WORKING WITH COMMUNITIES IN EAST AFRICA TO MANAGE DIARRHOEAL DISEASE AND DENGUE RISK IN A CHANGING CLIMATE

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Capacity-building
Research
Product and service development
Application

CONTEXT

A Red Cross/Red Crescent pilot project implemented in Indonesia, Kenya, the United Republic of Tanzania and Viet Nam incorporated climate information and considerations in health operations. Funded by the Rockefeller Foundation, the project was the first of its kind in the Red Cross/Red Crescent Movement *(11)*.

In 2010 in East Africa, diarrhoeal diseases were estimated to have caused nearly 9% of all deaths of children under five years of age, or some 90 000 in total, according to the US Institute for Health Metrics and Evaluation (IHME). Climate change is predicted to increase the risk of diarrhoeal diseases by 23% in equatorial Africa by the end of the century, based on model projections for temperature and precipitation *(12)*. The project selected two diseases with contrasting climate–health interactions: diarrhoeal disease in Kenya and and the United Republic of Tanzania and dengue fever in Indonesia and Viet Nam. It aimed to integrate climate information in traditional health interventions to improve the response to each disease.
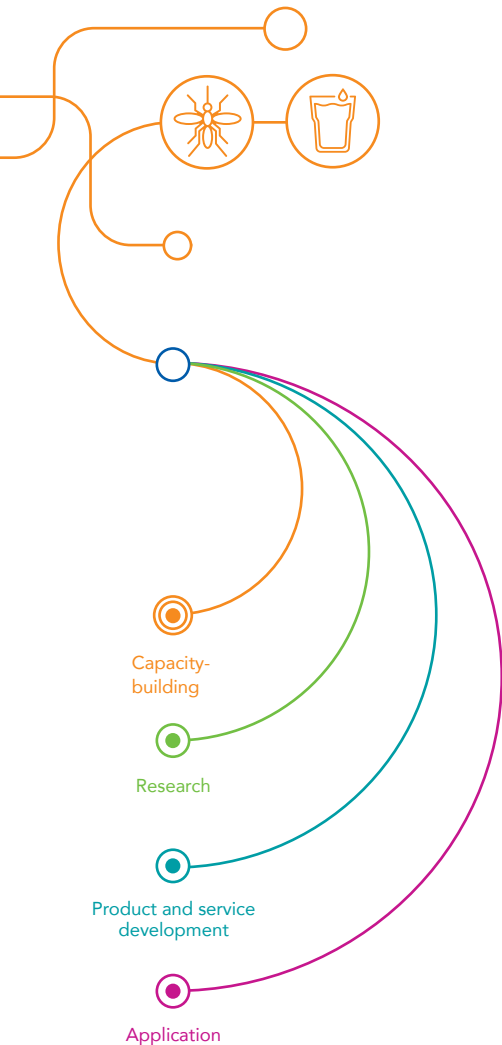
In East Africa, once-consistent rainfall patterns are shifting, and this could have significant implications for disease, creating more larval habitats for mosquitoes, washing pathogens into water sources and disrupting sanitation.

In Kenya, the project sites were located in Nyando province, near Lake Victoria – an alluvial plain vulnerable to endemic malaria, devastating floods and diarrhoeal disease. In the United Republic of Tanzania, projects were undertaken in the coastal Tanga province – one of the country's most densely populated regions where diarrhoeal disease and malaria are common.

NEW APPROACHES

The project sought to introduce 'early warning, early action' systems, allowing community-level interventions for malaria and diarrhoeal disease and reducing human vulnerability through the use of climate information.

Technical support from the Red Cross/Red Crescent Climate Centre in The Hague was provided to the International Federation of Red Cross and Red Crescent Societies (IFRC) and the Red Cross national societies that were directly involved. All four incorporated a baseline study of community perceptions of climate risks and disease, as well as educational material, training for Red Cross volunteers, contingency plans, and a final survey matching to the baseline survey.

Working with the national meteorological services, project implementers used seasonal and short-term climate information to design the educational materials and health contingency plans that informed when and where disease prevention activities should be concentrated. This climate-based disease anticipation was based on the increase in disease incidences seen in different seasons and following short-term heavy rainfall events. See Figure 3.7 for further information.

Figure 3.8 Activities and structures of climate-based disease anticipation approaches.

	SETTING	
	KENYA	UNITED REPUBLIC OF TANZANIA
ONGOING ACTIVITIES	Create awareness of hygiene, conduct hazard review.	Monitor forecast season start date.
PRE-PEAK-SEASON ACTIVITIES	Strengthen flood gates, clean water channels, de-silt rivers, stockpile water purifiers, treat drinking water, clean mosquito breeding grounds, dispose of waste, fortify latrines and homes, hand-washing campaigns.	Hold volunteer meeting about rainfall forecasts prior to advent of rainy season, clean local environment, distribute treated bednets and water purifiers, conduct sanitation campaigns.
PEAK SEASON ACTIVITIES	Open water channels and ponds, review disaster response activities.	Check that treated bednets are hung, people with symptoms are going to the clinic, conduct water/sanitation education.
PARTNERS	Provincial government, local committee, meteorological department.	Meteorological service, health department.
UNIQUE COMPONENTS	Incorporate traditional early warning signs when mobilizing community.	Seasonal calendar for non-food-item distribution.

Figure 3.9 Silas Liech, a Kenya Red Cross Society volunteer, and eight-month-old Daren Onunga. Photo credit: IFRC.

LESSONS AND BENEFITS

The project significantly increased community-level risk reduction behaviour in project locations. This included hygiene activities as well as participation in the construction of latrines in Kenya, for example. Lessons learned are focused in three areas, starting with beneficiaries' views on the relationship between climate and health. In all countries, more than half of those surveyed were familiar with the concept of climate change before the projects began. Secondly, the project demonstrated the importance of data availability to show the relationship of disease and climate indicators both at the seasonal and short-term timescale. Thirdly, scale-up of accepted health interventions is feasible if climate information gives an indication of heightened disease risk; this should be accompanied by disease monitoring and sharing of related information.