MAKING CLIMATE FINANCE WORK FOR AFRICA

Using NDCs to Leverage Climate Relevant Innovation System Builders (CRIBS)

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Climate Resilient Economies Programme Workshop Training Brief 1 /APRIL 2017

Training brief 1: Why focus on building innovation systems?

Key messages

1. Past international climate finance mechanisms (e.g. the Clean Development Mechanism, CDM) failed low and middle income countries. It focussed only on hardware financing. This reinforced the comparative advantages of countries (e.g. China & India) with existing innovation systems around climate technologies.
2. Building strong innovation systems explains the success of most countries' economic development (e.g. OECD countries, Asian Tiger Economies, China's success with wind and solar).
3. The devolved nature of the Paris Agreement is a key opportunity for low and middle income countries to leverage new climate finance to fund innovation system building around climate technologies, underpinning sustained economic growth and poverty alleviation.
4. CRIBs (Climate Relevant Innovation-system Builders) are the key mechanism through which this can be achieved.

Why focus on building innovation systems?

Key background

Previous international climate finance mechanisms completely failed to deliver against the climate technology needs of low and middle income countries. By focussing only on funding for technology hardware, climate finance mechanisms like the Clean Development Mechanism (CDM) reinforced the comparative advantages of countries, like India, China and Brazil, that already had relatively strong innovation systems in place around key climate technologies. By January 2014, China had accumulated 80% of aggregate investment under the CDM and India 11%. Africa as a whole (including the countries of North Africa and South Africa) had accumulated 3% between them – a vanishingly small amount (see Fig.1).

This is no way reflects relative carbon emissions from these countries. Fig.2 shows these data on the basis of CDM funding accumulated per tonne of CO_2 emitted. Africa accumulated less than half the CDM funding per tonne of CO_2 emitted than India and less than a third that of China.

Clearly, such climate finance mechanisms are not fit for purpose. The devolved nature of the Paris Agreement and a new acceptance within the UNFCCC's Technology Executive Committee (TEC) of the importance of building innovation systems, represents a key opportunity for low and middle income countries to redress this balance.

This briefing note, together with its sister briefing note (see "Training brief 2: Using CRIBs (Climate Relevant Innovation-system Builders) to implement NDCs" (see http://www.acts-net.org/cribs) provides the summary background necessary to action this.

Fig. 1. Accumulated investment through the CDM Jan 2014 ROW=Rest of World, Source: Author based on http://www.cdmpipeline.org/

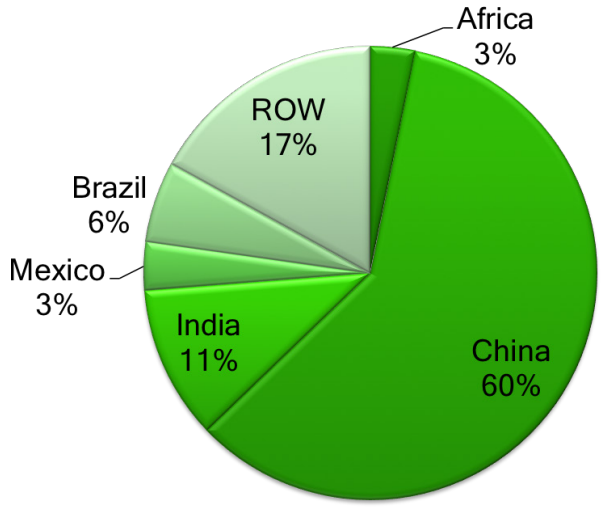
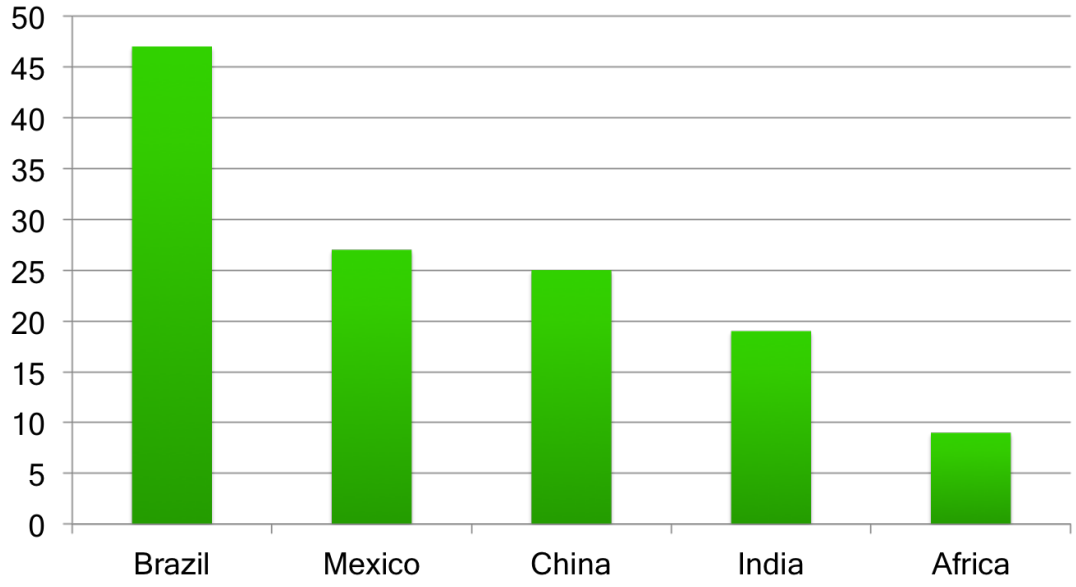


Fig.2 Accumulated investment through CDM per tonne of CO_2 emitted (Jan 2014). Source: Authors based on http://www.cdmpipeline.org/



Why build innovation systems?

Innovation systems refer to the systemic context within which technology adoption, innovation and economic development occur. The idea first emerged as a means of better explaining the successful economic development of various countries in ways that conventional economic theory was unable to explain.

National innovation systems have since been proven to explain the economic development of a wide range of countries including, for example, all of the OECD countries and the so-called "Asian Tiger Economies". Emulating an innovation system building approach has also been demonstrated as underpinning the success of Lighting Africa in rapidly developing a new market for solar portable lanterns in Kenya and China's successful use of CDM funding to foster growth in various climate technology industries, including solar PV and wind.

Innovation systems can be understood as the gardens within which fertile soil (understood as technological capabilities around climate technologies) is nurtured. They provide the context within which all processes of technology development, transfer and uptake (or "innovation" understood in its broadest sense) occur.

Innovation systems encompass the network of actors (firms, universities, research institutes, government departments, NGOs, technology users including poor and marginalised women and men)

within which innovation occurs, and the strength and nature of the relationships between them.

Using international climate finance to nurture innovation systems around climate technologies in low and middle income countries would begin to address the problem that hardware financing mechanisms like the CDM can't fix. It will underpin more sustained and widespread transfer and development of climate technologies. If done in the right way, engaged with the right actors, it can also be achieved in ways that directly respond to the needs of poor and marginalised women and men. As such, innovation system building provides a powerful new focus for policy and one that low and middle income counties could benefit from significantly were they to champion the use of international climate finance for innovation system building.

Why now? Implementing NDCs via innovation system building post-Paris

There are two key reasons that mark now as the time for low and middle income countries to act:

1. The devolved nature of the Pairs Agreement gives countries agency to pursue their own, self-defined pathways to implementing their NDCs (Nationally Determined Contributions). Low and middle income countries can therefore take a lead in leveraging international climate finance for innovation system building as the means through which to implement their NDCs. Countries (e.g. East African Countries) also have agency to coordinate regionally and inter-regionally to increase their lobbying power and the efficacy of their actions.

2. There is interest in innovation systems as a means for achieving technology transfer and development within key international climate institutions. This includes the UNFCCC's Technology Executive Committee (TEC), which oversees technology transfer and development under the UNFCCC and oversees the funding activities of the Green Climate Fund. Coordinated approaches from low and middle income countrie for international climate funding for innovation system building are therefore likely to be well received.

What next? CRIBs (Climate Relevant Innovation-system Builders) for building innovation systems and delivering NDCs

Empirical work analysing successful innovation system building around climate technologies in Kenya, Tanzania and China, together with extensive other evidence from across the world, has led to the development of CRIBs as the policy vehicles/institutions through which innovation system building around climate technologies in low and middle income countries can be successfully achieved. CRIBs are the key vehicle through which innovation systems can be built to deliver countries' NDCs.

Please refer to Training briefing 2 (http://www.acts-net.org/cribs for details on CRIBs and delivering NDCs.

Further reading (all free open access)

1. Training brief 2: Using CRIBs (Climate Relevant Innovation-system Builders) to implement NDCs" (http://www.acts-net.org/cribs)
2. David Ockwell and Rob Byrne (2015) Improving technology transfer through national systems of innovation: Climate Relevant Innovation-system Builders. (CRIBs) Climate Policy 16 (7): 836-854 (available OPEN ACCESS here http://www.tandfonline.com/doi/full/10.1080/14693062.2015.1052958)
3. David Ockwell and Rob Byrne (2015) CRIBs (Climate Relevant Innovation-system Builders): An Effective Way Forward for International Climate Technology Policy STEPS Working Paper 76, Brighton: STEPS Centre - ISBN: 978-1-78118-211-6 http://steps-centre.org/publication/cribs-climate-ockwell-byrne/
4. David Ockwell and Rob Byrne (2014) CRIBs (Climate Relevant Innovation-system Builders): Policy Recommendations on Fostering National Systems of Innovation under the UNFCCC. STEPS Working Paper 76, Brighton: STEPS Centre - ISBN: 978-1-78118-210-9 http://steps-centre.org/publication/cribs_policy/
5. D. Ockwell and R. Byrne (2016) Sustainable Energy for All: Technology, Innovation and Pro-Poor Green Transformations, Routledge, Abingdon http://steps-centre.org/publication/sustainable-energy-for-all-innovation-technology-and-pro-poor-green-transformations/

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