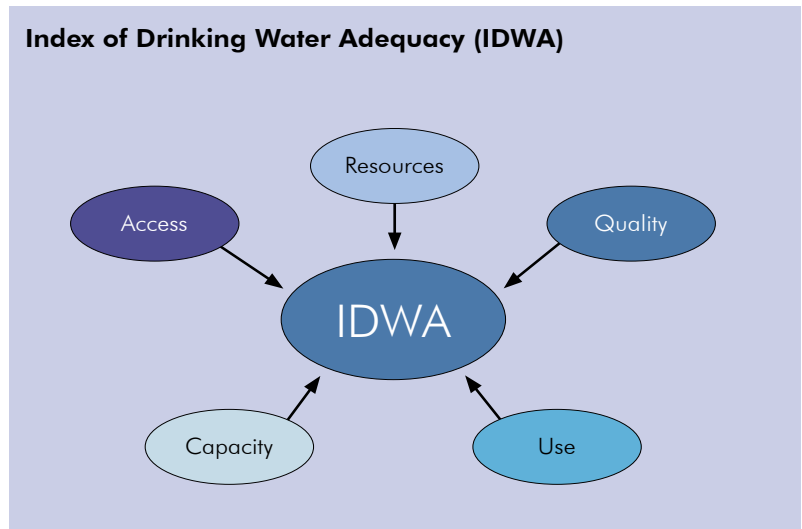


## Appendix

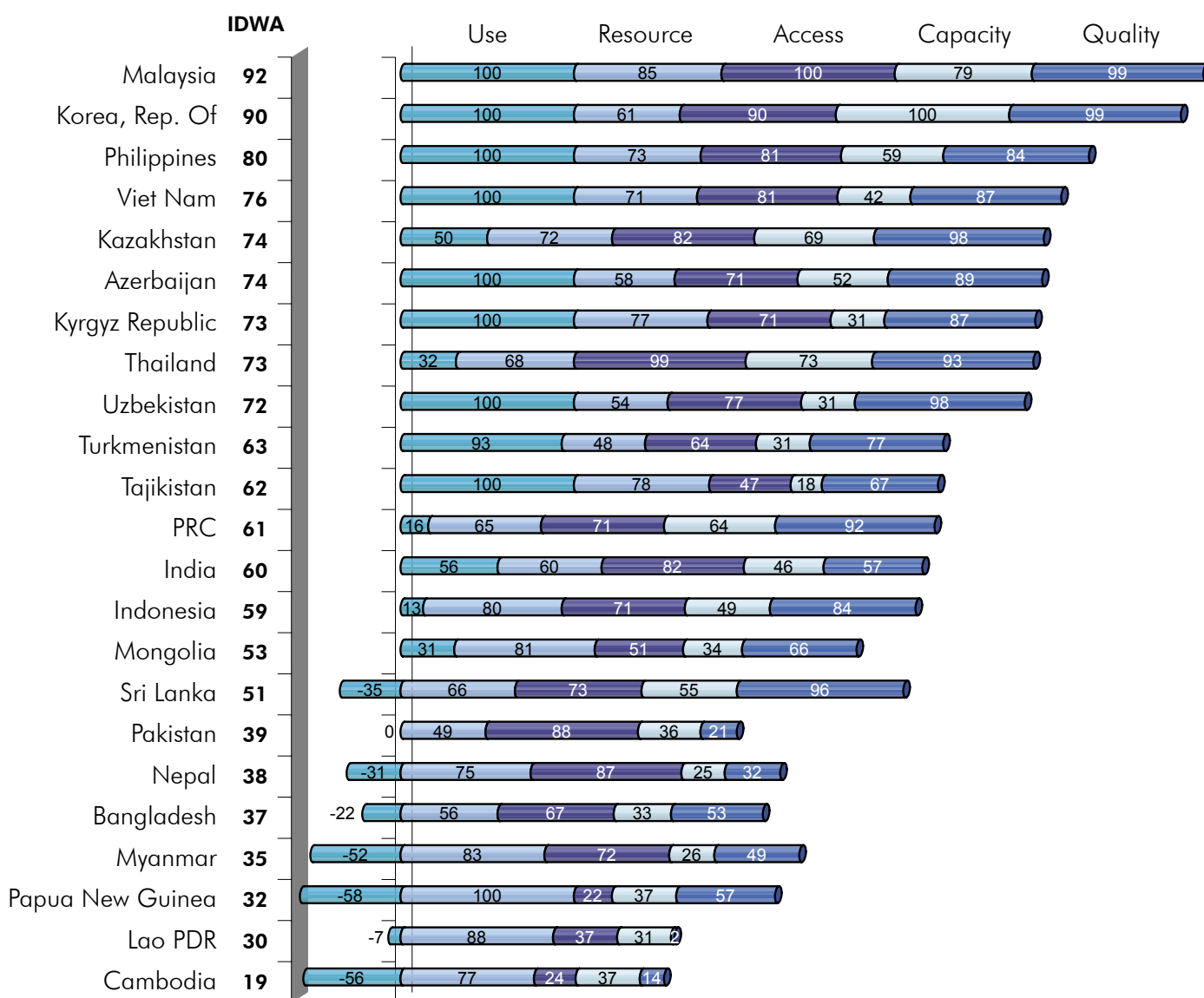
# IDWA: Index of Drinking Water Adequacy

The *AWDO 2007* proposes a new Index of Drinking Water Adequacy (IDWA). IDWA is an average of five component indicators on most relevant variables, fully explained in the paper by Bhanoji Rao: (1) per capita internal renewable fresh water resources;<sup>1</sup> (2) percent of population with general access to a sustainable “improved” water source, which is one of the target indicators in the Millennium Development Goals (MDGs); (3) national capacity to purchase water, based on the proxy measure of per capita gross domestic product in purchasing power parity dollars (PPP \$); (4) the extent of use of water by the domestic sector on a per capita basis measured against a norm; and (5) diarrheal deaths per 100,000 people used as an indirect measure of water quality. IDWA not only allows cross-country comparisons, but also helps in ascertaining which component is weak in a particular country, requiring priority attention.



Index computation methodology is essentially the same as the one adopted to compute the Water Poverty Index (WPI), which was the method used to compute the Human Development Index (HDI) over the years. The method simply involves taking the variable, for example resource per capita,  $R_j$  for country  $j$ , and then estimating the percentage as follows:

### Ranking based on IDWA



$$\text{Indicator for country "j"} = \frac{[R_j - R_{\min}]}{[R_{\max} - R_{\min}]} \times 100$$

The index is computed for 2004 for 23 developing member countries (DMCs) of the Asian Development Bank (ADB), accounting for 99% of the total population of all 44 DMCs. The IDWA values of the 23 DMCs are given above to demonstrate the use and implications of the new index.

Comparing Malaysia and the Republic of Korea, the latter has a relative paucity of water resources and not quite 100% access. It has capacity to purchase/exploit water resources at a much higher level than Malaysia, but it is not translated into full access, and hence its IDWA is slightly lower.

The People's Republic of China (PRC) and India have about the same IDWA, but some of the component

differences are glaring. The PRC has lower access, despite higher economic capacity. It has constrained use, but high quality. India enjoys better access and higher use but low quality.

Bangladesh and Myanmar have IDWA values on the low side, with the two countries respectively occupying the 19th and 20th positions. Both fail especially on use, wherein the level

is way below the norms adopted.

Myanmar has relatively higher level of resources that have helped to step up access to a relatively high level. The country, however, fails on purchasing power and quality.

Cambodia has the lowest IDWA despite a fairly high level of resources. It has to step up “investments” to move up on all other components.

## Endnote

1. Internal renewable water resources (IRWR) comprise the average annual flow of rivers and recharge of ground-water (aquifers) generated from endogenous (internal) precipitation. Natural incoming flows originating outside a country's borders are not included. Estimates of IRWR per capita are from the World Bank's WDI 2006 and they refer to 2004.