A robust decision support framework to address climate change in Can Tho city, Viet Nam

The Issue

As the economic engine of the Viet Nam Mekong River Delta, Can Tho city is at the forefront of climate change adaptation. The city faces a number of threats to sustainable development and poverty reduction, with the leading issue being water resources management. A necessity to daily living, water is critical to households and underpins regional agriculture and aquaculture that are vital to the Delta's economy.

Existing water resources are under enormous pressure due to climate change and economic growth, which threatens adequate future water supply availability. These threats include:

- Increased exposure to floods and droughts
- Salinity intrusion from rising sea levels
- Water treatment infrastructure investments not keeping pace with rapid urbanization demand
- Unsustainable water management practices that include over-exploitation, pollution, and lack of resource replenishment

The Study

To address these threats to sustainable growth and development, recent research undertaken at the College of Environment and Natural Resources, Can Tho University, with the support of Sustainable Mekong Research Network (SUMERNET), led to the application of a Robust Decision Support (RDS) framework to better inform city managers and planning departments on improving urban water management practices. This comprehensive framework consists of several elements, based on the critical first step of involving stakeholders in discussions on water challenges, potential solutions and desirable outcome indicators. Stakeholders include local provincial government, business leaders, community groups and experts. The study consisted of a survey on urban household water demand and gender roles in household water management. It was the first study to provide detailed information on domestic use and gender roles in Can Tho City. Information collected from stakeholders, household surveys and other sources was processed in the systems dynamic model (VENSIM) and storm water management model (SWMM), which analyzed urban water quality and quantity. Findings from these models to confirm their validity, and usefulness, as well as solicit feedback, were presented at a discussion workshop with local decision makers. From this process the following recommendations were generated using the RDS framework.

Recommendations

- Work with the municipal government to increase investments in domestic wastewater treatment to cope with rapid urban growth and industrialization to reduce health risks and economic and environmental losses

- Consider the installation of large storage to harvest rain water during storms that can be used to replace ground water pumping during increasingly long dry seasons; this could be achieved by build, operate and transfer (BOT) schemes or joint ventures

- Offer targeted expertise to support planning departments in improving flood management, as floods are a leading cause of clean water scarcity

- Focus on wasteful water use in households and empowering women to take the lead in water saving activities

- Work with industry and the private sector to develop education campaigns that support them in avoiding wasteful water usage, pollution and clean water scarcity

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