Rainwater: Drain? or Collect?, That Is the Question

Special issue: rainwater harvesting and management

Rainwater that is collected on-site is clean and consumes less energy for treatment and transportation. We have neglected the importance of rainwater and made our water infrastructure for the purpose of draining rainwater as fast as possible. We need to change our paradigm of rainwater management, which is from “Drain” to “Collect” it. The rainwater harvesting and management has a big potential to solve global water problems and to adapt climate change.

In this special issue on rainwater harvesting, we have compiled 2 reviews and 7 research articles selected from the third international conference on Rainwater Harvesting and Management (3RWHM) held in Goseong, Korea, May, 2012, and focuses on the topics covering the ancient wisdom of water usage through scientific and technical discussions on rainwater harvesting and management.

Taghavi-Jeloudar et al. [1] reviewed the ancient wisdom of the Qanat system, an artificial underground water channels that have been used in the arid and semi-arid areas such as the Middle East. In this paper were showed the advantage of Qanat system, which maintained the sustainability of groundwater by rainwater recharge to the ground. Nguyen et al. [2] showed a demo project of rainwater harvesting for the drinking water supply in Hanoi, Vietnam. In this paper, it was demonstrated that 100 m$^3$ of rainwater collected from the rooftop of the university building were achievable to the Vietnamese drinking water quality standards by microfiltration. Also, in this issue are included two research articles with case studies of rainwater harvesting in Nigeria (Lade and Oloke [3]; Okpoko et al. [4]). Lade and Oloke [3] assessed the feasibility of rainwater harvesting in water-stressed community, Ibadan city, Nigeria. The case study of Aguata-Awka area, introduced in Okpoko et al. [4], depicts that the rainwater harvesting affords the inhabitants of the area to easily reach water supply for potable purpose, and compares the benefits of rainwater harvesting in details to aquifers occurring at great depths and difficult to exploit by the poor rural. I believe these two articles including Nguyen et al. [2] are good examples of practical case studies showing that rainwater harvesting should be applied in priority to developing countries suffering from water shortages. Rainwater has been negatively accepted as an alternative for water resources, and especially in South Korea this was mainly due to education and media which have led the public to misunderstanding. Seo et al. [5] showed the importance of the rainwater education program through well-designed surveys and statistical evaluations on results. The research explains about the teaching and learning strategies in the rainwater education program, showing that concurrent activities of “teaching-learning” changed students who participated in the education program with negative stances on rainwater remarkably to the rainwater-friend stances.

In short, as a guest editor of this special issue, I am very happy to provide research trends in technical aspects as well as several case studies of rainwater harvesting in developing countries. I hope this special issue would be helpful to readers about acquiring conceptual/technical understandings of rainwater utilization. In the era facing the global warming and subsequently resulted climate changes, a new paradigm on water management is required. The decentralized water management starting from rainwater management is a new paradigm, different from a conventional centralized water management [6]. This issue would contribute to disseminate a necessity of the paradigm shift.

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References


