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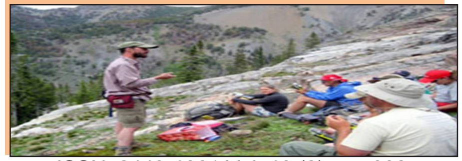

Commentary

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Significance of structures for flood control in urban areas

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DESCRIPTION

Flood control structures are designed to protect coastal and river-bank areas, which includes urban and agricultural communities, homes, and other economically developed areas, and the people living within them. These structures are used to divert flows of water, through re-directing rivers, slowing natural modifications in embankments and coastlines, or preventing inundation of vulnerable coastlines or floodplains. Dikes, spurs, levees, and seawalls regularly act because the first line of protection against overflowing rivers, floods, hurricane surges, and in the longer term rising seas. By keeping water out, flood manage systems reduce damage to physical infrastructure and assist to ensure continuation of communities' economic and social activity. But flood control systems do not completely eliminate risk. Flooding may occur if the design water levels are exceeded. If poorly designed, constructed, operated or maintained, these structures can increase risk by supplying a false sense of safety and inspiring settlements or economic activity in hazard-prone areas. Nevertheless, many development programs depend upon these structures to keep program objectives, consisting of continued food and water supplies, monetary activity, and safety from storms and floods. For example, urban initiatives (e.g., urban transport projects) in coastal cities like Dhaka, Bangladesh always depend upon effective flood control structures, which include pump stations and dikes, to maintain program effectiveness in the short-term.

Like many different kinds of infrastructure, flood control structures are regularly designed to ultimate several decades. Several climate stressors affect the efficacy and durability of flood control systems, which include modifications in precipitation, sea levels, extreme events, and resulting storm surges. Flood control systems are unique in that they can be compromised through the equal stressors they are designed to resist. For example, increase in the intensity and frequency of floods could overwhelm these structures, inflicting them to fail. These stressors will grow in importance as climate change maintains to adjust their intensity, variability, and accompanying risk potential.

To reduce climate change effects on flood control structures and the resulting damage and destruction to coastal and low-lying communities, improvement practitioners need to adapt flood control structures to future weather stressors. Adapting flood control structures will protect investments in lots of sectors, consisting of transportation, energy, and concrete applications. The resilience of flood manage systems may be increased in lots of ways. For example, flood control structures should be constructed to higher levels and with greater resilient materials and designed to resist repeated and more severe floods. Similarly, in designing flood control structures, USAID and other development organizations should consider, where feasible, constructing back-up structures to provide services in case of failure. In addition, design standards should incorporate sea level rise projections, as well as the hydrology and physiography of the watershed to reduce or avoid unintended negative impacts.

CONCLUSION

To understand the consequences for flood control structures, decision makers should identify plausible future climate scenarios to understand how relevant factors such as sea levels and extreme event intensity are projected to change. Using this information, decision makers can identify needed changes to the design, construction, and maintenance of structures. Development practitioners must understand the vulnerabilities of different structures, primarily based on location, design, and construction in addition to hydrologic, environmental, and ecosystem affects. Adaptation actions should be integrated into the overall risk management method for flood control structures.