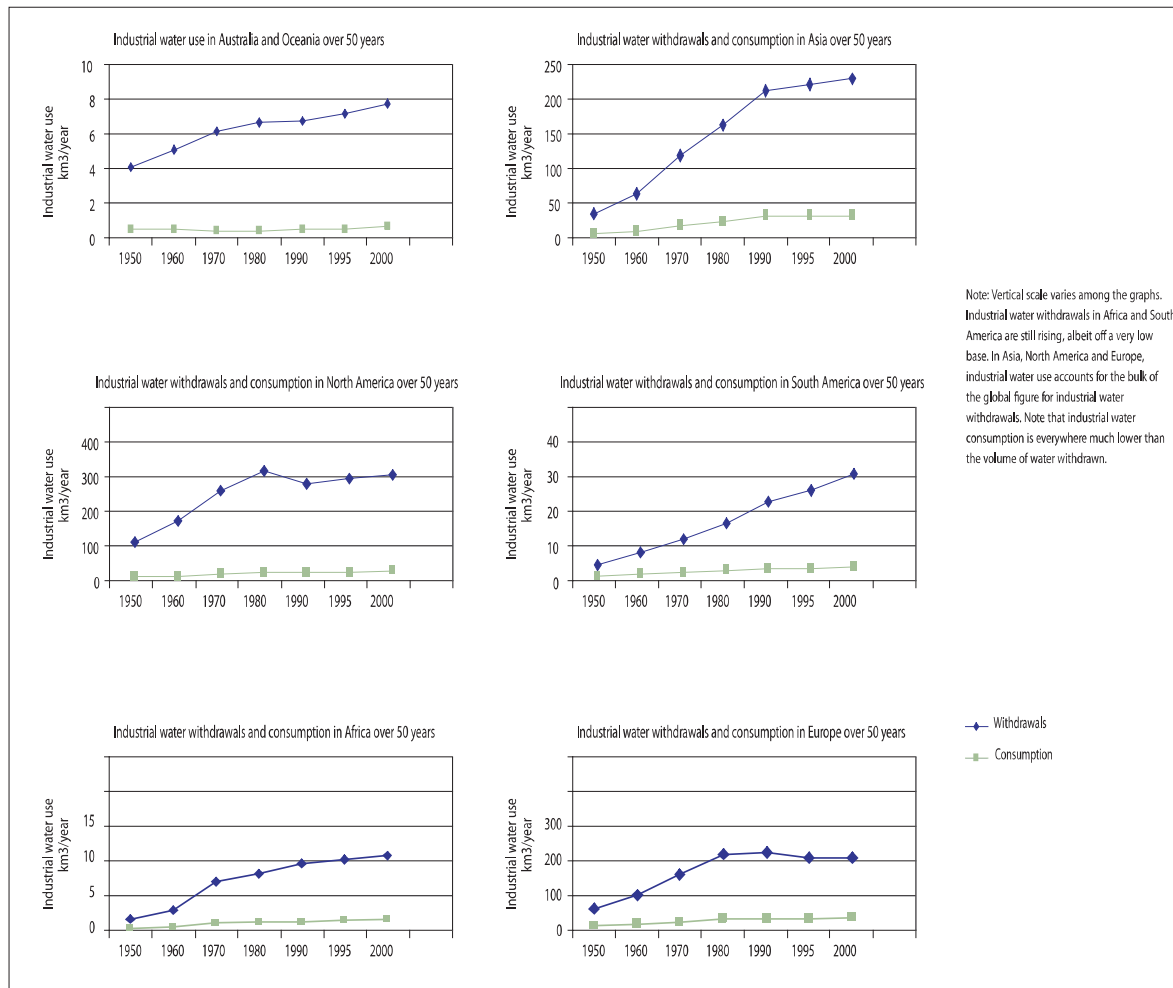


Indicator name

**Trends in industrial water use**



Prepared by	UNIDO
Example	<b>WWDR2, Chapter 8, Figure 8.1</b>
Rationale	In many developing countries, industrial production and hence the sectoral use of water have grown fast, putting increasing pressure on scarce water resources
Position in DPSIR chain	Pressure
Definition of indicator	Trends in industrial water withdrawals and water consumption in Africa, Asia, Europe, Australia and Oceania, North and South America, and world industrial water withdrawals and consumption, over the past 50 years.
Underlying definitions and concepts	<p>Water use: withdrawal of water for specific sectoral purpose, i.e. industrial, agricultural or domestic (can be applied to describe either water withdrawal or water consumption).</p> <p>Water withdrawal: abstraction of water from surface or ground water, for consumptive purposes</p> <p>Water consumption: proportion of water withdrawal which is not returned to surface waters after use, as it is lost in the manufacturing process via evaporation, or incorporated into the finished product, byproducts or solid waste</p> <p>Effluent discharge: proportion of water withdrawal which is returned to surface waters</p>
Specification of determinants needed	<p>Water withdrawal by industry</p> <p>Water consumption by industry</p>

	<b>Industrial effluent discharge</b>
Computation	$W_i = C_i + E_i$ Where: $W_i$ = the water withdrawal by industry $C_i$ = the water consumption by industry $E_i$ = the industrial effluent discharge
Unit(s) of expression	km <sup>3</sup> /year
Data sources, availability and quality	Shiklomanov, UNESCO-IHP 2000, good quality but variable, some errors in database.
Scale of application	Regional, national
Geographical coverage	Global
Interpretation	The relationship between industrial water withdrawal and industrial growth is not linear, as technological advances lead to water savings as well as water reuse in industry. Hence industrial water withdrawals in many developed countries have flattened off, while industrial water consumption (which is only a fraction of the total water withdrawal) continues to grow.
Linkage(s) to other indicators	This indicator is a measure of the Pressure, since industrial growth puts increasing pressure on water resources in many parts of the developing world. It is linked to the indicator on sectoral water use, which represents the current State of how water resources are allocated; as well as to the indicator on industrial water productivity, which reflects to a certain extent the Response.
Alternative methods and definitions	While much of the data in Shiklomanov is estimated by various techniques, there are data sets existing in many countries which give actual industrial withdrawals which have been measured. However, water consumption data does not exist, hence the extent of reuse cannot be estimated on a national level, but only at the level of individual factories.
Related indicator sets	World Bank: World Development Indicators OECD: Industrial Statistics UNECE: Water use statistics (Regional Implementation Forum on Sustainable Development, 2003) FAO AQUASTAT
Sources of further information	World Water Resources and their Use – a joint SHI/UNESCO product at: <a href="http://webworld.unesco.org/water/ihp/db/shiklomanov/">http://webworld.unesco.org/water/ihp/db/shiklomanov/</a> (Accessed 02 March 2009)
Other institutions involved	World Bank, UNECE, UNESCO