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## Water Security Insights for An Urbanizing Southeast Asia

The 6th Sustainable Development Goal (SDG6) is to ensure clean water access and sanitation for all by 2030. One factor affecting this is income. The Asian Development Bank's 2016 Asian Water Development Outlook (AWDO) presents positive correlations between income and household water security, as measured by access to piped water services, sanitation and hygiene. The ADB also expresses the importance of looking at why some countries deviate from this trend, and we present here one reason from the perspective of Southeast Asia, given its rapid rate of urbanization.

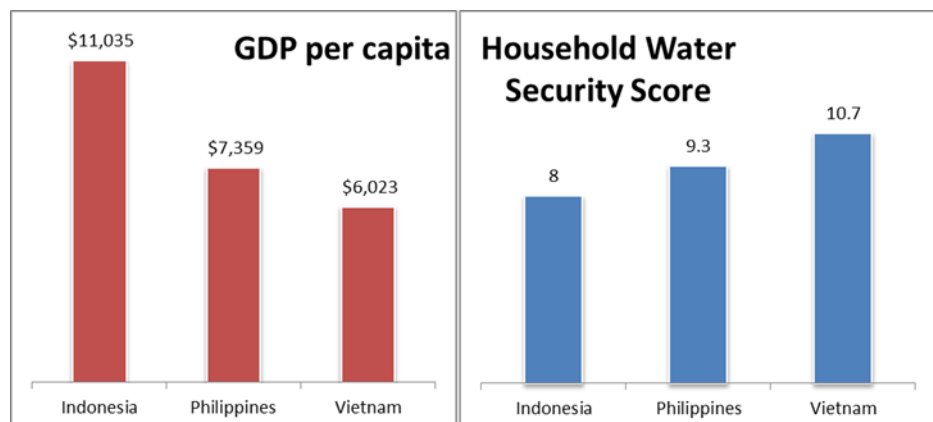
### The Puzzle: Decline in water security amid income growth

Based on the 2016 AWDO, Singapore, Brunei, Malaysia and Thailand are the 4 richest countries in the region in terms of GDP per capita. They also have highest ratings in household water security. Similarly, Lao PDR, Cambodia, Timor-Leste and Myanmar are lowest ranked in terms of both GDP

per capita and household water security outcomes.

However, a counter-intuitive relationship can be found in GDP per capita and household water security, in the case of Indonesia, Philippines and Vietnam. These three countries are in the middle of the spectrum of income per capita in the region. In this group of countries, Indonesia has the highest income per capita, followed by the Philippines and then Vietnam. Yet for household water security scores, the order is reversed, with Indonesia having the worst household water security score, followed by the Philippines and then Vietnam.

The concept of 'urban carrying capacity' explains these outcomes, referring to the amount of people an area can receive before experiencing negative outcomes. The three countries are either rapidly urbanizing, or already highly urbanized. Vietnam and Indonesia have witnessed fast rates of urbanization over the past 20 years (1990 to



Sources: World Bank, 2016, for latest GDP per Capita data; Asian Development Bank, 2016, for Household Water Security Score.

Notes: 1) GDP per capita is in current international \$ at Purchasing Power Parity (PPP). 2) The Household Water Security Score has a maximum score of 20.

2010), increasing by 50% and by 63%, respectively. The Philippines is already close to 50% urban, as it underwent the urbanization process earlier than these two countries and is already de-urbanizing. In these countries, urban migration has been so rapid that city governments have not been able to improve their water infrastructure to keep up with growing demand. This is observed when looking at the share of the population with access to piped water supply in urban areas. Based on this indicator, Indonesia has the lowest share (32%), followed by the Philippines (58%) and then Vietnam (61%). No indicators in the AWDO 2016 are available for comparing urban hygiene and sanitation access.

### Implications for Southeast Asia's rapid urbanization

Over the past 35 years, ASEAN has urbanized rapidly, with the share of urban population increasing from just 23% in 1975 to 41.8% in 2010, and this is expected to increase to 52.9% by 2030, based on UN statistics. This is partly driven by businesses that move to cities to benefit from closer proximity to their customers, and to their input providers along the supply chain. People move to where jobs are, leading to further urban migration. As Southeast Asian countries pursue the path of economic development, further

urbanization may be expected.

Southeast Asia should prevent a repeat of this inverse relationship between income per capita and household water security. This is especially relevant to less developed Southeast Asian countries (Lao PDR, Cambodia, Timor-Leste and Myanmar) approaching the lift off phase in urbanization. In fact, Laos already has lower urban access to piped water (64%) than Cambodia (72%), even if Laos has higher per capita income. Laos' situation could worsen once its cities reach their urban carrying capacity in terms of piped water provision. In developing water policies, Southeast Asian countries will thus need to pay attention to similar subnational areas where urban populations are growing too fast to maintain sufficient water supply per person.

Looking forward, climate change will add pressure on countries to ensure water supply meets growing demand, amid destabilizing seasonal variations. Singapore's experience in innovative water management policies is good point of reference for addressing water security. Despite being a dense urban center with limited natural resources, Singapore is able to meet the water needs of its growing population, maintaining household water access for all. One of the practices to consider is Singapore's treatment of waste water,



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recycling it to create good quality, potable "NEWater". Another is Singapore's desalination strategy, whereby sea water is converted into fresh water in order to compensate for lower water access during dry seasons.

## Suggested Readings:

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**FOOD SECURITY**



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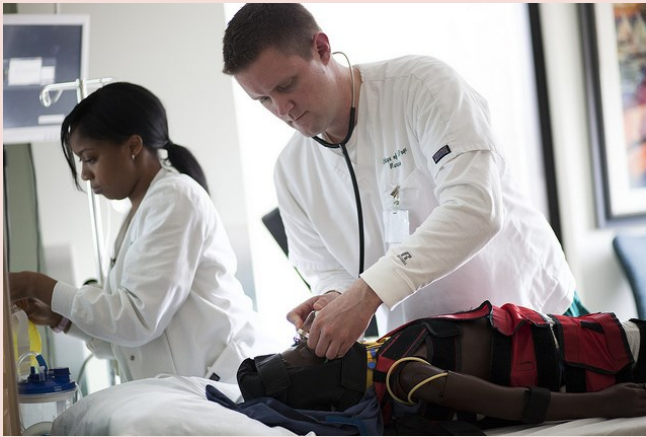
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Courtesy of Flickr account of COD Newsroom and used under a creative commons license.

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**In Pakistan, illegal kidney trade flourishes as victims await justice**

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Courtesy of Flickr account of U.S. Pacific Fleet and used under a creative commons license.

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*First Post*  
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**Reductionist and integrative research approaches to complex water security policy challenges**

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