The ROCKEFELLER FOUNDATION

The Asian Cities Climate Change Resilience Network (ACCCRN): Achievements in Building Capacities, Changing Practices, and Strengthening Networks

INTRODUCTION

The Rockefeller Foundation (RF) launched the Asian Cities Climate Change Resilience Network (ACCCRN) in 2008. In keeping with the Foundation's commitment to time-bound initiatives, the formal end to its investments in ACCCRN programming is due in 2016, with a legacy portfolio of urban climate change resilience (UCCR) work that has engaged cities, communities and professionals to boost resilience in 6 Asian countries.

Cities in Asia face an increasingly diverse and less predictable range of shocks and stresses linked to climate change and urbanization. This is manifest in rising sea levels, frequent and severe storms, diminishing biodiversity, heat waves, and shifting patterns of disease. Resilience enables cities, communities, and organizations of all kinds to prepare for, rebound from, and even emerge stronger from a range of threats – and function better in the day to day. As cities are dealing with multiple challenges, and many face shrinking resources, a resilience lens can give impetus to address a range of problems and infrastructure needs through single investments.

Yet, also in keeping with the Foundation's commitment to building the field of resilience, this is also a beginning: ACCCRN continues to grow as a network of practitioners committed to building UCCR and it offers a platform for ongoing exchange and learning - both within national contexts and across the region.

Through 2016, ACCCRN's vision – of more climate resilient cities across Asia – will have taken root in more than 60 cities. Outlined within are select signature achievements that signal the breadth and range of progress that is possible when cities envision their future guided by resilience thinking. These examples are testament to the imagination, dedication, and rigor of a pioneering set of actors that have been at the leading edge of defining what UCCR is – and how to build it.

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ACCCRN Objectives

ACCCRN has aimed to both improve the capacities of cities and their communities, while encouraging new approaches and practices among all stakeholders. The desired outcomes of ACCCRN included:

- Capacity – there is improved capacity to plan, finance, coordinate and implement climate change resilience within ACCCRN cities;
- Knowledge, learning and deepening of experience – individual and shared learning and practical knowledge to build UCCR deepens the quality of awareness, engagement and application by ACCCRN cities and other stakeholders;
- Expansion, networking, scaling-up - urban climate change resilience is expanded, with ACCCRN and new cities sharing experience through existing and new networks, taking action through existing and additional support (finance, policy, technical) generated by a range of actors.

1 INNOVATIONS FOR IMPACT

ACCCRN has been the source of new technologies, processes and partnerships that have helped to improve local strategies to tackle climate change impacts. These innovations present significant opportunities for replication in other cities facing climate change vulnerabilities.

Tools for Detection, Monitoring, Warning, and Raising Awareness

Rapidly urbanizing cities and shifts in weather patterns and climate mean that communities require support for improving planning and forecasting.

- **In Semarang, Indonesia, Mercy Corps Indonesia** initiated the Actions Changing the Incidence of Vector-Borne Endemic Disease" project (ACTIVE), as a reaction to the city's elevated dengue fever incidence rate, which has been the highest in Central Java Province since 2008. Applying a flexible and community-based dengue fever monitoring and information system, the project has curbed spikes in the mosquito-borne disease in designated areas. Mercy Corps Indonesia worked to train community champions as well as ward health centers about the risk of dengue infection and how climate change increases the dengue risks.

  This new system provides more comprehensive data on dengue fever cases, addressing gaps in the city's monitoring effort which usually relies on hospital admissions information. Under the new system, community members report dengue fever cases via text messaging. Initially piloted in six different districts in 2016, the project has received more than 6,300 reports from local residents. Although there was a spike in dengue fever infection citywide, the dengue infection rate has dropped by roughly 50% in each of the pilot areas from 2015 to 2016. Recognizing this success, the Mayor's Office is considering funding allocation to replicate the warning system and awareness raising city-wide in 2017.

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- A city of over 1 million people, **Can Tho, Viet Nam** is only 0.8 meter above sea level. Climate change threatens to bring about a sea level rise of up to 1 meter, threatening to displace around 18 million people in the Mekong Delta. Salt water – which can destroy crops - is already encroaching on rice fields in the region that produces roughly half of the country's rice production. In 2013, **the Institute for Social and Environmental Transition (ISET)** in Viet Nam worked with the city to set up a real time monitoring system to track salt levels along the river system. It has enabled communities to be more prepared to alter crop practices and to shore up defenses in a timely manner. In March 2016, the system triggered SMS alerts when unsafe salinity levels were breached for the first time. The warning enabled local authorities and communities to take preemptive actions.

- Poor populations in India do not have access to adequate or affordable healthcare diagnosis. As part of an ACCCRN grant to **Intellecap**, a social business developer, Bosch Healthcare and GV Meditech India jointly developed a mobile malaria detection device that can radically shorten the testing time while also reducing costs. After successful pilot testing, Bosch is now refining the detection device to make it applicable to other diseases, including dengue fever. The project also collects infection clustering data from resident citizens via a cell phone application. This helps local authorities to take steps to eliminate vectors such as standing water while also raising awareness among local people about dengue fever risks and the active role they can take in prevention.

- Heat stress presents a significant threat to health, as well as to economic productivity in cities throughout Asia. Double-digit drops in manufacturing productivity in South East Asian manufacturing hubs are predicted to take place across the region over the next 30 years because of heat. Research by ACCCRN grantee, **the Indian Council for Research on International Economic Relations (ICRIER)**, indicates that between 1971 and 2009, manufacturing output in India may have already decreased by at least 3 percent relative to a scenario without any warming.

  The Center for Community Health and Development (COHED), has successfully reduced the impacts of worsening heat stress on workers in **Da Nang, Viet Nam**. COHED has been working with three of the city's leading enterprises: a steel manufacturing plant, a mining company, and a construction company, to help reduce heat-related illnesses and fatigue among their workers. Outdoor workers are exposed to daytime highs, humidity and direct sunlight. A guide to implementing heat stress prevention measures for businesses and workers has been developed, along with visual messaging tools such as posters as well as flip charts highlighting the need for light clothing, hydration and rest times. COHED worked in conjunction with several city government departments and influenced a local vocational training center, successfully integrating heat stress into regular occupational health and safety training. This project gained national attention and in December 2015, the Ministry of Labor, Invalids, and Social Affairs (MOLISA) integrated heat stress into occupational safety and hygiene training countrywide.

- **Hat Yai**, the commercial hub of Thailand's southern province of Songkhla and **Thailand Environment Institute (TEI)** has worked to reduce the severity of flood damage and to involve local people in flood management practice. Hat Yai has experienced seasonal floods at near yearly intervals. Its geography makes it inherently vulnerable to flood events: the city sits on a low-lying floodplain area and is flanked by hills which means that flood waters can flow very rapidly after heavy rainfall. The situation is exacerbated by rapid urban development. Following prolonged and widespread flooding in 2011, Hat Yai's city hall began using technology to monitor water levels and provide early warnings in addition to the use of existing drainage channels. More recently, Hat Yai launched a dedicated website, www.hatyaicityclimate.org, to help with disaster preparedness. The site provides live closed-circuit footage of water levels at different parts of the river basin, providing warning when flood waters are coming and where in the city is most affected at times of flood. The website has kept people informed and prevented inaccurate rumors about the floods from spreading as part of overall awareness raising of the community role in flood prevention. In the wet season, the site has got over 100,000 visits per day.

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Measures that Promote Ecosystem Services and Livelihoods

Local communities must be supported to build flexibility and diversity into their livelihood options in order to make them more resilient. Urban poor populations often rely on ecosystem services that are threatened by urbanization as well as unpredictable weather patterns.

- In **Gorakhpur, India**, local farmers had borne the brunt of less predictable climate extremes such as heavier rainfall. Their livelihoods have also been affected by rising food prices. To support local people with climate-resilient and sustainable farming, **the Gorakhpur Environmental Action Group (GEAG),** an ACCCRN grantee, implemented a Climate Resilient Urban Agriculture project to develop low-input and more diverse agricultural methods. These include recycled sources for bio-fertilizer and planting water-log tolerant seed varieties along with approaches related to enhancing diversity and complexity through time and space management. GEAG provided participatory orientation seminars in two of the city's wards and across 30 farms. Reaching approximately 18,000 farmers, the project has bolstered their household incomes. These new systems provide autonomy, income and flexibility for farmers and their families, because if one subsystem fails, others will be able to resist changes in weather. A key indicator of success in this project is the absence of distress-selling of land in the city in the last two years. Some farmers have even bought new land to carry out agricultural activities, as it is perceived as being profitable. GEAG reported that agricultural productivity in and around the city has significantly increased and that even the incidence of some social problems such as alcoholism or domestic violence has diminished.

- In **Semarang, Indonesia**, ecotourism in the mangroves has become a new revenue source for local people, thanks to a project implemented by **The Bintari Foundation**, with support from **Mercy Corps Indonesia**. Semarang is an important economic hub in central java, with many of its livelihoods connected to the Java Sea. Because of rapid urbanization, increasing temperatures, and sea water rise, mangroves which were once abundant around the city are now only 11 percent of their original density compared to the 1990s. The project has seen the planting of almost 330,000 mangrove seedlings through community-led projects in the city.

Design and Engineering Solutions

Low Cost design interventions help to strengthen the hard wiring of cities, building resilience for communities in low cost and effective ways.

- In **Surat** and **Indore, India**, the increased frequency of extreme heat events inspired an ACCCRN partner, **TARU**, to research and develop low-cost and low-carbon intensity solutions for improving thermal comfort in buildings in the city. Average temperatures as well as extreme heat events—like those experienced in 2015—are expected to increase in frequency in India. Cities like Surat and Indore are projected to experience an average rise of 2-6° by around 2045. Taking into consideration the "Urban Heat Island" effect caused by impervious surfaces, an additional increase in average temperatures of up to 5°C can be expected in built-up areas.

Along with real estate developers and paint manufacturers, TARU launched a national competition for engineers and designers to devise new solutions for adapting homes and offices using low-cost technologies that improve

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thermal comfort for building users. These interventions came in a variety of forms and included bamboo screening, the use of insulated mortar or heat resistant tiles, the use of recycled china for creating reflective roofing coatings, or experimenting with low-cost roof shading materials. These approaches aimed to reduce room temperatures mostly through deflecting sunlight from absorbent surfaces. As corrugated iron is traditionally used by low income populations, rooftops, but also façades were a key focus for design interventions in order to reduce heat. Some of the designs tested indicated a reduction in indoor temperature of 4 to 6 degrees. The most widely adopted, and simplest medium was reflective paint, a solution that is accessible to all income groups in the city, costing around 25 rupees (or US$ 0.30) per square foot.

Photo Credit: Lisa Murray

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- In **Da Nang, Viet Nam**, urban poor populations have settled on the coast and along waterways, making them vulnerable to flooding and frequent typhoons that strike the city. In 2006, typhoon Xangsane resulted in the complete collapse of almost 1,300 houses and the partial or total loss of roofs of 13,000 houses. **The Institute for Social and Environmental Transition (ISET)** in Viet Nam teamed up with the Da Nang Women's Union to assess, evaluate and design houses that are specifically adapted to withstand such extreme weather. The 8 most vulnerable communities have benefited from a total of 425 new and adapted storm resilient houses up until 2017. This project benefits the lowest income groups by establishing a revolving credit and technical support system for financing housing upgrades, it also offers small loans to small businesses in the city, helping them to develop creditworthiness. The project group developed low-cost as well as flexible designs that have features such as trap doors and exits for rising floodwater and reinforced core structural elements that protect against high winds. During typhoon Nari in 2013, a total of US$41 million of damage was inflicted to the city, including over US$4 million of damage to homes. All of the 244 houses that had benefitted from the program survived unscathed. This project is being scaled to other parts of the city thanks to funding from the Nordic Development Fund who is also carrying out feasibility studies for extending the program in entire Da Nang. The project received a prize as part of the "Momentum for Change" initiative during the UNFCCC Conference in Lima, Peru in 2014.

- Residents of **Bandar Lampung, Indonesia** have used biopores, small holes dug into the ground and surrounded with organic matter, as a low-cost and effective way to tackle drought and flooding. In previous years, many coastal and hilly villages of this city in Indonesia were forced to endure water scarcity during the dry season. They usually had difficulty in securing sufficient groundwater for their wells and, as a result, had to buy water for everyday consumption. During the rainy season, communities were also prone to flooding, experiencing extremely high rates of surface water runoff—partly because much of the city's land has been paved over making hard for rainwater to be absorbed into the ground. Less predictable impacts of climate change have made things worse.

To address these challenges, **Mercy Corps Indonesia** has executed a biopores project across the city's four sub-districts, working with local communities and partners including Mitra Bentala, a non-governmental organization. The project involves both advocacy and capacity building. Biopore centers have been built in surrounding villages, where citizens are able to learn about the method, and gather tools and support for digging their own biopores. Biopores have increased the capacity of the soil to absorb water and thus reduce flood risks and boost groundwater storage. With about 100,000 biopores now in the city's four sub-districts, flooding has been more manageable.

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Processes that Advance Multi-stakeholder Engagement

Core to ACCCRN has been a process of engaging diverse stakeholders and building shared understanding of the linkages between urbanization, climate change, and poverty and vulnerability. This process has also been critical for building ownership over measures that can be taken to strengthen resilience locally.

- An ACCCRN project, funded by The Rockefeller Foundation and coordinated by **the Thailand Environment Institute (TEI)**, has helped urban poor groups in Thailand's northern province of **Chiang Rai** to increase their food security and become more resilient to climate change effects.

  Over the last decade or more, urban poor populations have been affected by changing rainfall patterns, increasing drought and rising temperatures. As a result, their crop yields had fallen. Many farmers, urban poor groups and small holders then opted for chemical fertilizer use as a way of producing more crops.

  This project raised awareness of the environmental impacts of chemical use in urban farming, and has introduced circular and organic farming methods as an alternative. Over 250 households were able to tap into government-supported arable land to increase their output using this new method while also building their capacity. The project has also linked up with local hospitals and schools who have started to buy their produce. Communities no longer use pesticide after understanding the impacts it could have on people, animals and the water supply.

  The project also helps initiate a more cooperative environment, where shared learning and dialogue benefit local communities and bring government bodies and the urban farming community closer together. As a result, urban poor communities have become more resilient to climate change threats.

- **ICLEI – "Local Governments for Sustainability,"** has helped develop a streamlined process to allow for more cities to undergo urban climate change resilience planning. In the Philippines, ICLEI has worked with the Office of the Mayor of Makati City to bring different governmental units and the private sector stakeholders together to strengthen their resilience to the frequent typhoons and floods that hit the city.

  Makati City is one of sixteen cities that make up densely-populated Metro Manila. Like many cities, a lack of coordination and cooperation among different local government departments makes it challenging to manage response efforts or to implement urban projects.

  ICLEI has supported local government agencies in Makati City by offering ways to integrate their current projects and to promote collaboration among departments and with neighboring municipalities. City officials have been using the ICLEI framework to identify urban systems that are vulnerable to climate change, such as water supply and transportation.

  City officials have also recognized that they need to break down the silos in which government offices operate and align stakeholders and efforts around a single overarching city plan. This has resulted in the creation of a "Climate Core Team", and a local network to connect different sectors together. The hope is that it will be possible for all of the city's climate-related plans to begin to converge.

2 POLICY AND INVESTMENT: SCALING, REPLICATION, EXPANSION

Co-financing, cost-sharing and institution-building have been important goals of ACCCRN. This has taken place on the city, national and international levels.

The City level

Along with the strengthening of existing institutions ACCCRN has seeded a number of city-level institutions, in particular through technical assistance grants developed for the production of City Resilience Strategies.

- ACCCRN's **"City Climate Change Coordination Offices" (CCCOs)** in ACCCRN cities in Viet Nam have been crucial vehicles for mainstreaming UCCR planning into local institutions, and ensuring that resilience strategies continue to evolve and capture government funding. CCCOs have been set up in 3 different Vietnamese cities (Can Tho, Da Nang and Quy Nhon).

- In 2006, 75 percent of **Surat City** flooded after an emergency release of the Ukai dam, affecting 3 million people. Through the project, Surat built a new coordination mechanism involving 13 departments across state boundaries and established a new reservoir management protocol that helped the city avert severe flooding in 2013, despite similar levels of rainfall. The project directly benefited all sections of the population of city. The project also created positive impact in reducing losses to businesses from floods.

- **The Surat Climate Change Trust (SCCT) in Surat, India** was founded to capture funding resources and formally bring together various stakeholders involved in climate change adaptation. SCCT has also been a great demonstration of institutional coordination and has provided a platform for agencies from different scales (national, state, city) to coordinate and share information about adaptation, as well as to identify and dedicate funding streams in the city. A key criterion for the trust when investing in projects is cost recovery. The SCCT is an institutional innovation of the network.

- In **Semarang, Indonesia**, Mercy Corps has leveraged funding from Zurich Insurance to scale up the flood early warning system developed under ACCCRN to reach the entire Kali Galang River Basin.

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Leverage and Replication

- The ADB-supported **Cities Development Initiative in Asia (CDIA)** has put their trust in the effectiveness of ACCRN approaches by financing the replication of certain projects. In **Indore**, a core ACCCRN city, CDIA has financed the preparatory studies for new drainage infrastructure in the city, as a direct result of the City Resilience Strategy developed as part of ACCCRN.

  Mysuru (Mysore) India, has been part of the network of cities receiving implementation support from ICLEI South Asia for replication of ACCCRN program approaches. CDIA has provided a loan to enable the city to develop a drainage infrastructure proposal that builds off the city's ACCCRN resilience planning exercise.

- **The International Development Research Centre (IDRC)** has provided US$1 million of funding over 5 years for the **Thailand Environment Institute**, an ACCCRN partner, to hold dialogues and carry out research to identify new UCCCR approaches in 8 medium-sized cities in the Lower Mekong Delta.

- **GIZ** has scaled the flood and early warning system in **Quy Nhon**, **Viet Nam** by providing additional sensors to the ACCCRN monitoring sites, thus helping more accurate prediction of storm-related threats.

- Also in **Quy Nhon**, city authorities are financing the scaling of ACCCRN's mangrove restoration project. The city government has started to replicate the solution through a second "Eastern Dike Mangrove".

- In **Da Nang**, **Viet Nam, the Asian Development Bank** commissioned ACCCRN partner, ISET, to undertake a feasibility study on scaling-up Da Nang's stormand flood-resilient housing loan project to other climate risk-prone areas of the country's extensive coastal zone. **The Nordic Development Fund (NDF)** will contribute 500,000 euros for the up-scaling of the project, envisaging an extension of the project to other Vietnamese cities.

National Level

- Following severe flash flooding in 2009 that claimed the lives of 100 people in **Quy Nhon**, **Viet Nam**, a local ACCCRN partner has implemented a hydrology and land use plan, recommending that no more development should take place on the city's flood plain. This project was noticed by the Prime Minister's office who issued a decree in 2013 calling for an overhaul of the city's master plan. A similar decree was instigated in Da Nang.

- ACCCRN's work in India has been instrumental in influencing the ongoing development of the government's **Smart Cities initiative**. Out of the 98 smart cities selected for the program, 13 have been engaged through ACCCRN or 100 Resilient Cities, pioneered by The Rockefeller Foundation. Key ACCCRN implementing partners will also be advisors to the Smart City mission. For example, TARU, with support of the National Institute of Urban Affairs, has used this opportunity for the integration of heat action plans into the Smart City agenda. Surat's flood early warning system has been included as an example for a citywide approach for this Smart Cities initiative.

- In Viet Nam, the core ACCCRN cities of **Da Nang, Quy Nhon and Can Tho** have influenced the mainstreaming of UCCR planning into the national agenda. Decision 2623 issued by the Prime Minister to be executed by the Ministry of Construction now requires that local governments undertake climate action planning.

- In **the Philippines, USAID** will launch "Strengthening Urban Resilience for Growth with Equity" (SURE), which is a US$10.6 million five-year program focused on urban climate change resilience, some of which will be channeled to the ADB's UCCRTF (see below). This program's design has been significantly informed by the lessons of ACCCRN.

Regional Level

- A most prominent example of ACCCRN's impact comes in the form of increased investment in UCCCR approaches through the launch of the US$150-million multi-donor **Urban Climate Change Resilience Trust Fund (UCCRTF)** administered by the ADB. Drawing on funds from DfID, USAID, The Rockefeller Foundation and the Swiss international development agency (SECO), an initial investment of US$40 million has leveraged US$412 million of available financing for infrastructure. As of August 2016 the fund has committed US$49 million in infrastructure investments in 8 cities (Mandalay in Myanmar, Dong Hoi, Hoi An, Hue, Vihn Yen, Ha Giang in Viet Nam, and Kolkata and Visakhapatnam in India). These investments have leveraged linked loans of US$1.5 billion from other sources. Underpinning these physical interventions the fund has so-far provided an additional US$28.7 million for technical assistance. ACCCRN cities as well as 100 Resilient Cities' network member cities are expected to be beneficiaries of this technical assistance. The Foundation is also engaged in discussions with the fund concerning its support for the creation of a Resilience Academy, which will help to capture, analyze and disseminate many of ACCCRN's lessons learnt.

- The International Center for Climate Change and Development (ICCCAD) was set up in 2012 with seed funding from ACCCRN, support from IIED and the Independent University of Bangladesh. The center provides a short course on UCCR in the region and has trained partners from many of the organizations involved with ACCCRN. A first in the region, ICCCAD has also founded a Master's program in Climate Change and Development. This year the center will welcome its third cohort whereas some alumni are already working as project officers for the center.

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3 METHODS, CAPACITIES, AND KNOWLEDGE

ACCCRN has been built through a combination of sustained engagement, a focus on institutional strengthening, and an emphasis on putting local stakeholder ownership at its core.

Iterative methodologies, such as "Shared Learning Dialogues," (SLD) have helped enhance knowledge among local political agents, civil society actors, businesses, academia and local communities about the benefits of investing in UCCR. They have also become the platforms for identifying and launching a diverse range of contextually relevant resilience building projects. Methods have been adapted and replicated according to national and local contexts as well as the strengths of the implementation partners. As a result, at least six distinct engagement models can be identified, underscoring the need for diverse approaches and different pathways within a common conceptual framework.

To date, a number of publications, peer reviewed papers and policy briefs have been produced and supported by a range of ACCCRN partners. The International Institute for Environment and Development (IIED), for example has produced 30 different publications, ranging from thematic (gender, health, disaster risk reduction) to peer-reviewed or country-specific publications which have analyzed and contextualized the work of the network.

Experts and partners engaged with ACCCRN are frequently cited in major international journals, such as *Environment and Urbanization, Climate and Development* and *the International Journal of Urban Sustainable Development*. Some key examples include:

"Catalyzing urban climate resilience: applying resilience concepts to planning practice in the ACCCRN program" (2011) by Marcus Moench, Stephen Tyler, and Jessica Lage.

(http://i-s-e-t.org/resources/major-program-reports/catalyzing-urban-climate-resilience.html)

"A systems approach to meeting the challenges of urban climate change" (2012) by Jo da Silva, Sam Kernaghan, Andrés Luque in *International Journal of Urban Sustainable Development.*
http://www.tandfonline.com/doi/abs/10.1080/19463138.2012.718279

"A framework for urban climate resilience" (2012) by Stephen Tyler, Marcus Moench in *Climate and Development.*
http://www.tandfonline.com/doi/full/10.1080/17565529.2012.745389?scroll=top&needAccess=true

"Mainstreaming urban climate resilience into policy and planning; reflections from Asia" (2014) by Richard Friend, Jim Jarvie, Sarah Orleans Reed, Ratri Sutarto, Pakamas Thinphanga, Vu Canh Toan in in *Urban Climate.*
http://www.sciencedirect.com/science/journal/22120955/7/supp/C

"Building urban climate resilience: learning from the ACCCRN experience in India" (2014) by Divya Sharma, Raina Singh, Rozita Singh in *International Journal of Urban Sustainable Development.*

"Resilience projects as experiments: implementing climate change resilience in Asian cities" (2015) by Sarah Orleans Reed, Richard Friend, Jim Jarvie, Justin Henceroth, Pakamas Thinphanga, Dilip Singh,Phong Tran, Ratri Sutarto in *Climate and Development.*

All ACCCRN publications supported by IIED facilitated research can be found here: http://www.iied.org/aggregator/sources/61

In addition to the peer reviewed articles that have emerged and grey literature, ACCCRN grantees have also produced a significant body of technical guidance that has helped spur the transfer of practical knowledge between members to those beyond the network. These products cover UCCR planning and engagement processes (e.g. the ISET or ICLEI-ACCCRN Process) as well as tools covering themes such as water management or heat stress. Key examples include TARU's "Handbook for Achieving Thermal Comfort in the Built Environment" or ISET Viet Nam's guide to "Sustainable Livelihoods in Coastal Communities". Over time, this corpus has been recognized as the first generation of guidance on UCCR that has positioned several ACCCRN partners as expert resources in other programs.

There are several examples of ACCCRN partners that have expanded their portfolios, scope of practice, and depth of expertise on UCCR. As a young field, at the projects' inception, few – if any—organizations had established approaches for dealing with the combined challenge of climate change, urbanization, and vulnerability. Today 30 or more organizations associated with ACCCRN are actively working toward UCCR. Some examples include:

- In 2010 ISET Viet Nam set up its office in Hanoi. This office has gone from strength to strength and has tapped into an appetite among public servants in Viet Nam for climate change policy innovation. In parallel, at their headquarters in Boulder, Colorado ISET's UCCR specialism has flourished, for example receiving funding for research from DfID. With a focus on rigorous and technical research in Boulder, the new Viet Nam office has been able to clearly focus on implementation. The Viet Nam office significantly benefited from institutional leverage thanks to its multiple connections with Ministries: the Ministry of Construction, the Ministry of Agriculture and Rural Development and the Ministry of Natural Resources and Environment. These ministries have regularly called upon ISET for advisory services. ISET's renown has also led to partnerships with large NGOs and International Organizations and donors such as the CARE, Global Green Growth Institute or Winrock International. The ADB also supported ISET's participation as part of the national delegation of Viet Nam during recent COP negotiations in Paris. Leading specialists from ISET have become leaders in their field. Phong Tran,

Photo Credit: Gitika Saksena

Photo Credit: Lisa Murray

the technical lead for ISET shared that he felt that ACCCRN had provided *"a unique environment for technical staff from ISET-VN to learn and to contribute knowledge to urban climate resilience".*

- The Gorakhpur Environmental Action Group (GEAG), an environmental NGO in Eastern India has also significantly expanded as well as deepened its skills and institutional impact through involvement with ACCCRN. A local NGO based in the city of Gorakhpur with a focus on eastern Uttar Pradesh now is operating nationally with a policy office in Delhi. Their growth has also resulted in support through the DfID-funded CDKN program. The Micro Resilience project undertaken in Mahewa ward in Gorakhpur– which was also been nominated for the UNFCCC "Momentum for Change" in 2014.

- TARU has altered many of its activities across the board to focus on resilience perspectives. Their Disaster Risk and Climate Change strategy evolved to become a Risk and Resilience Strategy taking into consideration the intricate challenges of local policy implementation and support in urban areas. The institution's engagement with municipalities has also helped them to urbanize their methods, supporting methods that go across sectors. TARU's leadership in crafting the end-to-end early warning system has been earmarked by national government to become a key part of its National Smart Cities program.

- Mercy Corps Indonesia has mainstreamed resilience as a core approach across all of its programming activities since it started to play such an instrumental role in the development of ACCCRN. A crucial moment was in 2010 when ISET provided some training to members of the Mercy Corps team on resilience approaches. The stress approach subsequently developed by Mercy Corps was broadly based on this first point of interface with ISET. Mercy Corps Indonesia has also been consolidating its role as the UCCR partner of choice for the Indonesian government given their multiple roles in advising on national environmental planning and policy. Mercy Corps Indonesia has also influenced the work of the broader organization. Mercy Corps, as an international non-governmental organization, now has a strong organizational focus on resilience.

Photo Credit: Nic Dunlop

It is hard to fully capture the ingenuity and full spectrum of successes achieved by ACCCRN partners. Yet the highlights showcased in this summary offer a glimpse into what is possible through sustained action and multi-stakeholder partnerships. ACCCRN has helped to set the standard for what locally -driven climate-change resilience can look like, and indeed has inspired a new wave of action both within The Rockefeller Foundation and beyond.

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