Winning Poster Touts Benefits of Rainwater Harvesting

Photo: Vishwanath, www.rainwaterclub.org

Ms. Teshamulwa Irene Okioga, a civil engineering graduate from the University of Nairobi, Kenya, won the 2005 World Water Week Best Poster award for her poster, "Rainwater Harvesting as a Part of Water Demand Management – Pilot Case Study from the University of Nairobi, Kenya."

The poster was presented within the SIWI Seminar for Young Water Professionals and highlighted rainwater harvesting at the University of Nairobi as a water management strategy towards enhancement of institutional development and capacity building. The rainwater harvesting aspect of the project has been incorporated into an urban rainwater harvesting manual that is being prepared by UN-HABITAT's Water for Cities Programme in collaboration with RELMA. The project is also to be developed into a pilot demonstration project by the two organisations.

Ms. Okioga's poster linked water demand management with a demonstration of rainwater harvesting at Mamlaka Hostels. The hostel area included two students' hostels and a kitchen/dining unit. The poster showed the types and operational status of some of the water fittings currently used in the study area, and suggested corrective measures that may be considered as part of the water demand management based solutions. The water demand management hardware measures included retrofitting showerheads, dual flush toilets and low flow taps, and replacement of the automatic urinals with user-activated flushing mechanisms. Soft measures included an awareness campaign for the residents of the hostels as well as regular water audits.

Augmenting local water supplies

The poster also demonstrated the contribution of the rainwater-harvesting project towards water management, illustrating the benefits of urban rainwater harvesting as a strategy for augmenting current water supplies to keep pace with the increasing population, water conservation and water demand management for the University of Nairobi. The benefits included a reduction in water bills by 25%, more sustainable use of groundwater, change of attitude and increased ownership towards water demand management by students and the university administration, as well as increased awareness on the benefits of rainwater harvesting.

Through the poster's graphic illustrations, Ms. Okioga was able to demonstrate a recommended procedure for developing rainwater-harvesting systems. A plan of buildings that were considered for rooftop rainwater harvesting, the location and capacities of the tanks that were selected for implementation, the storage tanks and the guttering system were demonstrated as drawings. The illustrations also included graphs drawn for the purpose of obtaining required tank capacities by use of a graphical method and the results of a water audit in form of a bar chart.

The results showed that for the two hostels and the kitchen, which had a total available roof area of 3,000 m^2, by taking a 50% probability rainfall of 800 mm/yr, and a runoff coefficient of 0.8, the total potential rainwater supply was obtained as 1,920 m^3/yr (a product of the respective parameters). This was equivalent to a supply of 5 m^3/day, which was adequate to meet 80% of the water required for use in the kitchen and that required for flushing toilets in the two hostels.

As a "hard-solutions approach," the pilot rainwater harvesting project will serve as an example of measures undertaken to promote decentralised water management and self-sufficiency with regards to water supply, so as to reduce over-dependence on a central water supplier, and at the same time as a measure to prevent overexploitation of groundwater at the university. The system, once operated by the students themselves, will also create awareness to conserve water and monitor their demand.

In its conclusion, the poster stated that rainwater harvesting had proven itself as a tool which could complement water demand management strategies in urban areas.

Stiff competition for award

The poster committee that studied more than 60 other posters, which were selected for presentation this year, consisted of Prof. Ausaf Rahman, USA; Prof. Boniface Egboka, Ni-

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The application of an appropriate rainwater harvesting technology can make possible the utilisation of rainwater as a valuable and, in many cases, necessary water resource.

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A rainwater harvesting system consists of three basic elements: a collection area, a conveyance system, and storage facilities.

geria; and Mr. Claus Hagebro, Denmark. In his speech, Mr. Claus Hagebro, who presented the award, said the committee found that the winning poster provided a clear presentation and an important example of rainwater harvesting, and the benefits of the concept. He added that the illustrations in the poster were simple and clear. The text was easy to understand and described in a precise way the results of the project. He concluded by saying that the poster could serve as a good example for future poster presenters. ■

Ms. Teshamulwa Irene Okioga

Photo: Irene Okioga

Ms. Teshamulwa Irene Okioga is a civil engineering graduate from the University of Nairobi, Kenya. Ms. Okioga was an intern with the Regional Land Management Unit (RELMA at ICRAF) before completion of her studies. She graduated with a first class honours on October 2005 and is currently working as a consultant with the same organisation. Her poster was based on an internship assignment with RELMA at ICRAF, which she also undertook as her final year project/thesis at the University of Nairobi. Her supervisors were Dr. Zablon Oonge from the University of Nairobi, Mr. Maimbo Malesu from RELMA and Mr. André Dzikus from UN-HABITAT.

Artificial recharge to groundwater is a process by which the ground water reservoir is augmented at a rate exceeding that obtaining under natural conditions or replenishment. Any man-made scheme or facility that adds water to an aquifer may be considered to be an artificial recharge system.

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