

## U.S. Investment in Emerging Markets: Africa-U.S. University Partnerships

### *Africa-U.S. Network of Centers of Excellence in Water and Environmental Science & Technology*

#### **Tuskegee University and International Institute for Water & Environmental Engineering (2iE)**

The exploitation of natural resources for income in Sub-Saharan countries, particularly solid minerals and petroleum, devastates water resources and agricultural productivity across the continent. Experts from Tuskegee collaborate with 2iE centers to engage in large-scale research, and to train Africans, especially females, to design solutions for water and environmental challenges.

### *Sustainable Water Resources: Capacity Building in Education, Research and Outreach*

#### **University of Connecticut and Addis Ababa University**

In Ethiopia, the absence of expertise in water resource management traps the country in food insecurity, poor health conditions, low energy production, and recurrent droughts. With most faculty in Ethiopian universities holding only an undergraduate degree, this partnership strengthens graduate-level education to meet the dire need for water resource professionals and policymakers.

### *Partnership to Address HIV/AIDS in Ghana*

#### **Brown University and University of Ghana**

70% of persons infected in the world's HIV/AIDS epidemic live in Sub-Saharan Africa. While West Africa's infection rates are lower than the rest of the continent, human resources shortages also limit treatment rates to 30%, as compared to almost 60% in East and Southern Africa. This partnership trains nurses for AIDS care and develops work environments to retain health professionals and staff.

### *Centre for Sustainable Drylands*

#### **Colorado State University and University of Nairobi**

The political marginalization of dryland pastoral and agro-pastoral communities in Kenya inhibit community design of ecologically and socially appropriate solutions to poverty and food insecurity. The Sustainable Drylands Center transforms higher education and creates relevant action research that builds capacity for locally-driven solutions to resource management and poverty.

### *Trans-Boundary Animal Diseases and Zoonoses*

#### **North Dakota State University and Makerere University**

Over 60% of Uganda's population lives on less than US \$2 per day, and almost 40% of children exhibit growth stunting, resulting from a chronic lack of nutrients. Animal protein is critical in human nutrition, especially in children and persons living with HIV/AIDS, and poverty rates are 1/3 lower in houses that depend on livestock production. This partnership focuses on detection and treatment of zoonotic disease to improve livestock care.

### *University of Liberia Life Sciences Planning Initiative*

#### **University of Liberia & Indiana University, Bloomington**

Liberia's urgent shortage of doctors and nurses, with 10% of the estimated need, ranks the country near the top of global rankings of high infant and maternal mortality rates, malaria prevalence, and incidence of malnutrition. This partnership builds the applied life sciences curriculum essential to prepare students for entry into the professional health services.

### *Agro-ecosystem Services: Linking Science to Action*

#### **Michigan State University and University of Malawi**

Half of children in Malawi exhibit growth stunting due to malnutrition, and a third of total population is categorized as undernourished. This partnership focuses on building curriculum, training students, and conducting research on ecosystem services to support agriculture.

### *Agronomy and Crop Production Research and Extension Programs for Sustainable Food Production in Senegal*

#### **Ohio State University and Université Gaston Berger**

Since Senegal's independence in 1960, the population has quadrupled and soil has become 25% less productive due to desertification. With the population growing 50% faster than food production, major agricultural strategy adjustments are imperative. This collaboration designs methods to increase sustainable agriculture production while preserving environmental resources.

### *Nano-Power Africa – In South Africa, Rwanda, & Ethiopia*

#### **University of Cincinnati and University of Cape Town**

Electricity is necessary to increase life expectancy and to lower infant and maternal mortality, illiteracy, and fertility for the world's poor. The project produces solar-generated electricity for isolated & impoverished regions.

### *Rebuilding Agriculture in Post-Conflict South Sudan*

#### **Virginia Tech and University of Juba**

In South Sudan, over 70 children die each day and the country is one of the most dependent on food aid. With an abundance of fertile soil and adequate rainfall, South Sudan could be the breadbasket of East Africa. This partnership will train manpower to address immediate food security and foster long-term economic independence.

### *Building Capacity through Quality Teacher Preparation*

#### **Syracuse University and Kenyatta University**

This partnership trains teachers to integrate information technology and lab research into their curricula to better prepare students for the global knowledge economy. Through teacher enrichment this program will concentrate on improving the quality of primary and secondary education.