

Working Paper¹

Galvanizing the groundswell of climate actions in the developing world

Sander Chan² and Thomas Hale³

Abstract

As the UN climate negotiations move to a critical inflection point, a growing number of cities, companies, civil society organizations, research organizations and other groups are shifting toward a low-carbon and climate resilient pathway. This groundswell of climate action is often perceived as a Northern-based, mitigation-focused phenomenon. In truth, there is a huge amount of climate action in the global South covering not just mitigation, but also adaptation, resilience, and positive benefits for economic and social development. However, both scholars and governments have raised concerns over how to maximize the benefits of such actions for developing countries and whether some actions may exacerbate existing imbalances in global climate governance, in particular between the global North and South. This paper discusses imbalances identified in current research, while addressing possible biases in contemporary research on climate and sustainability actions. Subsequently, this paper identifies opportunities for climate actions in the Global South to contribute to the emerging climate regime; to the bridging of divides between developing and developed countries; to the development of South-South cooperation; and to national low-carbon and climate resilient development in developing countries. The paper recommends a more comprehensive framework and a more active 'orchestration role' for international organizations, in particular the UN and the UNFCCC secretariat. Finally, this paper discusses future research directions.

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² Researcher, German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE), sander.chan@die-gdi.de

³ Associate Professor, Blavatnik School of Government (University of Oxford), thomas.hale@bsg.ox.ac.uk

Introduction

An emerging groundswell of actions by cities, companies, civil society organizations, research organizations and other groups is seeking to address climate change, taking on the challenge to lower global emissions as well as building a safe and climate resilient future. Even in the traditionally state-centered climate process, around the UN Framework Convention on Climate Change (UNFCCC), governments increasingly emphasize the important role of non-state actors. Subsequent presidencies of the UNFCCC and the UNFCCC secretariat have been particularly pro-active recognizing non-state action, for instance by launching a 'Momentum for Change' campaign to highlight climate actions that also benefit marginalized and poor communities, by facilitating platforms to share information on diverse samples of climate actions (e.g. the Non-state Actor Zone for Climate Action [NAZCA]), or by examining and highlighting scalable actions in so-called Technical Expertise Meetings with government representatives. This process will continue at COP21 in December 2015, where the Presidency has made the "action agenda" a core pillar of the outcome.

The majority of governments have been strongly supportive of this trend, seeing sub- and non-state action as a way to enhance government capacity and go further than would otherwise have been possible. But at the same time, some governments and observers of the intergovernmental climate process have also raised concerns about the growing role of non-state actors.⁴ Some countries have emphasized that the UNFCCC should remain a government centered (or 'Party-driven') process, and that any reference to non-state actors should not result in additional burdens for developing countries. Several governments and observers have also expressed worries that non-state actions may be referred to as a convenient excuse for governments not to take on higher mitigation and adaptation ambitions. In addition, some non-state action may advance business as usual rather than promote development towards a low-carbon and climate resilient future (so-called green washing) (The Stanley Foundation, Blavatnik School of Government et al. 2015).

Similarly critical voices can be heard in recent scholarship that question the additional contribution of climate actions above governmental commitments (Pattberg and Widerberg, 2014), and warn against repeating earlier instances of non-state engagement in international processes that resulted in inaction and green-washing (Chan and Pauw 2014). In connection to that, several scholars have opted the idea of a better orchestration of climate actions by states and intergovernmental organizations (Hale and Roger 2014) or a more comprehensive framework (Chan and Pauw 2014).

⁴ For an overview of parties' views on the role of sub- and non-state actors in the UNFCCC, see: "UNFCCC parties and observers' views on sub/non-state actions and cooperative initiatives," Memo prepared for workshop on "Designing a global platform for climate actions," Oxford, July 24-25, 2014. Available at: http://media.wix.com/ugd/299785_c5ac23cde15548518226060b59595e10.pdf

This paper addresses one critique of climate and sustainable development actions, namely that non-state and subnational engagement insufficiently benefits developing countries (cf. Bulkeley 2001, Bulkeley, Andonova et al. 2012, Pattberg, Biermann et al. 2012), and exacerbate existing imbalances in global climate and sustainability politics. Reviewing current research on non-state and subnational engagement in international sustainable development and climate processes, the authors find that, there are indeed imbalances between North and South, in particular in terms of patterns of participation. However, they also argue that the groundswell of climate action offers tremendous opportunities for the global South, to attract investments for low-carbon development, to promote technology transfer, to build sustainable development capacity, to link up sustainable development and low-carbon development and to skip the polluting and unsustainable development paths that developed countries have taken before them. The groundswell represents an opportunity for developing countries to seize upon. To do so, developing country governments and sub- and non-state actors in the global South, as well as international organizations, could take measures to ensure more balanced representation, and to build an environment conducive to transnational linking between and with partners in developing countries.

Imbalances – evidence from current research

Some developing countries have been skeptical towards stronger links between the intergovernmental UNFCCC regime and non-state actions. There is a perception that non-state and subnational climate and sustainability actions are not in the interest of developing countries.⁵ In contrast, developed countries such as the US, the EU, Australia and Japan, have often advocated such links. The prevalence of differentiated responsibilities in the intergovernmental process seems to safeguard development for the poorer countries, while bringing out greater (mitigation) contributions from developed countries. At the same time, the differences between the ‘North’ and the ‘South’⁶ in intergovernmental climate process have also been widely regarded as contributing to the problem structure that prevents decisive action to steer away from dangerous climate change. This raises two related questions regarding non-state and subnational climate actions, namely: (1) to which extent do these actions reflect North-South divides; and (2) to which extent do climate actions overcome the North-South problem-structure in climate politics to effectively contribute to mitigation and adaptation.

Regarding the first question, recent large-n studies of climate and sustainability initiatives seem to confirm imbalances between the North and the South.

⁵ Note that there is a divide in this respect in some countries, where the national government may be skeptical towards any reference to the role of non-state actors in the climate process, while domestically the public role of non-state action is emphasized for potential investment and job creation.

⁶ Or ‘annex 1 countries’ and ‘non-annex 1 countries’

Pattberg et al.'s (2012) study of 430 'Partnerships for Sustainable Development', shows that most initiatives are northern-led (figure 1), and implement in developed countries (OECD) rather than in developing countries (figure 2).

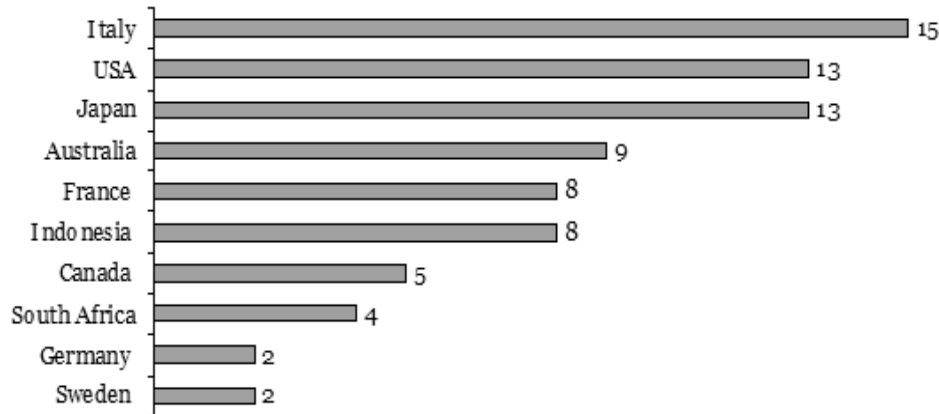


Figure 1 Partner governments from the global North most frequently led Partnerships for Sustainable Development.

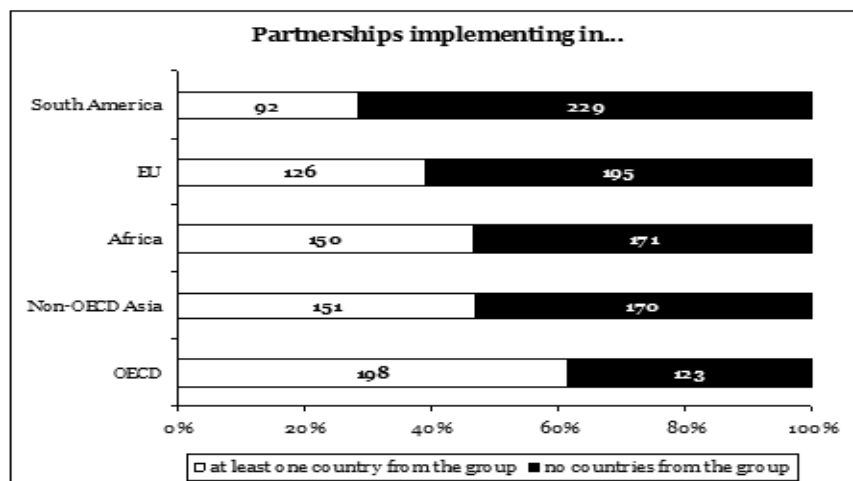


Figure 2 Most sustainability partnerships implement in OECD countries.

Bulkeley et al.'s (2012) study of 60 transnational climate initiatives demonstrates a low share of adaptation initiatives, which 'may also reflect the fact that many developing countries, with the exception of the BRICSAM countries, are under less domestic and external pressure to show leadership on the issue of climate change' (601). Moreover, the Climate Initiatives Platform (2015) suggests a thematic imbalance, where most climate actions primarily address mitigation rather than adaptation and resilient development, the latter being particularly of concern to developing countries. Andonova et al.'s (2014) detailed mapping of climate initiatives show where cities, companies, and other sub- and non-state actors that participate in international initiatives are located. They find,

unsurprisingly, that larger countries are more likely than others to see their sub- and non-state actors participate in such networks (see figure 3). Fascinatingly, however, econometric analysis shows that the level of development is *not* a strong predictor of sub- and non-state actors' participation in cross-border networks. Per unit GDP, cities, companies and other actors from rich countries are no more likely to participate than actors from poor countries.

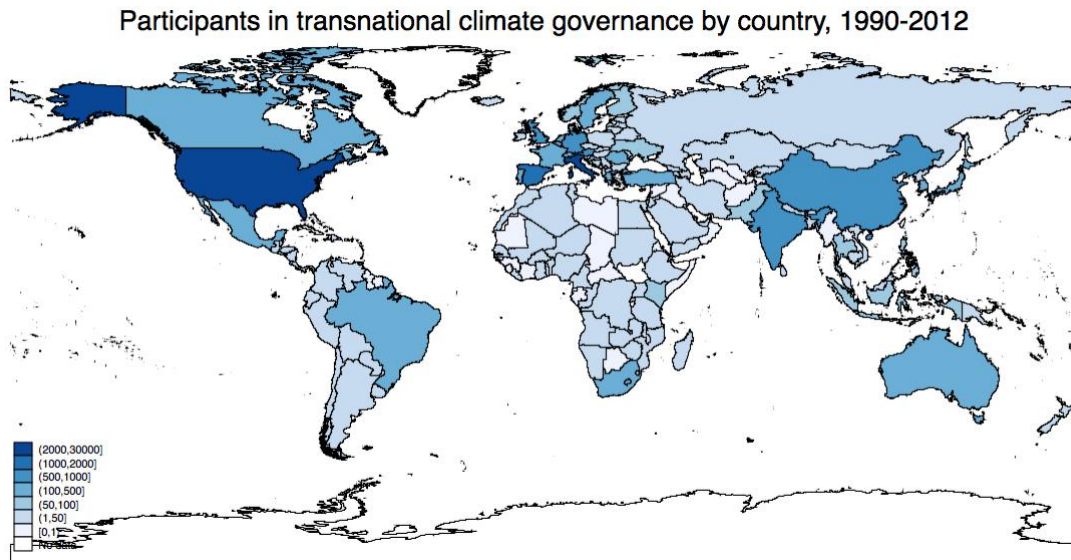


Figure 3 Total sub- and non-state participants in transnational climate initiatives by country, 1990-2012. Source: Andonova, Hale and Roger 2014.

Although these studies indicate a northern orientation, and a strong emphasis on mitigation among climate actions, we should be careful to conclude that dividing lines are necessarily along the global North and South. Current studies tend to focus on the most visible, largest and internationally operating initiatives, which may reflect existing North-South imbalances in international climate politics, rather than being representative of a larger landscape of very diverse and widely spread transnational actions. Many large-n studies moreover draw data from existing reporting initiatives and data platforms that insufficiently feature climate actions in developing countries. On the one hand, the prevalent use of English in these platforms may present an additional burden for initiatives from non-English speaking countries to seek recognition and visibility at the international level of governance. On the other hand, more locally focused 'on the ground' projects may never be featured in international comparative studies because samples are too often derived from international platforms and databases (for instance on UN websites). Also climate actions in developing countries might have too limited budgets to attend international forums, which further contribute to their invisibility.

Even if a majority of climate initiatives may be northern-led, climate actions often feature organizational arrangements that are highly adaptable to domestic implementation contexts. Therefore 'northern-led' initiatives may actually be embedded and dominated by local partners in the national and local

implementation contexts of developing countries (Chan 2014, PhD thesis). In addition, at the level of operations and implementation, even northern-led actions seem to benefit the global South, as they direct investments towards developing countries, and achieve most of their outputs there (Chan and Falkner, forthcoming).

By different measures, North-South imbalances may be less significant than current studies suggest. For instance, once corrected for the size of economies (measured by GDP) or population, participatory patterns seem to be more equal, with considerable participation from developing country based actors. If measured by carbon intensity (CO₂ emissions per unit GDP), developing country participation is even markedly higher (Andonova, Hale et al. 2014). Variation in effectiveness of transnational actions across countries also does not seem to reflect the North-South divide. Non-state and subnational initiatives developing countries may actually perform better on average (Chan 2012), especially in emerging economies. In terms of effectiveness, the dividing line seems not to be between North and South, but e.g. between different regions in the world.

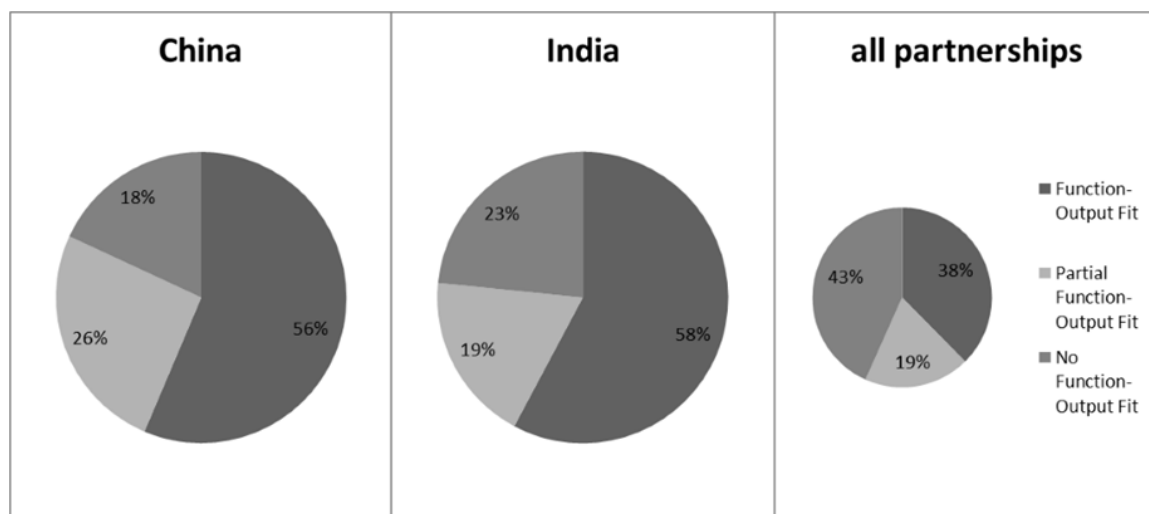


Figure 4 Partnership for Sustainable Development in China and India achieved higher output effectiveness than the world average⁷

The above is not to indicate that there are no North-South differences in the very diverse field of climate actions. However, these differences may not be as stark as suggested in some large-n studies. Many initiatives in the global South are overlooked, and divisions between the global North and the global South may not be as prominent as, for instance, between LDCs and emerging economies. This more nuanced understanding of climate actions and the supposed divide

⁷ Pattberg et al. (2012) use the 'Function-Output Fit' (FOF) as an indicator of minimal output effectiveness. FOF matches self-declared governance functions (e.g. 'raising awareness') with an initiative's tangible outputs, e.g. advertisements and publications for the general public. FOF therefore indicates whether an initiative produces the necessary output to achieve (higher order) effects, such as behavioral change and changes in environmental indicators.

between North and South is important because it allows us to better define opportunities for galvanizing climate actions in developing countries, and also to better take advantage of these opportunities.

Opportunities

The groundswell of climate actions has great potential both at the international level of the climate regime, as well as in at the national and local levels of governance. At the international level, we see possible contributions by climate actions to two developments, namely: the fact that the climate regime is becoming more 'nationally determined' international climate architecture – with governments setting national mitigation targets, and devising national adaptation plans; and the fact that climate governance is also becoming more complex, addressing a multiple aspects of climate change including mitigation, adaptation, loss and damage and means of implementation.

In a nationally determined climate architecture, climate actions could contribute to national target-setting, both in mitigation and adaptation and demonstrate innovative, scalable and proven approaches, both in the areas of adaptation and mitigation. In subsequent rounds of reviewing national targets (e.g. in Intended Nationally Determined Contributions [INDC] and in National Adaptation Plans), closer engagement of climate actions at the national level could help governments formulate targets that are at the same time more ambitious and achievable. Climate actions could therefore drive up global ambitions and make important practical, but also political contributions towards a low-carbon climate resilient future.

In the context of growing complexity of climate governance, negotiations have become vulnerable to political stalemates between countries that prioritize different aspects of climate change. Rather than treating mitigation, adaptation, loss and damage, and sustainable development as separate issues, and through separate mechanisms and institutions many climate actions integrate concerns about mitigation, adaptation, development and justice seamlessly. They demonstrate that – in practice – climate change requires a comprehensive response, and that separate issues do not necessary compete, at least in specific and local implementation contexts. Moreover, in numerous climate actions, partners from developing and developed countries participate on equal terms, rather than perpetuating North-South divisions in the international regime. Therefore, climate actions have the potential to bridge climate change and sustainable development, as well as foster collaboration between North and South, eventually overcoming longstanding political divides between developed and developing countries.

In addition, to increasing global connectivity between North and South, climate actions could also foster relations and cooperation between developing countries. Indeed, the scope for South-South cooperation is widening because (a) most developing countries address climate change under the heading of sustainable development; developing countries may have greater experience to

leverage sustainability co-benefits; (b) developing countries are also changing their focus in favor of mitigation (e.g. in some East African countries). Rather than featuring traditional North-South divides, Southern partners increasingly find each other in collaborative initiatives (South-South collaborations). Bilateral South-South cooperation already take shape, for instance between China and Africa. At subsequent meetings of the Forum on China-Africa Cooperation (FOCAC), sustainable development and non-governmental exchanges have been emphasized as areas of cooperation (Li, Grimm et al. 2013), this could spill over into transnational collaborations and climate actions.

Finally, climate actions could greatly benefit local and national development. Not only do climate actions disseminate knowledge and technologies, they also effectively leverage investments to benefit the developing countries. A precedent can be found in projects under the Clean Development Mechanism, where climate actions benefitted the private sector in developing countries. Recent studies, moreover, suggest that the majority of ‘countries of implementation’ of partnerships for sustainable development most climate actions are implemented in developing countries (Pattberg, Biermann et al. 2012, Chan and Falkner Forthcoming in 2015). Therefore, even northern-led initiatives may actually direct funding to, and implement in, developing countries. More generally, climate actions could benefit local development in terms of technological upgrades, quality of life improvements, more efficient resource management, and resource- and energy security, and could act as vehicles for local investments. In some areas, there may even be opportunities to ‘leapfrog’ onto a low-carbon pathway. For instance, climate actions could help bring about renewable energy infrastructures in developing countries, and skip the polluting and unsustainable energy paths that developed countries have taken before them.

The need for a comprehensive framework

Overall, climate actions, and transnational action in general, seems to strengthen states, enabling more ambitious targets, and helping them to achieve targets. Transnational climate action should not be seen as a separate or even a competitive sphere of governance: high-level international negotiations and development of the international regime corresponds with a higher number of transnational actions (Hale 2014). Nonetheless some gaps remain. In various samples of larger UN-led or –registered initiatives, developing countries remain under-represented; the geography of implementation is imbalanced, with more investments going to e.g. emerging countries rather than LDC where needs are greatest (Pattberg, Biermann et al. 2012), and the number of climate actions unequally distributed across the world (Andonova, Hale et al. 2014). While considerable numbers of partners from developing countries take part in climate and sustainability actions, they rarely lead these actions, preventing more direct responses to developing countries’ needs

Some of these gaps could be effectively addressed through concerted, strategic coordination measures by international organizations (Chan and Pauw 2014), or

other ‘orchestrators’ (cf. Abbott and Snidal 2009, Hale and Roger 2014). The potential to orchestrate climate actions and to link the sustainable development and climate agenda has increasingly been recognized in the UN system. For instance, the UN SG has sought to complement the intergovernmental climate process with a climate summit which featured climate actions at all levels, integrating sustainability needs with mitigation in concrete action areas, for instance in sustainable transport, climate smart agriculture and smart cities. Within the UNFCCC, technical expert meetings under the Ad-Hoc Working Group on the Durban Platform for Enhanced Action (ADP) feature climate actions that are both scalable and relevant to developing countries. Arguably, orchestration could strengthen international organizations and national governments by improving their capacity to steer sub-national and transnational action towards governmentally agreed targets.

Current orchestration efforts, however, are not comprehensive enough to effectively redress imbalances between North and South, between emerging and developing countries, and between various aspects of climate change (e.g. mitigation, adaptation, loss and damage). They focus on mutual learning (e.g. ‘Private Sector Initiatives’ [PSI] under the Nairobi work programme on impacts, vulnerability and adaptation to climate change [NWP]), on making data accessible (e.g. the Non-state Actor Zone for Climate Action [NAZCA]), and on inspiring the wider uptake of actions to enhance pre-2020 mitigation ambitions (in the Technical Expert Meetings under the ADP). Perhaps the UNFCCC secretariat’s ‘Momentum for Change’ initiative comes closest in addressing the potential of climate actions in developing countries, as it highlights and awards innovative and transformative solutions that address both climate change and wider economic, social and environmental challenges. However, the emphasis is (again) on the visibility of a few inspiring cases, and efforts to promote and enhance climate actions remain scattered (even within the UNFCCC). Initiatives and processes engaging climate actions remain largely unrelated and there is no redressing of imbalances between developing and developed countries.

A comprehensive framework for climate actions, should link existing programs and initiatives within and outside of the UNFCCC, to provide an overview of the wide scope of actions, but also to strategically determine where efforts could be directed towards. For instance, a relatively low share of climate actions addressing resilience could strategically inform subsequent mobilization actions by national governments, the UNFCCC secretariat or other (international) organizations. Moreover, a relative underrepresentation of developing countries in certain action areas should inform the brokering of more development oriented climate actions in the global South, and encourage developing country based partners in more climate actions.

Elements of a framework could include:

- A network of research/assessment initiatives, to evaluate the effectiveness of (samples of) climate actions and their contribution to global mitigation and adaptation.
- A 'partnership facility', hosted by the UNFCCC secretariat or another international body – possibly in collaboration with the UN Office for South-South Cooperation; to broker new climate actions, for instance in thematic and geographic areas that are not yet addressed by existing initiatives; to facilitate climate actions by improving their capacities and resources⁸; and to advise governments on galvanizing climate actions through public-private collaborations, and through stimulating non-state actors.
- An annual report to the UNFCCC Conference of the Parties (COP) on Climate Actions and their mitigation and adaptation contributions; providing an overview of the most significant samples of climate initiatives, their effectiveness, and opportunities to strategically galvanize and broker non-state or public-private actions.
- An annual 'Climate Action Fair', and possibly regional equivalents, that not only showcases climate actions, but also actively engages partners from the global South in existing and new initiatives.

In general, a comprehensive framework for climate actions should improve policy opportunities to expand the groundswell of climate actions in developing countries and shape it to better respond to development needs.

Research agenda

The emerging groundswell of climate action and their presence/absence in developing countries raises questions that should be addressed in future research.

The international environmental law principle on common but differentiated responsibilities (CBDR) establishes that all states are responsible for addressing climate change, but not state are equally responsibly has been very influential in the development of the global climate regime, particularly the principle was incorporated in the Kyoto Protocol. However, in a climate regime that is increasingly nationally determined and (transnationally) complex, questions of equity and responsibility cannot be addressed by CBDR, as transnational arrangements are generally voluntary and self-organizing. Yet their location, impacts, and investments have considerable impact on global equity. In our opinion, a more comprehensive framework could help international organizations and governments to steer climate actions towards greater equity. However, the landscape of climate action is vast and diverse, and considerable research effort will be necessary to better understand various (distributional) effects of climate actions.

⁸ For instance by helping them access (climate) finance, by facilitating mutual learning, and by advising local partners.

A more immediate question, arising from the rapidly developing recognition framework and registration platforms for climate and sustainability actions, relates to approaches to evaluate the effectiveness and contribution of climate actions to global mitigation and adaptation. Although several initiatives (e.g. NAZCA, Carbonn, CID, SD in Action) aim to provide broad overviews of non-state and subnational climate initiatives, questions about their effectiveness and performance remain. The sheer amount and diversity of climate actions also complicates their comparability, and the devising of methodologies that can be applied across different samples.

Both research and policy could focus on a more balanced representation of initiatives both in developing and developed countries, and identify new opportunities for Southern-led initiatives. For this purpose additional research is necessary that is more policy-oriented, and that could provide practical guidance to policy-makers (and orchestrators).

Annex 1 Examples of climate actions⁹

Agriculture and Land-use

- **Women Farmers in Itzapa, Guatemala, and AIRES - Engaged in Agro-Forestry for the Earth**

Location: Caribbean/Latin America

This project promotes tree planting to sequester carbon and improve farming techniques, such as preventing erosion, improving yields and increasing crop diversity. The activity also builds efficient brick stoves with chimneys that reduce both the negative health impacts caused by smoke inhalation and the need to cut down trees for fuel.

- **Promoting women's participation in small agroforestry nursery units – India**

Location: Tamilnadu towns

Organization: HEALDS

http://unfccc.int/secretariat/momentum_for_change/items/8354.php

This project involves women and youth in establishing seedling enterprises. “Promoting women's participation in small agroforestry nursery units” increases greenery in Tamilnadu towns, while providing women's groups with a means to make money.

- **Buffelsdraai Landfill Site Community Reforestation (2011 lighthouse activity)**

Date project established: November 2008

Location: Africa, South Africa, eThekweni Municipality

http://unfccc.int/secretariat/momentum_for_change/items/6631.php

Trepreneurs are local community members who trade their home-grown tree seedlings for credit notes, which can later be exchanged for food, building materials, bicycles, basic household goods, or used to pay school fees or driving lessons. In addition to direct employment, the trepreneurs are encouraged to diversify their plant growing skills to include fruits and vegetables for their own use or for selling in the local markets.

- **Karoo Riparian Ecosystem Restoration Project**

Location: Loxton, South Africa

Established: March 2007

⁹ The authors would like to acknowledge Sofia Hadir and Friederike Barthe for compiling examples for this annex.

Organizations: Endangered Wildlife Trust – Riverine Rabbit Programme; Department of Environment and Nature Conservation; CapeNature; Ubuntu Municipality

http://unfccc.int/secretariat/momentum_for_change/items/7194.php

By restoring the integrity of riverine corridors, Karoo communities of plants, people (urban and rural) and animals can be buffered against the impacts of climate change, particularly critical given the arid nature of the region. Through a) intensive soil and water conservation techniques; b) re –establishing vegetation; and c) partnering with farmers to improve sustainable management of riparian systems, the activity aims to restore cover, biodiversity, productivity and carbon cycles in these zones. By providing employment opportunities and skills development, the activity is harnessing the constructive role ecosystem restoration can play in enhancing not only system resilience, but also human livelihoods and dignity.

Cities

- **Green Exchange**

Location: Queenstown, Tampines North and Macpherson communities in Singapore

Established: 12 October 2010

Organizations: Avelife Organization

http://unfccc.int/secretariat/momentum_for_change/items/7188.php

The main objective of the activity is to promote a habit of recycling in the heartlands by conducting such events throughout Singapore. The programme provides basic necessities like rice to the lower income families in Singapore through a food exchange program. By incentivizing and promoting the message of recycling, the beneficiaries will learn the positive economic and environmental impact they had.

- **Earth Roofs in the Sahel Program**

Location: Burkina Faso, Mali, Senegal, Benin, and Mauritania

Organizations: Association la Voûte Nubienne

http://unfccc.int/secretariat/momentum_for_change/items/8691.php

Through its Earth Roofs in the Sahel Program: A Roof + A Skill + A Market, the Association la Voûte Nubienne is addressing the problem of wood scarcity for buildings with a traditional, very low-carbon building technique known as Nubian Vault. The organization supports the training of local builders, in order to create a sustainable and autonomous Nubian Vault market.

ENERGY

- **Solar Sisters**

Location: Communities across Uganda, Rwanda, South Sudan, example Mityana in Central Uganda

Established: October 2009

http://unfccc.int/secretariat/momentum_for_change/items/7072.php

It empowers women with economic opportunity and clean energy. It combines the breakthrough potential of portable solar technology with a women driven direct sales network to bring light, hope and opportunity to a range of communities without reliable electricity access. Through a micro-consignment model, Solar Sister entrepreneurs get a 'business in a bag', a start-up kit of inventory, training and marketing support to bring clean energy directly to their customer's doorsteps.

- **Recycling Municipal Waste through Biogas Production and Composting Project**

Location: Kathmandu, Nepal

Established: July 2009

Organizations: Local Government of Kathmandu; Women Environment Preservation Committee;

GEF Small Grants Programme (SGP), implemented by UNDP

http://unfccc.int/secretariat/momentum_for_change/items/7366.php

The activity consists in managing waste at source (within households) and increase the number of households involved in waste collection. WEPCO converts waste to biogas, thereby reducing demand. This community-based activity has not only provided environmental benefits but socio-economic as well: awareness-raising and training, particularly young people and generation of income, improving the livelihood of the members of the community.

- **Introduction of electric vehicles to Sri Lanka**

Location: Colombo, Sri Lanka

Established: May 2003

Organizations: Local Government of Colombo, Lanka Electric Vehicle Association, GEF-SGP Sri Lanka

http://unfccc.int/secretariat/momentum_for_change/items/7102.php

This project paved the way for the commercial introduction of electric and hybrid vehicles on the streets Sri Lanka's capital, Colombo. Initially planned as a demonstration and capacity building activity, LEVA switched to advocacy work, successfully lobbying the government to support electric and hybrid vehicles.

- **Oko-baba Sawdust Waste to Wealth Initiative**

Location: Lagos, Nigeria

Established: October 2008

Organizations: Sustainable Research and Action fir Environmental Development (SRADev Nigeria); Oko-baba Sawmillers Association

http://unfccc.int/secretariat/momentum_for_change/items/7150.php

The major goal of the activity is to support Lagos sawmill workers (Oko-baba cooperatives) to reduce pollution and health problems arising from sawdust combustion, through local capacity-building to utilize sawdust for economic benefits involving the mechanical conversion of the waste sawdust into economically useful briquettes. This will reduce greenhouse gas emissions, while enhancing the quality of life and public health in the host communities.

Financing

- **ECOCASA: Low-Carbon Housing in Mexico (2013 lighthouse activity)**

Location: Caribbean/Latin America

http://unfccc.int/secretariat/momentum_for_change/items/7848.php

This activity is helping Mexico tackle climate change by unlocking financing to build low-carbon housing and increasing the amount of mortgages for low-carbon housing.

Industry

- **Green Finance, Better Tomorrow — Industrial Bank's financial solutions for sustainable development in China**

Location: China

http://unfccc.int/secretariat/momentum_for_change/items/8372.php

This project aims to speed up investment in green business. “Green Finance, Better Tomorrow – Industrial Bank's financial solutions for sustainable development” focuses on energy performance contracts, which provide loan money for environmentally friendly projects in exchange for future revenue. The initiative has, for example, already supported the renovation of solar water heating systems in southern China.

Resilience

- **Own Food Preservation and Canning as a Drought Strategy for Urban Poor – Namibia**

Location: Namibia

http://unfccc.int/secretariat/momentum_for_change/items/8341.php

This initiative allows farmers in Namibia to can food that might otherwise go to waste. “Own Food Preservation and Canning as a Drought Strategy for Urban Poor” helps in the canning of meat and vegetables that farming families can eat, or sell to city dwellers. The project brings modern technology to a centuries-old farming system, contributing to food security while conserving resources in times of increased drought.

Transport

- **The Buses of Brazil: Connectivity - Intelligent Transport Solution (2011 lighthouse activity)**

Location: Curitiba, Brazil

Partners: URBS (Urbanização de Curitiba / Society of Urbanization of Curitiba); Ericsson Telecomunicacoes s.a. ; Vivo; Dataprom

http://unfccc.int/secretariat/momentum_for_change/items/6639.php

One of the success factors for Curitiba's BRT system has been connecting public buses to a 3G mobile-broadband network. This has helped to improve real-time planning and make bus operations more efficient and effective, contributing directly to CO2 emission reductions.

As part of studies that explore ICT solutions and their potential CO2 emissions reductions, Ericsson has conducted a life-cycle-based analysis of CO2 emissions related to the BRT system in Curitiba, confirming that the integrated 3G mobile-broadband network has helped to reduce the carbon footprint of the transport system.

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