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CLIMATE AND EARLY WARNING SERVICES

GATHERING AND PROVIDING INFORMATION FOR AN UNCERTAIN FUTURE

CONTEXT

West Africa's national and regional meteorological and hydrological services are critical sources of information about changing weather and climate patterns. The data these services collect through field and space-based observations can be analyzed and packaged into products designed to meet the decision making needs of users, such as farmers and herders, whose livelihoods will be affected by climate change. Early warnings about risks, including floods and droughts, are of particular importance, and the development of early warning systems is likely to be an area of growing interest as climate variability increases.

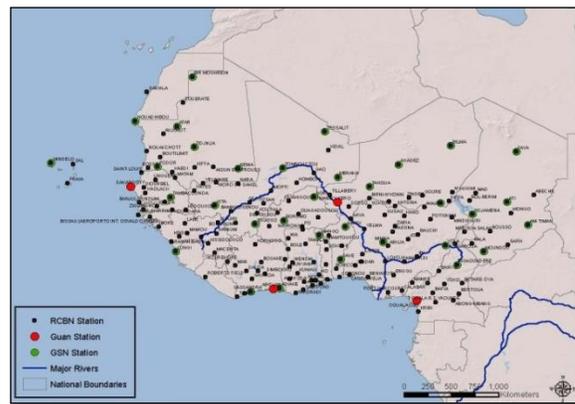
WEST AFRICA METEOROLOGICAL STATION NETWORKS

FINDINGS

The provision of climate services, including early warning systems, requires sufficient data, useful products, and efficient delivery. Each of these components, and the institutions involved in providing them, could be strengthened.

Data

The national meteorological services of all 18 West African countries collect field observations (e.g., rainfall, temperature). Space-based observations are increasingly used to supplement field observations, particularly by regional authorities. Unfortunately, the region's ground-based observation stations do not provide adequate spatial coverage, and many of these stations are underfunded and report observations only intermittently. While space-based observations are an important supplement given the harsh environment and large geographic areas not covered by ground-based stations, these measurements require calibration and verification with ground readings as well as software and technical skills for analysis. Over reliance on space-based observations can also contribute to neglect of national observation systems and development of national capacity. Many important climatologic variables that would enable more accurate climate observations are also not currently collected within West Africa.



Products

The early warning and climate services products available in West Africa range widely in quality and utility, and they are often linked to short-lived projects. The strongest institutions tend to be at the continental and regional levels, though several national institutions have begun investing more heavily in the development of specific products. Many national meteorological services provide some form of weather prediction, but many do not have the capacity to systematically deliver early warnings or longer-term climatological predictions. Given the project-based orientation of many climate information efforts, climate products in West Africa tend to be driven more by the supply of available information than by an understanding of user needs.

With a few exceptions, most national systems still need assistance to develop long-term sustainability plans, as they lack experience with marketing climate services or offering custom products to key sectors that might be able pay for them. Here, an opportunity is being missed to create national demand for early warning and other services that could save lives and enhance livelihoods. As the risk of disaster increases, effective risk reduction will require climate-proofing early warning systems to take into account both rapid- and slow-onset hazards. The importance of and demand for early warning is demonstrated by the creation of community-level early warning systems in locations where national systems are either not functioning or are not credible.

Delivery

Repackaging climate science into useful products and delivering them to end-users in a form that is understandable, timely, and actionable is a growing industry, and a number of regional and national organizations are active in this area. However, a better understanding of what information decision makers need, and how they access information is needed. Developing a market for usable information will require a greater skill base and more resources than are currently available to the organizations with the mandate to provide such services, though several national meteorological agencies have made significant strides recently. Furthermore, the flow information depends on reliable communication channels, such as the Internet, cellphones, and radio, which are still being developed in West Africa.

RECOMMENDATIONS

National institutions should increase their collaboration both within and across national governments, strengthen their observation networks, improve their capacity, and give climatologic data a higher priority than is currently the case. To better understand how such support could be offered, further analysis is needed.

Regional and national institutions need to develop the capacity to produce climate-proofed early warning systems and high-level climate services products that provide clear, timely, and actionable information. They also need to gain the skills needed to identify and tailor products to meet the needs of users. This will require additional research on the ways in which individual users integrate such information and products into their decision making processes.

At the same time, governments need to ensure that an environment for climate services is developed. This will require the creation of incentives, legal structures, and institutional frameworks, as well as a vision to guide the process. It will also require a commitment of financial and human resources.

ADDITIONAL INFORMATION

This brief highlights key conclusions from Morinière, L.C. (2013). *West African Climate and Early Warning Services (CEWS) Institutional Assessment and Research Options*. USAID. Interested readers are invited to review the full paper at <http://community.eldis.org/ARCCI>.