

ADVANCING SCIENCE FOR RESILIENT FUTURES



RESEARCH FOR ACTION

INNOVATIONS IN LEARNING

COMMUNICATION & NETWORKING



*Enhancing scientific capacity to inspire informed
action on global environmental change*

About START

START, founded in 1992, promotes research-driven capacity building that advances knowledge generation and sharing on global environmental change issues. Our work is carried out by regionally based centers and affiliates in Africa and Asia-Pacific, together with the International START Secretariat based in Washington, DC.

We promote capacity development through activities such as grants and fellowships for research and assessments, curricula development, advanced training institutes, and multi-stakeholder dialogues that promote outreach to decision makers. START's work advances science and strengthens interactions between science, policy, and practice in the areas of disaster risk reduction, land-use/land-cover change, biodiversity conservation, urban development, human health, water resources management, agriculture and food security, and regional climate modeling and climate services.

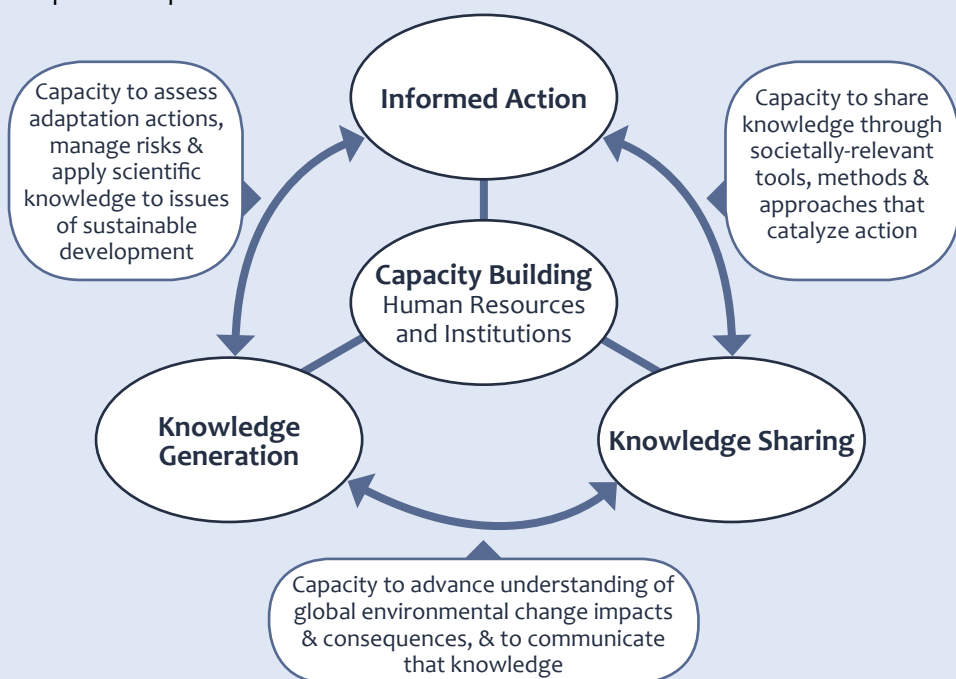
On an annual basis, START engages over 1,000 scientists, policymakers and practitioners from developing countries in its research, training and communications/outreach programs.

Countries in Africa and Asia-Pacific Participating in START Activities (2011-2013)



Creating Opportunities for Knowledge Sharing & Collaboration

START programs create opportunities to bring together diverse groups of individuals for exchange and collaboration. In such spaces, START and partners facilitate exercises and experiences that stimulate dialogue and debate, tease out answers to challenging questions and shepherd participatory processes of investigation, discovery and reflection. Shared experiences between participants form a strong foundation for follow-on collaboration and partnerships.



Enabling Research for *Action*

START's programs strengthen capacities of researchers in Africa and Asia-Pacific that enhance the flow of knowledge, information and ideas between researchers and decision makers. This enables knowledge to more effectively catalyze action.

Fostering north-south collaboration

Collaborations between scientists in different regions strengthens the knowledge base concerning global environmental change. In 2012, START launched the *Partnership Enhancement Awards* program, which enables African scientists to develop partnerships with US scientists for collaborative global environmental change research, including proposal development and preparation of joint publications. The program fosters greater integration of science and scientists from Africa with international research and assessment programs and regional initiatives on global environmental change research, thereby enhancing research, training and networking opportunities for African scientists.

Partners: US Global Change Research Program, US National Science Foundation

Informing decision making on disaster risks and climate change

South Asia's rapid development, while providing opportunities for economic growth, has increased the region's vulnerability to natural disasters. START supports collaborative research in the areas of climate change adaptation and disaster risk reduction in South Asia through grants to interdisciplinary teams of researchers.

Research focuses on how recent disasters serve to inform future decision-making and enhance adaptive capacity through the integration of disaster risk reduction and climate change adaptation into policy and practice at varying scales and sectors of governance structures.

Partner: Climate Development Knowledge Network

Transport infrastructure in South Asia's mountainous regions is vulnerable to landslides that block goods and services from reaching isolated areas





Advancing knowledge about global environmental change in Africa

Africa is facing significant challenges related to urbanization, environmental protection and climate change. The complexity of these global environmental change issues requires multiple perspectives coming together to build understanding and catalyse action. Through START's *Grants for Global Environmental Change Research in Africa* program, research projects are designed not only to find answers to scientific questions about global environmental change, but also contribute to informed decision-making and local action through outreach. Researchers share their results and engage communities and policy makers in dialogues through events like radio programmes and workshops.

In recent years, START has supported interdisciplinary research teams led by investigators from an African university or non-governmental organization. These investigators connect with peers at other institutions and in other countries to create new opportunities for collaboration and networking across both disciplines and borders.

Over the last 3 years, START has awarded research grants to 32 teams in 14 African countries to examine issues surrounding global environmental change, agriculture and food security - and their linkages to ecosystem services and sustainable livelihoods.

Partners: US Global Change Research Program, National Science Foundation & the Climate and Development Knowledge Network

116
research projects
since 2004

50+
articles
published

mentoring for over
200
young scientists

In Nov. 2012, recipients of 2011 START grants gathered to share their research results and experiences on how climate change is impacting agriculture and food security in Africa. Participants in the Learning Forum expressed a common desire to integrate research with development efforts that directly affect people, and emphatically identified more action-oriented research and communication as a way forward. Strategic and effective communication is not just an important part of the research experience, but also required in order to achieve research objectives.

To learn more about Learning Forums, see “Creating spaces for sharing knowledge”



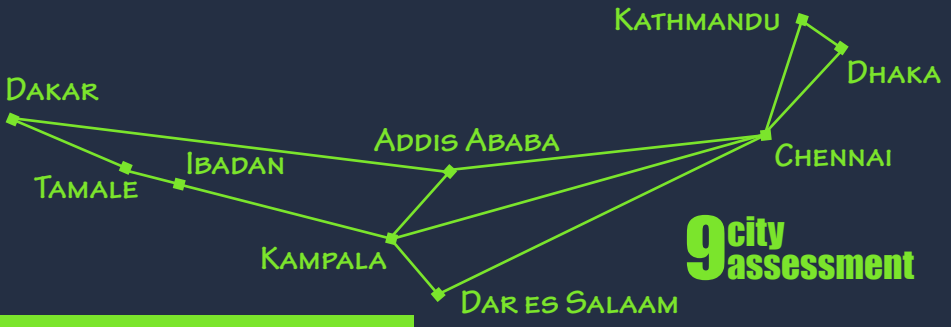
Strengthening understanding of risks to coastal cities

START supports capacity building efforts for the *Coastal Cities at Risk* project, which promotes research and knowledge exchange between cities in Southeast Asia, West Africa and Canada to inform development of strategies and methodologies that integrate climate change adaptation and disaster risk reduction. The objective is to develop the knowledge base and enhance the capacity of mega-cities to successfully adapt to and cope with risks posed by the effects of climate change, including sea level rise, in the context of urban growth and development.

Partners: START Southeast Asia Regional Research Center & University of Western Ontario, Canada

Advancing understanding of urban/peri-urban agriculture in the global south

Urban and peri-urban agriculture (UPA) provides an important source of fresh vegetables, poultry, eggs, dairy and other non-staple foods to cities, thus contributing to dietary diversity in urban areas and stimulating economic activity in the urban food system. However, UPA systems are under pressure because of rapid urban growth, urban pollution and climate change. START is partnering with several organizations to undertake a 9-city assessment on urban and peri-urban agriculture for the purpose of better understanding and characterizing threats to UPA and to identify appropriate actions to ensure its sustainability in the long term.



Partners: UN Environmental Programme (UNEP), World Meteorological Organization, Intergovernmental Panel on Climate Change, University of Ghana, University of Dar es Salaam & Bangladesh Centre for Advanced Studies

Supporters: European Commission, UNEP, US Agency for International Development

training for PhD students **14**

5 journal articles published since 2011

26 news articles featuring the project/research



Cities like Manila (above), Vancouver, Lagos and Bangkok face increasing risks associated with sea level rise and extreme events

Building a community of climate change experts

Alumni of the *African Climate Change Fellowship Program (ACCFP)* represent a cadre of climate change specialists who are ready and willing to promote and facilitate adaptation research, education and decision-making across Africa. Since the program's inception in 2008, nearly 100 ACCFP Fellows have been matched with universities, research centers and other Host Institutions across Africa where they collaborate with mentors to implement individually designed projects that, for example, assess and prioritize climate risks, investigate current practices for designing and implementing adaptation actions and/or consider approaches for integrating adaptation with planning and practice.

All Fellows also participate in periodic ACCFP workshops and seminars that add value to the fellowship experience. Many such events are organized in conjunction with relevant international conferences or discussions in order to expose Fellows to the extensive range of expertise, interests and debates that exist within climate change communities in Africa and abroad. The comprehensive design of the ACCFP allows START to provide holistic Fellowship experiences that include research funding complemented by specialized trainings and targeted opportunities for national, regional and international exchange and collaboration.

The next phase of the ACCFP, expected to kick-off in late 2013, will introduce intensive adaptation short courses for practitioners and graduate students.

Partners: ACCFP Secretariat at the Institute of Resource Assessment of the University of Dar Es Salaam & International Development Research Centre (IDRC)

Early supporters: Climate Change Adaptation in Africa program - a joint venture of IDRC Canada and UK Department for International Development

94
alumni

over **100**
institutions

Encouraging Effective *Communication & Networking*

START fosters opportunities for interaction and dialogue between scientists, policy makers and the broader public, which is essential for transforming knowledge into action.

.....

Nurturing the development of young scientists

START champions the participation of young scientists from Africa and Asia in national, regional and international conferences and workshops. Rooted in the values that originally motivated the formation of START, young scientist support of this kind aims to elevate the voices of developing country researchers in scientific discussion and debate while also enabling the development of new skills and connections that broaden their professional impact and networks. START enables many young researchers to not only learn from others by exposing them to the most recent advances and experts in their fields but also present their own work in an international setting, opening doors for future collaboration and exchange. Recently, START supported the participation of 9 African delegates in the 2012 Planet Under Pressure conference and 5 young African scientists in the 2013 PAGES Open Science Meeting. In addition, START periodically funds the participation of a number of developing country scientists and practitioners as observers to the annual UNFCCC Conferences of Parties. Every 3-5 years, START organizes its own international young scientist conference that brings together 200-300 early- to mid-career scholars from across the globe to share research and experiences related to global environmental change, sustainability and resilience.

COP-17 in Durban, South Africa



World Climate Research Programme
Joint Scientific Committee, Zanzibar

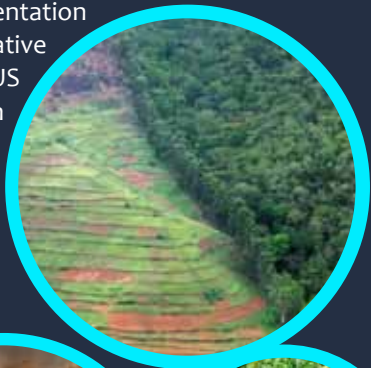
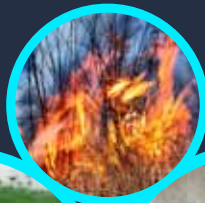


Supporting networks for land use & land cover change science

Although earth observation data are readily available to high-end users based in developed countries, access to data remains a primary challenge for developing country scientists, practitioners and decision makers who need it for natural resource management and the development of coping strategies to reduce vulnerability to change. Through the *Global Observation of Forest Cover and Land Dynamics (GOFC-GOLD)* project, START contributes to a coordinated international effort to improve access to this data, increase scientists' capacity to utilize and produce the data for scientific research and resource management through training activities and collaborative research, and foster both regional and international networks of scientists.

START supports 9 GOFC-GOLD Regional Networks, as well as implementation teams for targeting land use and cover change issues related to forestry, fire disturbance, agriculture and carbon cycles. Early and mid-career scientists receive support for full participation in activities of the networks. In addition, START has a major role in the development and implementation of fellowships for the GOFC-GOLD Data Initiative and Advanced Training Institutes held at the US Geological Survey Earth Resources Observation and Science Center in Sioux Falls, South Dakota, and at Boston University.

Partner: US National Aeronautics and Space Administration



Regional Networks:

Red Latinoamericana de Teledeteccion e Incendios Forestales (RedLaTIF)
Southeast Asia Regional Research and Information Network (SEARRIN)
South Central European Regional Information Network (SCERIN)
Observatoire Satellital des Forets d'Afrique Centrale (OSFAC)
Northern Eurasia Regional Information Network (NERIN)
Central Asia Regional Information Network (CARIN)
Southern African Fire Network (SAFNet)
West Africa Regional Network (WARN)
Miombo Network, Southern Africa



Supporting dialogue to inform action

START promotes more effective communication between scientists, policy makers, development professionals, the private sector, media and civil society organizations through national and regional science-policy dialogues. The dialogues examine the latest findings from the research community, determine potential entry points for transiting from knowledge to action, and identify further knowledge and capacity needs for supporting planning and policy measures along critical knowledge themes such as urban development, disaster risk reduction, agriculture and food security, health, land-use and biodiversity conservation. Over the past three years, START has convened national-level science-policy dialogues across Africa and Asia assist in IPCC outreach, as well as regional dialogues that bolster the efforts of the Asia-Pacific Network for Global Environmental Change and the Climate Change, Agriculture and Food Security Initiative.

Enhancing scientific writing skills through writeshops



Explaining climate change risks to herders in Mongolia

Raising the visibility of science through strengthening scientific writing skills

Creating a space in which authors can separate themselves from day-to-day demands and focus on completing their manuscripts, proposals or reports is one of the goals of START writeshops and writing retreats. Providing intensive training in scientific writing and the peer-review process is another.

The design of every START writing event is unique but blends elements of facilitated training, expert and peer review processes, one-on-one writing consultations and targeted personal writing time. Writeshops tend to be directed towards early career scholars who have yet to publish extensively, if at all, in academic journals. Participants progressively revise and refine a scientific manuscript and are matched with writing mentors who advise them before, during and after the event. After the writeshop, the polished manuscript is submitted for peer-review.

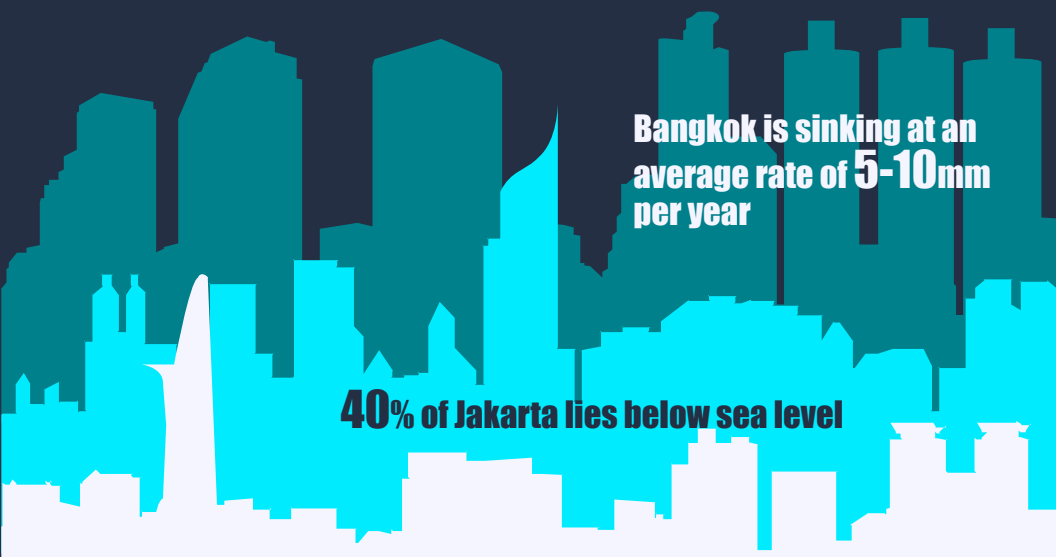
Writing retreats tend to emphasize one-on-one skill building and dedicated writing time for middle career academics. Collaborative paper writing is also a common element in the retreat setting. An open access, special issue of the Elsevier journal *Environmental Development*, published in January 2013, was the output of a 2012 START Writing Retreat for alumni of the African Climate Change Fellowship Program.

Cities at Risk - Hotbeds of Opportunity?

Global environmental change is expected to exacerbate the risks and vulnerabilities inherent to the multi-stressor context of urban systems. Indeed, climate change will aggravate existing urban challenges and likely add different, if not potentially more damaging, layers of risk that will continue to threaten urban wellbeing and growth. However, cities also offer opportunities for innovative collaboration and policy responses to climate change. For these reasons, climate risk management and adaptation in urban areas, particularly in coastal cities at risk, is one of the fastest growing parts of START's portfolio in Asia and Africa.

Through its *Cities at Risk* initiative, START seeks to enhance adaptive capacities for managing and reducing risks and vulnerabilities brought on by the combined effects of climate change and rapid urban growth. In Asia, START convenes international conferences, organizes intensive training institutes and supports city-specific research, communication and outreach activities that encourage coordinated action among scientists, policymakers and the public, as well as the integration of scientific information about vulnerabilities, impacts and adaptation into planning and policy. Efforts in Jakarta, Indonesia, support collaborative urban planning by researchers, provincial governments and communities at high risk for flooding. New activities in Ho Chi Minh City, Vietnam, advocate for improved integration of social vulnerability considerations into the city's decision-making and policy processes.

In March 2013, the *Cities at Risk Workshop - Africa* brought together scientists, municipal representatives and other practitioners to identify priority knowledge and capacity needs for urban risk management and resilience in Africa. Participants' recommendations are underpinning design and development of a new 3-5 year program of *Cities at Risk* research, education and training for Africa.



Bangkok is sinking at an average rate of 5-10mm per year

40% of Jakarta lies below sea level

only 55% of Ho Chi Minh City sits 1m above sea level

Promoting Innovations in *Learning*

START promotes innovative approaches to research and education that emphasize experiential learning and that integrate teaching with research and practice. START is committed to working with universities to further enhance their potential to be active agents of change in helping society adapt to climate and global change.

Learning new approaches and fostering networks

START is committed to fostering communities of learning around critical global environmental change concerns. One important way we are meeting this objective is through Advanced Institutes, which bring together early- to mid-career scientists and practitioners from a specific region, country or thematic expertise and provide them with the enhanced understanding, skills and resources to design, organize and carry out global environmental change related studies in their own countries. These intensive training events include educational modules, hands-on and interactive exercises, and field visits.

As follow-on to its Advanced Institutes, START often offers competitive “seed grants” to participants that enable them to incorporate newly acquired knowledge into research or pilot studies upon returning to their home institutions.

Themes of past Advanced Institutes have included:

- Vulnerability to global environmental change
- Climate variability and food security
- Urbanization
- Asian monsoons and prediction of change and variability
- Forensic Investigations of Disasters (FORIN)
- Data on coastal cities at risk



Shaping future scholars and policy makers

African universities play an integral part in fostering the next generation of policy makers and scholars that address the problems of climate change and possibilities for adaptation and action. Multi-disciplinary teams of professionals and students can collaborate and learn together to address these challenges. The

30 students in first year of MSc

24 faculty involved in teaching MSc courses

Climate Change Research, Education, and Outreach Program (CCREOP) develops and implements innovative curriculum and research on climate change. Through CCREOP, the Centre for Climate Change Studies was established at the University of Dar es Salaam to coordinate a Masters of Science in Climate Change and Sustainable Development, manage a research program on climate change by providing grants and offering capacity building workshops, and organize activities to disseminate research findings and increase the visibility of climate change with policy makers and civil society.

Partners: University of Dar es Salaam

Supporters: Open Society Foundation

Climate change research in education: Developing innovative curricula

The development of problem-based and solution-focused learning mechanisms at the university level requires effective integration of teaching with research. START hosts forums that bring together research and teaching faculty from universities throughout Africa, as well as curricula development experts from within and outside the region to identify opportunities for integrating global environmental change research findings into existing and new curricula. These forums lead to training activities on innovative approaches for curricula development that are promoted within current and future education initiatives in the region.

Partners: US Global Change Research Program, US National Science Foundation





Creating spaces for sharing knowledge

START promotes knowledge sharing through Learning Forums, which are 4-5 day events organized around specific priority issues that emerge from research supported by START programs. Targeted

training sessions such as preparation of communication materials for scientific and non-scientific audiences and/or a “write-shop” exercises aimed at building participants’ manuscript preparation and proposal writing skills are an important part of the Forums. Learning Forums are a new activity that START is integrating into its regional research programs. In these events, START-supported scientists come together with other regional and international subject matter experts to share their research findings and perspectives, identify key messages for synthesis products, and develop innovative communication approaches for reaching decision makers.

In 2012, START hosted a Learning Forum for its *Grants for Global Environmental Change Research in Africa* program in Accra, Ghana. The event brought together all project teams with relevant regional experts, and representatives of policymaking bodies and other organizations that promote policy and outreach.

Advancing adaptation planning through more effective use of climate data

Africa has been identified as the priority domain in urgent need of access to climate data for adaptation planning. The *Coordinated Regional Downscaling Experiment* (CORDEX) program was instituted by the World Climate Research Program (WCRP) to develop downscaled regional climate change projections at user-relevant scales, for all terrestrial regions of the world. The first phase of CORDEX activities focused on model downscaling for Africa from the CMIP-5 suite of Global Climate Models that are a key foundation of the latest IPCC 5th assessment report.

CORDEX-Africa seeks to cultivate climate change-science skills and capacity within Africa across climatology, hydro-meteorology, and relevant biophysical and social sciences; and to foster inter-disciplinary investigations that engage users of climate information in transforming climate data into useful, usable information. To address these two critical needs, START and the University of Cape Town are developing a framework that users of climate information can deploy to identify critical points of sensitivity to climate risks. The framework is designed to encompass a set of actionable steps embedded in guiding principles for properly using climate data, and is intended to be transferrable across sectors and locations.

Partners: World Climate Research Program & Climate Systems Analysis Group at the University of Cape Town

Discovering new pathways to knowledge

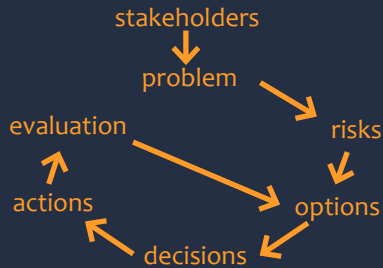
The *Graduate Student Research Opportunity in Climate Risk Management* fosters a network of young researchers interested in action-oriented and collaborative research on climate, development, and humanitarian work. The program aims to enhance knowledge about how climate threats and risks should be taken into account to improve humanitarian decisions within Africa.

Research projects conducted by graduate students will contribute to the goal of the program, which is to embed science into humanitarian work by creating tools for smart forecast-based decisions and by managing climate risks and promoting effective responses for development and adaptation. Students attended an intensely participatory workshop focused on an innovative approach: games that simulate the complexity of decision making of people and organizations confronting serious challenges on climate, disasters and ecosystems. Through presentations, small group tasks, plenary discussions and gameplay, participants discussed how new tools can support existing initiatives for climate-compatible development.

Partners: Red Cross / Red Crescent Climate Centre & Climate Development Knowledge Network

CORDEX regional domains

An experiential approach to learning can accelerate the process of sharing knowledge among diverse stakeholders, from researchers and climate experts, to development workers and subsistence farmers. Through dynamic, interactive games designed to facilitate learning and enhance understanding of different perspectives, people can quickly begin the process of collaboration toward long-term solutions. For example, some games are designed to address problems such as the interpretation and use of scientific forecasts, or the interplay of power dynamics - including gender - and responses to change, while others motivate action on climate-related diseases. Whether ruled by dice, “rock-paper-scissors” style actions, playing tag or collecting points, games provide a fun way to bring everyone together for better understanding and shared learning experiences.



Board of Directors

Gordon McBean (President)

University of Western Ontario
CANADA

Roland Fuchs

East West Center
USA

C.H. Liu

Academia Sinica
TAIWAN

Khotso Mokhele

University of the Free State
SOUTH AFRICA

Graeme Pearman

Monash University
AUSTRALIA

Heide Hackmann

International Social Science Council
FRANCE

Mohammed Hassan

TWAS, The Academy of Sciences for
the Developing World
ITALY

START Secretariat Staff

Hassan Virji

Executive Director
hvirji@start.org

Jon Padgham

Deputy Director
jpadgham@start.org

Clark Seipt

Director of Programs
cseipt@start.org

Skip Kauffman

Program Associate
cskauffman@start.org

Senay Habtezion

Program Associate
shabtezion@start.org

Abby Gwaltney

Program Associate
agwaltney@start.org

Sarah Schweizer

Program Associate
sschweizer@start.org

Katie Dietrich

Program Associate
kdietrich@start.org

Jessica Boesl

Program Assistant
jboesl@start.org



© 2013 START International, Inc.

START International, Inc. is a 501(c)3
international non-governmental organization

International START Secretariat
2000 Florida Avenue NW, Suite 200
Washington, DC 20009 USA
<http://www.start.org>
+1 202 462 2213
Printed on Recycled Paper