



## Building capacity to assess and enhance climate change adaptation by vulnerable communities in southern Africa<sup>1</sup>

### STRATEGIC PLAN (2010-2020) March 2010

#### University of Florida (USA) and Rhodes University (South Africa)

**Additional Primary Partners:** Polytechnic of Namibia (Namibia); University of Namibia (Namibia); University of Botswana (Botswana); and, Southern African Development Community Regional Environmental Education Program (SADC REEP).



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## EXECUTIVE SUMMARY

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#### The problem

Climate change poses substantial development challenges and can reverse achievements made in addressing the Millennium Development Goals (MDGs). In particular, climate change will impose additional stresses on vulnerable communities, particularly those in regions that are already suffering from poverty and related issues. Many people in southern Africa, where environmental and social conditions are marginal, will face unprecedented challenges as the region becomes hotter and drier, with increasing rainfall unpredictability. Justifiably, the region was identified by the United Nations Environment Program (UNEP) and the Intergovernmental Panel for Climate Change (IPCC) as being extremely vulnerable to the impacts of climate change. Climate change is already affecting rain-fed agriculture, pastoralism, and other activities at the core of rural livelihoods in the region, and is undermining a host of ecosystem services that contribute to social welfare. This situation requires knowledge of the interlinked effects of climate change on livelihood systems, ecosystem services, and resilience and adaptation options. It requires new approaches to problem-solving in Higher Education. **This Higher Education for Development Climate Change Program (thereafter HEDCCP) is a 10-year program that emphasizes transformative learning approaches that draw on situated knowledge development produced through trans-disciplinary research.** In content and focus, and **through new pedagogical approaches, the HEDCCP addresses the development challenges posed by climate change in southern Africa, with a particular focus on the natural resource-dependent communities that are most vulnerable to climate change.** It seeks to develop the knowledge needed to inform key scientific and education policies in southern Africa. The ultimate goal is that *by 2020, natural resource dependent-communities in southern Africa will be more able to adapt to climate change and to mitigate its deleterious impacts with the resultant improvement of life quality, as a result of innovative university-led research, training, communication, and stakeholder engagement activities.*

There is a critical need to develop the capacity of graduates, researchers, government officials, and local communities to research, understand, and respond to the livelihood threats of climate change at multiple scales. While universities in southern Africa have an interest in climate change issues, they lack the capacity to integrate community-based approaches to climate change adaptation into teaching, research, and community engagement programs.

At a broader level, the African Union's Second Decade on Education in Africa emphasizes the importance of revitalizing Higher Education (HE) in Africa. Southern African universities are being encouraged to take this challenge through introduction of new research programs, transformative teaching and learning, and stronger community-based research and teaching programs. Southern African Development Community (SADC) Education Ministers, the African Union, and their international development partners (*e.g.*, the World Bank; USAID, etc.) recognize the contributions of Higher Education Institutions (HEIs) to development in Africa. Internationally, there is increasing recognition

that HE should be re-oriented to address sustainable development concerns. HE in Africa has been hitherto neglected in development efforts due to prioritization of basic education in post-independent state formation.

The threats of climate change have been recognized by national governments in participating countries, and by SADC Food, Agriculture and Natural Resources Directorate (FANR). SADC is developing a climate change action plan and runs an Environmental Education Program (with funding from SIDA and UNEP) that actively supports Higher Education Institutions (HEIs) in member countries to develop capacity for responding to environment challenges through a Mainstreaming Environment and Sustainability in African Universities (MESA) Initiative. This program is functioning well but has inadequate reach, and lacks a specific focus on climate change research and on community-based climate change adaptation, as these are new emerging issues that require novel knowledge production. Our intention is to utilize the lessons learned and educational innovations from MESA to advance research and training from HEIs in the region.

### **The HED Program on community-based climate change adaptation (HEDCCP)**

Over 70% of people in the African region are rural and highly dependent on ecosystem services for their livelihoods. It is the well-being and resilience of these people that the HEDCCP will prioritize. The HEDCCP is built on an understanding that HE contributes to development in three ways: 1. through benefiting individuals who experience the empowering outcomes of HE; 2. through social milieu contributions produced by individuals who benefit from HE programs; and, 3. through the application and relevance of research undertaken in HEIs in development settings and programs. In contemporary southern Africa, research and new forms of teaching and learning are not only needed for building a knowledge economy, but also for addressing community-based adaptation challenges to climate change and other risks that affect quality of life and human well-being. The HEDCCP recognizes that many more natural resource-dependent communities may become vulnerable to the impacts of climate change in the next 20-50 years. This HEDCCP initiative is therefore both reactive to immediate challenges, and proactive, seeking to develop a process and framework that can serve such communities in future.

### **Vision, objectives, outcomes, and results**

The vision of the HEDCCP is: *To build capacity within natural resource dependent communities and associated organizations to adapt to climate change in selected southern African countries through higher education innovation.*

The four inter-related **objectives** of the program are:

- To increase the capacity of regional universities to contribute to situated interdisciplinary knowledge on climate change adaptation (CCA) through research and service learning.
- To integrate and mainstream CCA into teaching and learning programs and practices through curriculum development and innovation, with attention to transformative learning and critical citizenry.
- To develop staff capacity for research and teaching leadership in the area of CCA.

- To ensure dissemination, application, and use of research results through innovative communication and capacity development activities and training with key stakeholders.

Achievement of these objectives will contribute towards:

- building professional capacity for addressing climate change;
- enhancing southern Africa's preparedness for the projected impacts of climate change;
- assisting society to adapt to increased risk; and,
- stimulating dialogue on the role of HE in contributing to meeting development challenges.

We expect that results of the HEDCCP **will enhance human capacity building in partner institutions (both for the host country and the U. S partner)** through: increased postgraduate numbers and new lecturers with expertise on CCA; increased research capacity and interdisciplinary collaboration with a potential to inform decision-making and the overall policy process to alleviate poverty; international recognition of research and training efforts; increased capacity to serve HE clients and society at large; increased participation of HEIs personnel in international fora on climate change (CC) and development; strengthened engagement from HEI personnel with their communities and society. Students and Faculty across campuses will interact through exchanges and share academic and field work activities through this partnership and through ongoing projects (*e.g.*, MDP, CBNRM, IDRC, see below), which will contribute to broaden perspectives and strengthen the intellectual capacity of all participants. It will enhance **institutional capacity of participating institutions** through increased external and internal funding to support HEI mission on climate change adaptation (CCA) and development; increased networking capacity of the HEI, including enduring partnerships with the private sector; increased visibility in the national arena where the HEI has a role to play in catalyzing research into action for development; and, increased competitiveness of the HEI by providing top-quality training and research services to society at large. The emergence of novel networks and the strengthening of existing ones will allow for a cross-fertilization of ideas across institutions and regions that could potentially transcend to the communities where each of these institutions work.

The HEDCCP will reach beyond the partnership itself to **contribute to southern African participating countries development goals** such as: allowing HEI to play a proactive role in shaping strategic policies for development in both CC and HE; enhancing local governments and other institutions to integrate CCA into local development and resource use planning; providing society with qualified and creative professionals who will lead structural change processes for improving people's welfare. Finally, it will be framed within **cost-effective criteria** by explicitly and strategically linking funding efforts with ongoing initiatives through participating institutions (*e.g.* CBNRM, NASA, MDP, IDRC) into HE and CCA nationally, at the southern African region level, and internationally. By actively linking to USAID missions, HEDCCP will be part of an integrated plan to enhance the livelihoods of African citizens.

Specific outputs of the first 5-year period of implementation of this HEDCCP will be the production of **55 graduates** (34 Masters and 21 PhDs); the development of **novel teaching and research approaches and materials; four working groups on climate change at each HEI** that can become powerhouses for

scientific and policy debates on climate change that can transcend academic boundaries; **site-specific plans for community**-based enhanced CCA; a **dynamic website** that timely informs and promotes CCA, actions, and HE innovation; and finally, an **international network of HEIs** with the capacity to respond to novel challenges for the benefit of society at large.

### **Implementation and partnership structure**

The Strategic Plan is the result of a participatory interactive process that allowed for the collective examination of the strengths, weaknesses, needs, and opportunities at each HEI. These assessments were followed by two workshops where the needs were formalized into strategies, considering the specific characteristics of each HEI. Ample interactions, debate, and negotiation were carried out as the strategic plan came into definition, which rendered this program a distinctly Africa-driven collaborative initiative.

HEDCCP will be implemented through a partnership of 5 HEIs in four countries: University of Florida (USA); Rhodes University (South Africa); University of Namibia and the Polytechnic of Namibia (Namibia); and University of Botswana (Botswana). The partnership will be managed and run by a 'community-based climate change research and teaching hub' at Rhodes University (RU). RU is recognized by the United Nations University (UNU) as one of the 11 African Regional Centers of Expertise (RCE<sup>1</sup>; 66 worldwide; see [www.ias.unu.edu](http://www.ias.unu.edu)) in Education for Sustainable Development (ESD). At RU the HEDCCP will be located within a cross-faculty initiative involving the Environmental Science Department in the Science Faculty, the Environment and Sustainability Education Unit in the Education Faculty, the RU Business School, and overall supported by faculty in several departments (Geography, Fisheries, Anthropology, and Botany). Implementing faculties in the southern African partner universities include the Department of Biological Sciences at the University of Namibia (UN), the Environmental Science Department and the Education Faculty and University of Botswana (UB), and the Department of Land Management at the Polytechnic of Namibia (POLYNAM). The University of Florida (UF) will be the lead partner in the USA through the Department of Biology and the Centre for African Studies with the support of the vibrant community of graduate students, the Florida Climate Institute, the Tropical Conservation and Development Program (TCD), and a diversity of departments (*e.g.*, Biology, Forestry, Geography, Sociology, Agricultural Engineering, Food and Resource Economics). UF's Fulbright Scholar and climate scientist, Professor Francis E. Putz will serve as Principal Investigator. The HEDCCP will be supported by a network of internationally active and recognized partners (*e.g.*, CIFOR, Woods Hole Research Center), and has the support of national and international policy agencies such as the Department of Science and Technology in South Africa (DST), the United Nations Environment Program (UNEP), and the Department of Environment and Tourism in Namibia. The Southern African Development Community Food, Agriculture and Natural Resources Directorate (SADC FANR) is actively supporting the HEDCCP to link it with the MESA Initiative. The HEDCCP will also actively engage with boundary partners of local institutions and communities involved in the research (*e.g.*, NGOs, local organizations and governments, etc.) through supporting social learning processes that contribute

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<sup>1</sup> Known as the Makana and Rural Eastern Cape Regional Centre of Expertise (see [http://www.ias.unu.edu/resource\\_centre/RCE%20Makana.pdf](http://www.ias.unu.edu/resource_centre/RCE%20Makana.pdf)).

directly to community agency and grass-root development outcomes. The HEDCCP has already mobilized a network of some 20 collaborators regionally and internationally.

### **Funding and Synergies**

Funding for the implementation of the HEDCCP considers a diversity of sources. By tapping on the support of HED at the initial stages, particularly with support given to the core personnel in the program as well as to basic networking activities of the partnership, we expect to be able to start a decisive fund-raising effort. The HEDCCP will benefit with linkages from simultaneous and parallel efforts at UF through the recent submission of an Integrated Graduate Education in Research and Training (IGERT) grant on climate change mitigation and adaptation to the National Science Foundation (NSF). The similarity on topics and purpose with HEDCCP makes this IGERT a natural ally of the southern African-based program. The HEDCCP will also benefit from linkages with the International Development Research Centre (IDRC) recently funded project to the Department of Environmental Sciences (DES) at RU (\$ 585,293; 2010-2013) on examining vulnerability and adaptation of local communities within the context of climate change and HIV/AIDS in South Africa.

Support from the private sector will be sought earlier in the program's development. In particular, we will endeavor to secure private sector funding of 6-month Endowed Chairs on climate change at the African HEIs. Some minor income is also expected from teaching certificate-granting short courses to representatives of boundary-partner institutions. We are convinced that partners bring other partners and so we are expecting that through the range of collaborating institutions already contacted, some of the components of the HEDCCP will be successfully expanded and sustainably implemented.

Institutionalization of the HEDCCP's efforts can be achieved through the timely delivery of results; the production of quality teaching materials that will raise the academic profile of the HEIs; the emergence of qualified professionals that will build on the existing team of lecturers and researchers at each institution; the general improvement of HE at each participating institution; and, in the long-term, the benefits that society will derive from collaborating with HEIs in providing practical solutions to real-world problems. It is through this institutionalization of efforts that HEDCCP's long-term sustainability will be assured.

The HEDCCP's strategic plan includes appendices that document the project's logical framework and workplan, as agreed by all partnership members during two workshops (Appendices 1). A yearly five-year workplan is provided in Appendix 2, including the list of indicators to be used for its evaluation. A list of institutions interested in linking with the HEDCCP is in Appendix 3, and letters of support from key collaborators and host institutions are in Appendix 4, demonstrating our strategy of establishing a HED program in a networked-learning environment. A database of potential funders is also included, some of which have already been approached (Appendix 5). The remaining appendices report on the situational assessment and consultation stages through workshops (Appendix 6), and together illustrate the processes that led to the formalization of this strategic plan.