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Autore	Rogers David P
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Operating Models -- Demand Side: The Users -- Supply Side: The Providers -- How Economic Characteristics Fit In -- Operating Models for NMHSs Services -- Public-Private Partnerships -- Legal and Regulatory Frameworks -- Notes -- References -- Chapter 6 Guidance on Modernizing NMHSs -- In This Chapter -- Introduction -- Modernizing Advanced Meteorological and Hydrological Services. Modernizing NMHSs in Developing Countries -- World Bank Experience in NMHSs Modernization -- Recommendations for Designing and Implementing Modernization Projects -- A Changing Role for NMHSs -- Notes -- References -- Boxes -- Figures -- Photos -- Tables -- Back Cover.

Sommario/riassunto

The importance of weather, climate, and water information is rising because of the need to serve more elaborate societal needs, minimize growing economic losses, and help countries adapt to climate change. Weather, climate and water impacts societies and economies through extreme events, such as tropical cyclones, floods, high winds, storm surges and prolonged droughts, and through high impact weather and climate events that effect demand for electricity and production capacity, planting and harvesting dates, managing construction, transportation networks and inventories, and human health. The key players are the National Meteorological and Hydrological Services (NMHSs). By international agreement under the auspices of the World Meteorological Organization, they are the government's authoritative source of weather, climate, and water information, providing timely input to emergency managers, national and local administrations, the public, and critical economic sectors. NMHSs are a small but important public sector-with budgets usually about 0.01-0.05 percent of national GDP, and total annual public funding of NMHSs globally exceeding 15 billion. The problem is that their capacity has become so degraded in many regions over the past 15-20 years - primarily owing to underfunding, low visibility, economic reforms, and in some instances military conflict - that they are now inadequate. As a result, globally, NMHSs in over 100 countries, more than half of which are in Africa, need to be modernized. How much will this cost? A conservative estimate of high priority modernization investment needs in developing countries exceeds 1.5-2 billion. In addition, a minimum of 400-500 million per year will be needed to support operations of the modernized systems. These recurrent costs should be covered by national governments, but few are ready to do this. The book underscores the urgent need to strengthen NMHSs, especially in developing countries, and provides cost-benefit estimates of the return that countries can hope to achieve. It also offers a recommended approach that has been tested and implemented in Europe, Central and South Asia, and other countries. And it underscores the significance of international collaboration to access data, knowledge, and know-how of the large-scale atmospheric and oceanic conditions that drive the global weather patterns that affect individual countries. It has been conservatively estimated that upgrading all hydrometeorological information production and early warning capacity in developing countries would save an average of 23,000 lives, and provide between 3 billion and 30 billion per year in additional economic benefits related to disaster reduction.
