

MASSIVE FRESH WATER TRANSPORT: A NEW DIMENSION FOR INTEGRATED WATER-WASTEWATER MANAGEMENT IN NORTH CYPRUS

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The fresh water transport, approximately of 75x106 m³/year from Turkey should be considered as a milestone to solve the ever ending water problems in North Cyprus. This massive water supply not only covered all the water demand of different sectors, but also offered the chance to define and implement a sustainable integrated water management strategy that would consider wastewater as an integral part of the management approach. The paper intended to identify all the essential components of the integrated water management plan and to define sustainable action strategies for these components, based on related beneficial use concept. In this context, details of the water transport system were provided. Aside from municipal water demand, agricultural use, groundwater recharge and water-contact recreation were defined as major beneficial uses for priority consideration. Innovation wastewater systems based on membrane bioreactor technology were suggested for recovery and reuse of the effluents. It was recommended that all urban wastewater treatment plants be upgraded or built as nutrient removal MBRs, where the effluent could be directly used for agriculture and/or groundwater recharge; all rural wastewaters be treated in lower-technology, extended aeration plants with sand filtration, capable of delivering effluents suitable for agricultural use. The energy potential of sewage was also underlined, proposing utilization of sewage sludge for energy recovery. Novel process alternatives with high energy capture rates, such as high rate pyrolysis, gasification etc. were suggested instead of the traditional anaerobic sludge digestion. The paper also covered a brief overview on the current status of major factors and modules likely to take part in the management strategy.

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