

## **THEME 3 'MANAGING AND PROTECTING WATER RESOURCES AND THEIR SUPPLY SYSTEMS TO MEET HUMAN AND ENVIRONMENTAL NEEDS'**

### **Topic 3.3 Managing and Protecting Water Resources and their Supply Systems to Meet Human and Environmental Needs: Preserving natural ecosystems**

Ecosystems services are necessary for sustainable water resources management as well as for mitigating the impacts of climate change in water. The Millennium Ecosystems Assessment report indicates that aquatic ecosystems continue to be heavily degraded since the last half of the century and the trend is continuing, this limiting development.

Climate change has caused extreme weather events in both developing and developed countries making it necessary to develop and adopt systems for limiting the damage such as onsite water detentions systems, adopting urban sensitive water management systems that take climate change into account.

*Question 1: What strategies can be adopted to deal with storm water volume and pollution in the face of more extreme weather events and increased urbanization? Are there changes to infrastructure design (roadways, gutters, culverts) or to engineering of pollution sources (cars and trucks, petrol and oil formulations) that would mitigate damage to natural systems?*

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Ecosystem services describe a variety of socially-valued goods and services that human society derives from natural ecosystems. Freshwater ecosystems provide a wealth of food and fiber, water purification, fish and wildlife habitat, recreational opportunities, attractants for tourism, and opportunities for cultural and spiritual renewal. Governments, business and non-governmental organizations (NGOs) are working to find creative and innovative approaches to conserve freshwater ecosystems through market-based mechanisms, such as watershed payment schemes. Some countries, such as Brazil, are even creating the legal and regulatory frameworks to facilitate payments for environmental services.

*Question 2: The principal objective of watershed valuation projects is to establish an institutional mechanism that encourages water users to recognize the value of these environmental services. The intention is to establish the user fee based on sound economic valuation of the resource. How do you know how much money is needed to sustainably protect the watershed? How do you define sustainable?*

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As governments seek to achieve the Millennium Development Goals, particularly the goal on poverty alleviation, and develop integrated water resource management (IWRM) plans, as committed to at the Johannesburg World Summit on Sustainable Development, it is timely for the World Water Forum to hold a discussion on new thinking on how to meet basic human needs and maintain ecosystem services for people and biodiversity. It is important as these ideas are advanced and shared, that governments, the private sector and NGOs do so collaboratively, working to advance agendas that protect ecosystem services to a high degree without substantially compromising other economic uses.

*Question 3: One of the challenges in facilitating payment for environmental service water projects is overcoming the perception that one is trying to charge people for their water. How do you overcome this? How do you determine if a water user fee is the best strategy to achieve sustainable watershed protection? What other mechanisms work well and why?*

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The value of ecosystems to climate change adaptation should be incorporated into water and other development plans. However this is not very well understood in developing

countries. This is compounded by their inability to estimate the impact of climate change under different scenarios making it necessary to support countries to assess the impact of climate change on water related ecosystems in the different areas and develop strategies to mainstream ecosystems in water and other development plans.

*Question 4: What strategies and policies should be taken to promote the consideration of ecosystems in water development, management and use and what measures are necessary to enable developing countries to better forecast the impact of climate change on aquatic ecosystems and to promote the value of natural ecosystems as efficient climate change mitigation tools.*

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