



# Water security for subjective wellbeing: new perspectives for sustainable development

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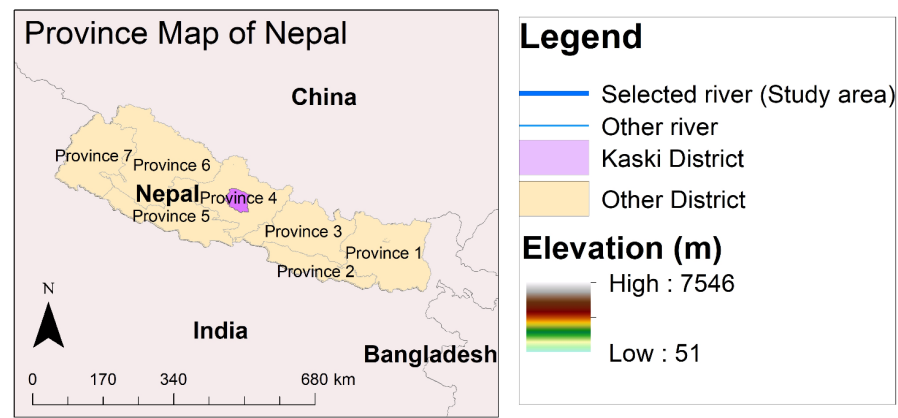
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## 1. BACKGROUND

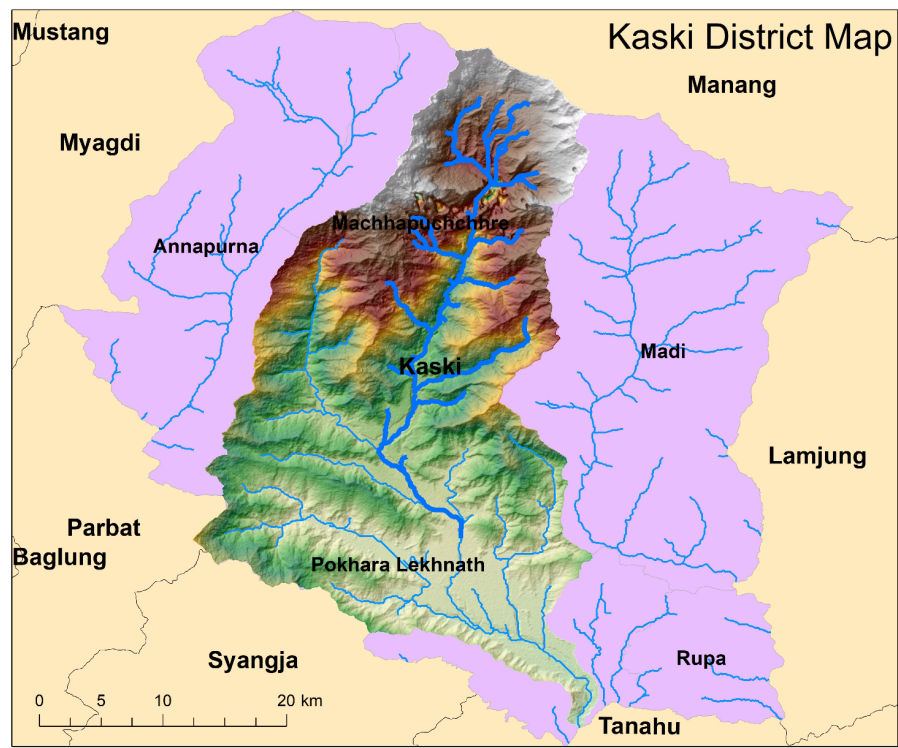
The notion of sustainable development in the current policy environment is inescapable from the concept of human wellbeing (*Painter-Morland et al. 2017*), as linked to the civic, political, economic, and natural environments people live in. However, the promotion of wellbeing has been quite often overlooked in the scientific discussion as compared to more tangible indicators of sustainable development. However, development takes place in order to boost human wellbeing and in order to achieve this development, nature's ability to support and expand human capabilities and activities is essential for sustainable development. In this context, **water is a crucial resource** and has an immense value in both economic and non-economic roles, with a deep spiritual significance in many cultures as well. However, **access to clean water to meet basic needs** is not universal in many countries in the world. This inaccessibility puts entire communities in jeopardy, thus **impacting their happiness, wellbeing, and sustainable living and development**.

In Kathmandu (Nepal) it has been seen that the costs born for improving water security have a direct influence on **life evaluation**, perceiving the current investment to owe the long term benefit, increasing subjective wellbeing (*Chindarkar et al. 2019*). The policy implications derived creates openings to improve water infrastructures and the quality of household water supply increasing people welfare.



## 2. PURPOSE

Pokhara metropolitan (belonging to Kaski District) is the second largest city in Nepal after Kathmandu, and it is abundant freshwater resources; however, the rapid population and economic growth is exposing the natural environment and people wellbeing, with a strong pressure on the water resource. This paper **aims at evaluating Pokhara’s people subjective wellbeing related to water and their willingness to pay to improve their water environmental conditions.**



(Chapagain et al. 2019)

### 3. METHODS

Through a face-to-face interview, **631 households have been interviewed in the 33 wards in the metropolitan area.** Households have been chosen randomly, through a stratified sampling approach to cover the wards consistently according to the population size. The questionnaire was pre-tested during November 2019 involving 50 participants in order to check the suitability, accuracy, and validity of the questions. This resulted in small changes to the survey in order to improve the final official version used in the analysis. The official version was deployed **using Kobo Toolbox® in January 2020** involving trained students from the University of Pokhara (Nepal). The data collection **ended on March 2020**. The survey was conducted using a structured questionnaire comprised of only close-ended questions.

The questionnaire covered the following sections:

- Life satisfaction (health, community, home, surrounding environment, financial situation, employment, leisure time and water);
- Water environment satisfaction (water supply, management, availability and quality);
- Water supply, access and use (for drinking and other purposes distinctively);
- Perceived water quality of piped water;
- Willingness to improve the water environment by paying an extra in the form of bill of surge in tax.

The statistical models used for analysing the data are ordered and linear regressions.



## 4. KEY RESULTS

- Life satisfaction was found to be positively significant correlated with all domains of quality of life, their satisfaction with water was a particularly important element;
- Wellbeing related to water was found to be positively correlated with expressed satisfaction over water supply and availability. The source of drinking water (52.9% supplied piped) was found a determinant in their water satisfaction (being other sources than piped water more reliable), as well as water shortage experience (57.6 % of people experience water shortage everyday/weekly) and distance from the water source.
- WTP is high and higher people's usual expenses of their water bills (included those that purchase bottle water as a source of drinking, 30.8%) of about 6 times more (more than 20%). People unwilling to pay represents 35.7% rejecting their own responsibility for improving the water environment;
- WTP was positively correlated with age, income and higher for Pokhara urban citizens (rather than peri-urban ones) and negatively correlated with water satisfaction.

## 5. TAKE HOME MESSAGE

Happier people were found be more likely to exhibit positive attitudes toward the environment demonstrating also a positive and responsible attitude with a high willingness to pay to enhance the quality of the water environment. People strongly expressed a desire for new political commitment towards the creation of new regulatory approaches concerning water quality standards and management strategies. The policy implications derived creates **openings to improve water infrastructures and the quality of household water supply increasing people welfare**. These results suggest that the good quality and supply management of water is essential for the future urban planning in the form of increase people health and secure a sustainable development for future generations to come.



FOR FURTHER QUESTIONS, CURIOSITIES OR  
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