



START International
Strategic Plan 2019-2024

Strengthening
Capacities to
Advance
Sustainability



START

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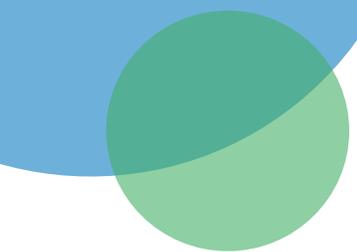


PREFACE

START's long-term presence in Africa and Asia, and its large and diverse alumni network, provide an important resource for ensuring that efforts to transcend disciplinary boundaries and actively collaborate across science-societal interfaces encompass regional contours.

Rapid growth in the number and diversity of global change science initiatives has contributed to steady gains in science capacities in Asia and Africa over the last decade. The gains are impressive when set against the global change science landscape at START's founding 27 years ago. However, progress has been uneven in that a few regionally prominent universities and research centers have achieved significant visibility and impact while a large number of secondary universities and research centers have experienced considerably slower progress in supporting skill building and knowledge production on global change science.

The demand for knowledge and skills has also changed over this period, with increasing emphasis on integration of knowledge and disciplinary expertise to address increasingly complex challenges. Such complexity underscores the need to more effectively integrate scientific and practitioner knowledge to ensure greater societal relevance of research outcomes in informing solutions. This entails better understanding of the varied aspirations of actor groups, language barriers, and cultural differences that influence norms, beliefs and assumptions in addressing sustainability challenges. START's long-term presence in Africa and Asia, and its large and diverse alumni network, provide an important resource for ensuring that efforts to transcend disciplinary boundaries and actively collaborate across science-societal interfaces encompass regional contours.



START is fully committed to pursuing multiscale partnerships that create opportunities for enabling regionally driven, comprehensive science capacity development. Building and sustaining science capacities requires substantive engagement that goes well beyond individual skill building efforts. For instance, in Africa and Asia early-career scientists experience higher levels of professional isolation compared with their counterparts in the global north, due to a lack of institutional support and insufficient research infrastructure. START is committed to reducing these disparities through linking scientific skills and knowledge development with processes that strengthen connectivity. In the context of START's work, connectivity depends foremost on building a critical mass of researchers and decision makers who can meaningfully engage on global change challenges. Using existing capacities in the region to build new capacities for the region is key to advancing capacities for regionally relevant science.

Over the next five years, START will dedicate itself to 1) developing capacities to address critical global change and sustainability challenges, 2) strengthening scientific leadership through experiential learning, and 3) advancing regional priorities in science capacity development. In carrying out these objectives, we recognize the importance of regional and global partnerships as fundamental to START's success. Over the period of this five-year strategy, we will continue to strongly engage with major international initiatives on global change science as well as pursue partnerships with regionally based research centers, universities and other institutions.

START is fully committed to pursuing multiscale partnerships that create opportunities for enabling regionally driven, comprehensive science capacity development.

START acknowledges and sincerely thanks the United States Global Change Research Program for their long-term commitment to START's mission, and we are grateful for the valuable input from START's partners in Africa and Asia who helped to shape the priorities reflected in this five-year strategy.

Ghassem Asrar
Chair, Board of Directors

VISION

A world in which developing countries strengthen their capacities to use science to advance sustainability.

MISSION

To increase opportunities for research, education and training that strengthen scientific capacities in developing countries to understand, communicate and motivate action on critical global environmental change challenges.

WHERE WE WORK

START was created in 1992 to advance science capacity development in Africa and Asia.

START's international program office is located in **Washington DC**. START has two regional centers in Asia — the Temperate East Asia Regional Center (TEA-START) located at the Chinese Academy of Sciences in **Beijing** and the Southeast Asia Regional Center (SEA-START) located at Chulalongkorn University in **Bangkok**. In Africa, START has two regional affiliates — the Climate System Analysis Group at the University of **Cape Town** and the University of Ghana in **Accra**. In addition, START has program staff in **Ouagadougou**, Burkina Faso and **Harare**, Zimbabwe, to advance START's work in West and Southern Africa, respectively.

START's Work and Approach



of Events

1

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-50% Less
Maize this year

Rising Food
Prices leading
to growing
child malnutrition

Gov't
investment
Food
Crisis

Increased
reliance on
fertilizer

Unprecedented
Access to
Sanitation

NADMO
Unable to
reach Flood Victims

Migrate South

Time

2015

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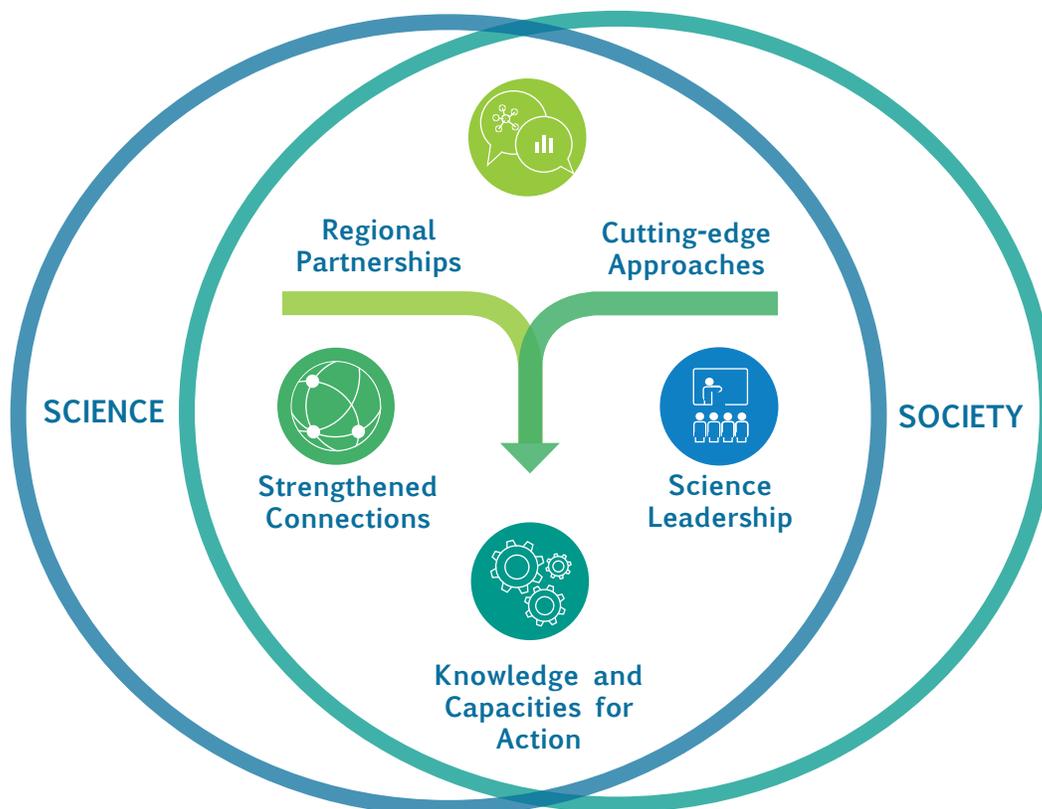
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Our Work

START strengthens capacities for global change science through integrating skill building and networking with opportunities for experiential learning. This effort requires a combination of new skills, expanded knowledge, and enhanced connectivity within peer groups, from peers to mentors, and from regionally based researchers to global research communities. We believe that capacity development outcomes are strongest where efforts to promote connectivity — within and across regions and regionally to globally — are linked to experiential learning and skill building.

Our work targets early- and mid-career researchers and professionals who work at the interface of science and action in Africa and Asia. Through our long-term presence in Africa and Asia, START has helped to elevate the role of science in informing national and regional efforts to address vulnerability and risk, as well as increasing the visibility and impact of southern researchers in shaping global responses to sustainability challenges.

Refer to pages 15-16 for a description of START's methods and approaches for advancing science capacities.



Strengthening Scientific Capacities for Advancing Sustainability

Our Partners

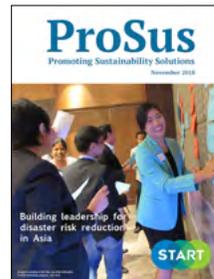
We forge diverse partnerships that include universities and research institutes, international global change research programs, intergovernmental and multilateral organizations, regional and international NGOs, and private foundations.

(For a full list of START's current partners, please refer to page 18.)

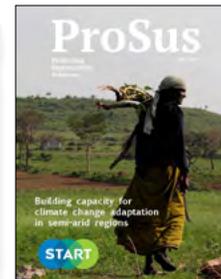
Through these partnerships, START has been able to successfully leverage expertise from global, regional and local networks and activities.

Over the next five years, we will build on this foundation of committed partnerships to advance the priorities described in START's strategic focus areas.

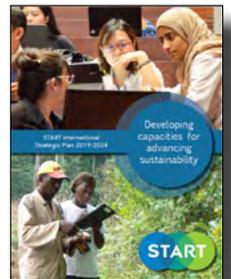
Examples of our recent partnerships can be found in START's ProSus Magazine:



[Building leadership for disaster risk reduction in Asia](#)



[Building capacity for climate change adaptation in semi-arid regions](#)



[Building resilience in southern African cities](#)





Strategic Focus Areas

The three focus areas described below will further START's long-term commitment to capacity development, leadership in science, and championing of regionally driven approaches for capacity development.

FOCUS AREA 1

Developing capacities to address critical sustainability challenges

Over the past 27 years, START has contributed significantly to strengthening scientific capacities for addressing critical challenges arising at the intersection of global change and sustainable development. The main focus of our work concerns climate change and extremes in the context of disaster risk reduction, land-use and land-cover change, natural resources and ecosystems, human health, and urbanization.

Over the next five years, we will continue to prioritize efforts in these areas, through which we will emphasize strengthening capacities for transdisciplinary research, promoting innovation in higher education, strengthening capacities in science communications, and bolstering links between global change data and decision making. These four elements will be integrated into the programs we design and are expected to strengthen science leadership outcomes. We will deploy the methods and approaches described on pages 15-16 to advance priorities under Focus Area 1.

STRENGTHENING CAPACITIES FOR TRANSDISCIPLINARY RESEARCH

START's programs create opportunities for engaging diverse perspectives and sources of expertise that span research, policy and practice. Our programs



allow START participants to work with societal partners to more effectively apply new skills and knowledge for addressing complex problems. In the next five years, we will redouble our efforts to develop skills that enable greater interdisciplinary and transdisciplinary processes, where researchers and societal partners collaborate in developing priorities for research. We will anchor transdisciplinary research training in regionally relevant cultural contexts and link training with opportunities for experiential learning. We will also seek opportunities to elevate the knowledge, experience and perspectives of transdisciplinary research communities in Africa and Asia to global platforms, including the Belmont Forum and Future Earth.

PROMOTING INNOVATION IN HIGHER EDUCATION

START has a long history of partnering with universities in Africa and Asia to strengthen research skills and develop new curricula on climate change, biodiversity, and other global change issues. Over the next five years, START will pursue opportunities to work with universities to develop new curricula and learning innovation related to global change. This effort will include encouraging ‘pracademics’ alongside traditional academics to ensure that the future workforce is equipped with the necessary skills to navigate sustainability challenges. We are currently developing an initiative on water security and higher education with the University of Ghana, TH Köln, the UN University, and the Sustainable Water Future Program of Future Earth. This effort will also engage the SDG Center for Africa and African university networks.

EXPANDING OPPORTUNITIES FOR SCIENCE COMMUNICATIONS

Effective communication plays an integral role in enabling science leadership and advancing research careers. Over the next five years, START will create opportunities for early-career researchers to gain visibility through more fully developing science communication skills. We will accomplish this through offering formal writeshops for producing scientific publications as well as through integrating science communication skill building into START’s learning forums, advanced institutes, and other key modalities. Our work on science communications also extend to training on proposal development and effective presentation skills.

BOLSTERING LINKS BETWEEN GLOBAL CHANGE DATA AND DECISION MAKING

For the last several years, START has coordinated efforts to expand access and capacity to use remote-sensing Earth observation data within regional networks of data providers, data brokers and data users in Asia, Africa, Latin America, and southeastern Europe. This has been done under the auspices of NASA’s Global Observations of Forest Cover and Land Dynamics (GOFC-GOLD) program. In the next five years, we will continue working with NASA and other GOFC-GOLD partners to promote participation of scientists and data users in international events that enhance opportunities for learning, connecting and exchanging knowledge and information across networks. Additionally, we will prioritize capacity development in support of the Digital Belt and Road (DBAR) initiative, which has strong involvement of and leadership by START’s Temperate East Asia Center in Beijing. The Digital Belt and Road Science Program promotes scientific cooperation across Asia and Africa in geoscience and Earth observation technology and applications; this includes supporting implementation of the UN 2030 Sustainable Development Goals. Within this effort to bolster links between global change data and decision making, START will also explore opportunities to advance the World Climate Research Program’s priority of bridging climate science and society.

FOCUS AREA 2

Strengthening scientific leadership through experiential learning

START is committed to ensuring that the next generation of scientists in Africa and Asia have the necessary leadership skills to effectively engage decision making and action on global change. A core element of leadership involves building aptitude for engaging in reflective, experiential learning coupled with the confidence to agilely connect science with action. In that sense, there are important linkages between Focus Areas 1 and 2. Experiential learning that reinforces leadership qualities will be an important priority for START over the next five years.



COHORT-BASED LEARNING

We will advance science leadership through convening cohorts of early-career professionals from academia, practice, and policy together with a leadership team of experienced researchers and professionals. The model is not a single intervention or one-off event but rather involves a process of experiential and problem-based learning over time. Key meeting points are interspersed to define a problem statement and work plan around a regionally salient sustainability challenge, provide tailored training on specific skill needs, and provide integrative capacity development opportunities to build confidence and leadership among the cohort.

Efforts to develop experiential confidence and leadership will be advanced through a ‘living laboratory’ approach that targets specific qualities and skills such as change management, creative and critical thinking, emotional intelligence, ethics, strategic orientation, and team science. This will be coupled with skill development for effective engagement, including design and implementation of participatory processes and interventions. The senior members’ role will be to provide essential mentorship to the cohort as they go through this learning process.

Specific outputs and outcomes of the cohort approach depend on the type of cohort group and the particular issues they are working on. The types of outcomes envisioned include:

- Enhancement of scientific skills
- Advancement of science in informing policy, practice, and societal needs
- Building a community of practice and trust spanning research and action
- Communicating and replicating principles of good practice
- Engaging in reflective learning that examines how well research and practice are able to embrace emerging challenges.

We will prioritize efforts to advance cohort-based learning with the START Regional Center for Southeast Asia in Bangkok, as well as with university partners in Africa, including the University of Cape Town and Witwatersrand University.

WOMEN IN SCIENCE LEADERSHIP

Over the next five years, START will develop a holistic women-in-science leadership program focused on learning and leading. To initiate this effort, START will establish links with other organizations that have similar goals, such as Gender InSite.

We envision the program will bring women together for connection, professional development, and wellbeing related to their scientific careers. This effort will carry forward many of the principles described above in cohort-based learning. Our core belief is women supporting other women — creating accountability and connection, overcoming obstacles, and celebrating achievements can be transformational in elevating women’s voice in science. As part of the program, we envision that participants will embark on a project that supports their vision and goals by directly practicing and applying tools that they have learned in real-time. In-person activities will be supplemented with a virtual experience that allows women to discover and cultivate the best in themselves and each other through online resources and a community connection.

FOCUS AREA 3

Advancing regional priorities in global change science capacity development

Capacity development in global change science has made significant strides in Africa and Asia over the last several years. However, these efforts have generated uneven impacts within countries and regions. Moreover, there is a lack of coherence and follow through to ensure that capacity development initiatives are sustainable and shared, and that regional priorities, ownership, and relevant cultural contexts are adequately considered in program design and post-program legacies. These issues are of particular concern when considering the growing need for systems approaches to sustainability, which requires grappling with increasingly complex problems and the need to mobilize new types of knowledge that support deeper societal transformations.

Meeting the challenges presented by this changing knowledge landscape will require moving beyond the logic of short-term one-off projects in favor of longer term processes that emphasize regional priorities and approaches for strengthening science capacities and integrated learning. Such framings more explicitly recognize the need for co-engaged partnerships between academia, politicians, civil society and communities, a re-thinking of research designs and practices that allow these partnerships to flourish, and re-design of support structures to instill greater drive and ownership of capacity development by and within regions.

Over the next five years, START will seek partnerships that amplify perspectives from the global south towards bringing a more regionally driven agenda forward; one that positively and proactively engages the donor community in more effectively supporting science capacity development. START will work with regional partners to further develop concepts and identify actions that bring together regional leaders and members of the donor community to share ideas and perspectives and explore collective priorities. START's extensive alumni network is an important resource that we will engage in this process.

START will engage science leaders from Africa and Asia in learning forums that identify and articulate regional priorities for science capacity development to address emerging challenges and opportunities.

The forums will explore different approaches for science capacity development to understand what is working well, where there are important shortcomings, what factors and conditions influence the relative degree of success in building and sustaining capacities, and how changes in conventional approaches could yield greater impact, particularly to meet the need for emerging models of more actions-focused research.

START will also seek opportunities to promote regional priorities and perspectives for science capacity development within major global initiatives. Potential partners and initiatives we will engage include:

- The Belmont Forum, particularly in our role as a supporter of Belmont engagement in the global south, as well as continuing to advance transdisciplinary training efforts in support of Belmont Forum Collaborative Research Actions.
- The International Science Council, and in particular its regional offices for Africa and Asia-Pacific. Both ISC and START have a strong commitment to the global south and we collaborate with similar organizations, including regionally based universities and research networks.
- Future Earth's science communities, globally and in Africa and Asia, through Future Earth's programs, such as the Global Land Program, the Sustainable Water Future Program, the Earth Systems Governance Project and others.
- The United States Global Change Research Program to advance shared priorities and coordination on global change topics.
- The World Climate Research Program to bolster their societal engagement priorities. START has a long history of working with the WCRP, most recently through regional partnerships on CORDEX Africa.
- UNEP, UNDP and other multilateral agencies to advance capacity development, including that related to regionally relevant implementation of the UN Sustainable Development Goals.



START's Methods and Approaches for Advancing Science Capacities

FELLOWSHIPS START creates holistic fellowship experiences that combine research support with targeted opportunities for training and collaboration. Our fellowships are offered to complementary groups of researchers and policy and practice experts that provide opportunities for learning within the fellowship cohort. Fellows are matched with universities, research centers and other host organizations within their respective regions where they collaborate with mentors to implement individually designed projects. Each round of fellowships produces a cohort of leaders who are better prepared to inform and facilitate global change research, education and decision making.

ADVANCED INSTITUTES START's Advanced Institutes provide one to two-week intensive learning opportunities that bring together early- to mid-career scientists and practitioners from a specific region or thematic expertise to develop skills and knowledge in designing and executing global change research and assessments in their countries. Advanced Institutes are facilitated by regional and global experts and include learning modules, hands-on and interactive exercises, and immersive field visits. In addition, START incorporates science communication methods and other transversal skill-building activities into this model. The START model also includes follow-on grants to participants that enable them to consolidate learning through applying newly acquired skills and knowledge in research, training workshops and/or policy engagement outreach back in their home institutions. (See Opportunity Grants, below.)

OPPORTUNITY GRANTS Throughout its programs, START offers opportunity grants that create avenues for connecting researchers within regions, providing targeted mentoring of early-career researchers by senior experts, and applying new skills and knowledge to inform specific decision making contexts. The grants are competitively based and are 1 to 3 months' duration. The scope and conditions of the grants are tailored to the objectives of a particular program and allow flexibility to design for maximum impact.

SKILLS-BASED TRAINING START has extensive experience in designing and leading skills-based training. Our efforts span training on modeling and data analytical skills through to principles, methods and approaches for co-design and co-production aspects of transdisciplinary (TD) research. One of our current priorities is on TD research training that draws on regional expertise and experiences in Africa and Asia, and that identify needs, priorities and opportunities for building and strengthening regional research communities of practice. Additionally, we are in the process of developing a set of online modules and other TD tools that reinforce training and experiential learning.

INTEGRATED RESEARCH AND ASSESSMENTS START supports collaborative research and assessment projects that are implemented by diverse teams of scientists and practitioners. Our programs stipulate that teams integrate natural and social science disciplines, focus on context-specific knowledge needs, engage early-career researchers, and prioritize communication of research results to support decision making.

LEARNING FORUMS START promotes knowledge sharing through learning and synthesis events, which are organized around specific priority issues that emerge from research supported by START programs. The events provide opportunities for START researchers to come together with other regional and international subject matter experts to share their research findings and perspectives, collaboratively identify key messages for synthesis products, develop new partnerships, and identify innovative communication approaches for reaching decision makers. Often, events include an additional skill-building component, such as a writing workshop or communications training.

WRITESHOPS AND WRITING RETREATS START promotes skill building for science writing that blends elements of facilitated training, expert and peer review processes, one-on-one writing consultations and targeted personal writing time. Writeshops are directed towards early-career scholars who have yet to publish extensively; participants progressively revise and refine a scientific manuscript and are matched with writing mentors who advise them before, during and after the event.

CHALLENGE FORUMS START creates opportunities for motivated individuals from diverse backgrounds to come together for intensive retreats where they collaboratively brainstorm and innovate science-based solutions to challenges of global change. The teams compete in their creative problem-solving and winning teams are awarded funding to support implementation of their ideas.



CONCLUSION

The three focus areas described in this strategy allow START to reaffirm its commitment to strengthening global change science capacities and catalyzing science careers in Africa and Asia.

The three focus areas described in this strategy allow START to reaffirm its commitment to strengthening global change science capacities and catalyzing science careers in Africa and Asia. The array of current and potential partners and initiatives detailed in this five-year strategy reflects START's continued engagement in the global change science arena. We are committed to maintaining a strong regional presence by placing staff in regionally based institutions and continuing to grow the social capital that START has gained through our long-term partnerships and program alumni across Africa and Asia.

To ensure that the new direction is forward looking and impactful, we will be putting into practice a strong monitoring, evaluation and learning framework. This MEL framework will determine what is and is not working and why, and thus ensure that our approaches and programs are continually improved and lead to positive outcomes, allowing us to further enable a culture of reflection and learning.

Over the past 27 years, START has significantly contributed to strengthening science capacities in Africa and Asia. Going forward, the priorities presented in this strategy will ensure that we remain innovative in how we promote integrated knowledge and learning, and enterprising in how we engage early-career professionals in global change science.



Partners

African Academy of Sciences
African Centre for Cities, University of Cape Town
African Climate and Development Initiative
African Technology Policy Studies Network
Belmont Forum
Centre for Complex Systems in Transition
Chinese Academy of Sciences
Chinhoyi University of Technology
Chulalongkorn University
Climate Analytics
Climate System Analysis Group, University of Cape Town
Educational Partnerships for Innovation in Communities Network
Fonds de recherche du Québec
Future Earth
ICLEI - Local Governments for Sustainability, Africa
Indian Institute for Human Settlements
Institute for Global Environmental Strategies
Institute for Technology and Resources Management in the Tropics and Sub-tropics, TH Köln
Integrated Research on Disaster Risk
Inter-American Institute for Global Change Research
Intergovernmental Panel on Climate Change
International Crops Research Institute for the Semi-Arid Tropics
International Development Research Centre
International Science Council
Makerere University
Manila Observatory
Met Office Hadley Centre
National Aeronautics and Space Administration
National Science Foundation
Natural Environment Research Council
Oscar M. Lopez Center
Oxfam
Red Cross Red Crescent Climate Centre
Reos Partners
Stockholm Environment Institute
Taiwan's National Science and Technology Center for Disaster Reduction
Thammasat University
United Kingdom Department for International Development
United Nations Economic Commission for Africa
United Nations Environment Programme
United States Agency for International Development
United States Geologic Survey
United States Global Change Research Program
University of East Anglia
University of Ghana
University of the Philippines Los Baños
West African Science Service Centre on Climate Change and Adapted Land Use
World Climate Research Programme
World Meteorological Organization

START International provides opportunities for training, research, education and networking that strengthen scientific skills and inspire leadership for advancing solutions to critical sustainability challenges.



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