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Training of Trainers Manual on Integrated Urban Water Management

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8- Ecosystems Interaction

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8.1 Introduction

The availability of freshwater is one of the most critical environmental issues of our time. Modern society depends on rivers, lakes, wetlands, and ground-water to provide water for irrigation, industry and household use. Changes in water availability or water quality – caused by climate change or human activities – could have serious consequences on human health and welfare.

Urban areas show an extremely dynamic development with rapidly increasing population, economic growth, heavy pollution and water shortage. In developing countries the urban population may double in just 15 years. The water-related problems may in the end limit its sustainable size.

Population increase, rising living standards, and industrial and economic growth have placed greater demands on our natural environment. Our activities can create an imbalance in the hydrologic equation and can affect the quantity and quality of natural water resources available to current and future generations.

Urban areas have the potential to pollute water in many ways. Runoff from streets carries oil, rubber, heavy metals, and other contaminants from automobiles. Untreated or poorly treated sewage can be low in dissolved oxygen and high in pollutants such as fecal coliform bacteria, nitrates, phosphorus, chemicals, and other bacteria. Treated sewage can still be high in nitrates. Ground-water and surface-water can be contaminated from many sources such as garbage dumps cesspools, septic tanks, toxic waste and chemical storage and use areas, leaking fuel storage tanks, and intentional dumping of hazardous substances.

Solutions involve finding sustainable ways for the urban area to reduce both its dependence on pollutants and the amount of pollutants it produces, and to properly recycle or dispose of pollutants before they contaminate soil, water, or air. Preventing pollution in urban areas is often largely a public relations task. People need to be educated about proper ways to dispose of waste. Showing each other where waste goes and the problems it can create in our watersheds is an effective way to get the message across. Of course, regulations are often necessary to reduce the amount of pollutants contaminating our watersheds.

The Millennium Ecosystem Assessment summarizes the four key findings of their study this way:

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