Editorial

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This issue presents four papers related to managing water quantity (Correa-Ibanez *et al.*, 2018; O'Donnell *et al.*, 2018; Qaderi *et al.*, 2018) and quality (Jones and Bridgeman, 2018). The control and operation of reservoirs is extremely important, not only to managing the available water resources to satisfy the water demand of a particular region, but also to meeting other stakeholder needs such as flood risk management, energy generation, irrigation, water quality management, and so on. Additionally, rising water demands put more pressure on water resources. It is therefore not surprising that optimal reservoir operation is an active topic of research. The paper by Qaderi *et al.* (2018) presents an optimisation algorithm (known as the water cycle algorithm) for the optimal operation of a multi-reservoir system. The algorithm demonstrated a better performance when compared with other well-known optimisation algorithms (e.g. genetic algorithm, harmony search, particle swarm optimisation and imperialist competitive algorithm) to optimise reservoir water demand and reservoir storage deficits.

On the other hand, managing surface water and mitigating flood risk in urban areas is becoming increasingly important in the light of climate change and increasing urbanisation. Sustainable drainage systems (SuDS) provide a more sustainable solution to managing urban storm water by mimicking the natural processes of rainwater infiltration, storage and interception compared with traditional piped drainage systems. However, SuDS also provide additional environmental, social and economic benefits. The paper by O'Donnell *et al.* (2018) assesses the benefits of a SuDS scheme using a geographical information system (GIS) and the Benefits of SuDS Tool (BeST). BeST provides quantitative and qualitative measures of the benefits, whereas GIS demonstrates the spatial distribution of the benefits and how the benefits change spatially in response to other factors. The SuDS scheme showed a significant benefit in terms of flood damage reduction and improving water quality. The proposed approach presented in this paper has the potential to be used to evaluate planned SuDS developments in other cities.

The paper by Correa-Ibanez *et al.* (2018) presents a study of the impacts of climate change in the water supply used for mining in the Andina mine in Chile. Climate change and increasing water demand in glacier-fed regions in Chile is putting water resources under pressure, raising water security concerns. Improving understanding of the hydrological impacts of climate change in the Andes is therefore an important research topic. Correa-Ibanez *et al.* (2018) have shown that different climate change scenarios are likely to reduce water availability, producing a deficit for the Andina mine. The paper also evaluates several water supply options to mitigate the impact of climate change. The findings of this paper have the potential to improve water resources management and planning for the Andina mine.

The final paper by Jones and Bridgeman (2018) investigates the disinfection ability of hibiscus seed proteins against *Escherichia coli*, total coliforms and faecal coliforms in water treatment. Traditional methods to treat raw water to improve its quality involve disinfection processes using chlorine, ozone and ultraviolet light. The paper demonstrates how some local available plants (*Hibiscus cannabinus* and *Hibiscus sabdariffa*) found in several tropical countries have some disinfecting properties in water treatment.

I hope the readers will find these papers stimulating and informative. The journal publishes its most recent articles on its Virtual Library homepage ahead of their print versions.

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