulatory and market-related changes, public-private cooperation, but

24. United Nations Framework Convention on Climate Change (UNFCCC). 2001. Decision 2/CP.7 and Decision 3/CP.7. See Dagnet et al. (2015).
25. UNFCCC (2015).
26. United Nations Framework Convention on Climate Change (UNFCCC). 2001. Decision 2/CP.7 and Decision 3/CP.7. See Dagnet et al. (2015).
27. E.g. IRENA (2015).

also the mobilisation and transfer of know-how to adapt existing technologies to national circumstances and examine national niche technological applications, for instance rooftop panelling as a way of providing energy access to rural populations (see Box 3 for the example of rural electrification using hybrid systems in Morocco) or the use of solar technology for non-typical uses such as desalination and enhanced oil recovery. Marrakech offers an opportunity to discuss these opportunities in greater detail.

«Marrakech is also an opportunity to re-embrace the role all parties to the Paris Agreement play in working towards the eventual goal of limiting global warming to below 2°C»

Many renewable technologies can create significant socio-economic value beyond their use for energy provision and climate mitigation.[28] For wind and solar power, for instance, value can be generated from the local manufacturing of technological components – an aspect of particular value for markets with a large pool of relatively low-cost labour such as Morocco, Egypt or Tunisia, in addition of course to the enormous possibilities for technology manufacturing in South and East Asia. Installation, grid connection and maintenance, including for off-grid renewable systems, can create additional jobs which, unlike in the case of technologies such as nuclear power, are comparably easy to train and transferrable, helping create self-sustaining communities including in some of countries' least accessible communities.

Conclusions: Beyond COP22

The legacy on Marrakech will undoubtedly be determined by how concrete the actions are that result from the meeting. While some objectives, such as encouraging the world's community of over 196 different countries with their own, national circumstances to take up climate action, is undoubtedly a complex task that will take time, other objectives can be met with relatively concrete outcomes. These include priority work on the Paris Agreement's transparency and data collection mechanisms, and the all-important topic of climate finance for developing countries. Marrakech in this context offers huge opportunities to demonstrate real climate commitment from both developing and developed countries in line with UNFCCC objectives, including by committing sufficient climate funds, but also by revisiting other, market-based barriers that keep clean, low-emissions energy from making a market case across markets. The role of clean energy trade could in this context prove to be a major dealmaker, including for COP22's host country Morocco, and its neighbouring countries in North Africa.

Marrakech is also an opportunity to re-embrace the role all parties to the Paris Agreement play in working towards the eventual goal of limiting global warming to below 2°C. Participating constructively in global mitigation and adaption efforts is for developing countries in particular a critical opportunity to facilitate their own process climate adaptation, reducing their vulnerability to climate change. For large emitters within the forum, this is an opportunity to demonstrate leadership and commitment with an eye for the long-term management of our planet's finite resources.

28. E.g. IRENA and CEM (2014).

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