



## Establishment of an Early-Warning System for Infectious Diseases in Southern Africa, Incorporating Climate Predictions

(Implementation from May 2014 to May 2019)  
Country of Operation: Republic of South Africa

This project was approved as a “Science and Technology Research Partnership for Sustainable Development (SATREPS)” program in 2013. Nagasaki University’s Institute of Tropical Medicine in Japan and South Africa’s Applied Centre for Climate and Earth Systems Science (ACCESS) developed collaborative research activities under this scheme.

## Establishment of an Early-Warning System for Infectious Diseases, Incorporating Climate Predictions

Along with major difficulties such as poverty, infectious diseases are threatening the lives and well-being of people living in Southern Africa. Due to the influence of recent climate variability and accompanying trends, higher risks in outbreaks of infectious diseases are expected throughout different areas and at different intensities. This research project focuses on malaria, pneumonia and diarrheal diseases as outbreaks of these diseases are considered to be influenced by climate conditions. By utilizing a climate variability prediction model in combination with other environmental factors, an infectious disease system is being developed. This infectious Diseases Early-Warning System (iDEWS) aims to support government authorities’ management in the efficient and practical prevention of infectious diseases.

## Future System Applications to other Areas

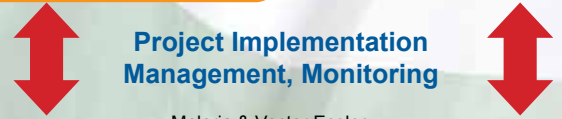
Alerts and information through iDEWS will enable government authorities to take preventative action or alternative measures for the preparation and treatment of infectious diseases. This will lead to a decrease in future incident cases and is also expected to be applied and developed further in other areas.

**Japanese side Agencies**

- Japan International Cooperation Agency (JICA)
- Japan Agency for Medical Research and Development (AMED)

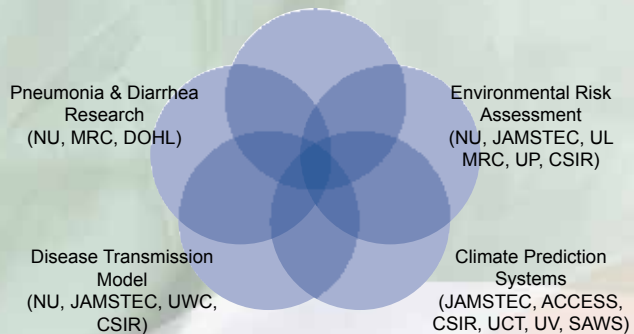
**South African Side Agencies**

- Department of Science and Technology
- National Research Foundation



### Project Implementation Management, Monitoring

Malaria & Vector Ecology (NU, MRC, DOHL, NICD, UP)



### Social Links (NU, JAMSTEC, ACCESS, UCT, CSIR)



### Participating Institute

**Japan:** (Representative) Nagasaki University (NU), Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

**South Africa:** (Representative) Applied Center for Climate and Earth Systems Science (ACCESS), Council for Scientific and Industrial Research (CSIR), South African Medical Research Council (MRC), Department of Health - Limpopo (DOHL, including Malaria Institute), National Institute for Communicable Diseases (NICD), South African Weather Service (SAWS) Universities of Limpopo (UL), Pretoria (UP), Cape Town (UCT), Western Cape (UWC) Venda (UV)

## Scientific and Technological Cooperation between South Africa and Japan

Based on the Science and Technology Cooperation Agreement signed in August 2003, South Africa and Japan have developed bilateral and collaborative research & development projects. Scientific and technological cooperation funded with Official Development Aid also promotes capacity development and mutual exchanges of knowledge and technology. 2014 also marked the tenth Anniversary of Science and Technology Cooperation between South Africa and Japan - with more than 50 research & development projects evaluated, the importance of future collaboration has been recognized.

## Exchanges among South African and Japanese Universities

As of December 2014, 24 university-to-university MoUs (including faculty level) have been signed, and it is expected that international exchanges will be increased among researchers, students and technical staff of various universities.

## African Business Education Initiative for Youth (ABE Initiative)

This program will offer 1000 youths from 54 African countries the opportunity to study masters’ courses at Japanese universities and to experience internships at Japanese enterprises, in four cohorts of students from 2014 to 2017. The program covers all fields of study such as engineering, agriculture, economics, business administration and more. The expected outcome of this program is a network of potential contributors to the development of African industries, who are also able to lead engagement with Japanese business to further economic activities in Africa.

### Program Homepage:

<http://www.education-japan.org/africa/index.html>

### Contact:

**Nagasaki University**  
Institute of Tropical Medicine  
Dept. Vector Ecology and Environment  
**Physical Address:** 1-12-4 Sakamoto, Nagasaki, 852-8523 Japan  
**Tel:** +81-(0)95-819-7809  
**Homepage:** <http://www.tm.nagasaki-u.ac.jp/satreps>