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SUSTAINABLE DEVELOPMENT GOALS

SDG 6.4.1 y 6.4.2 indicators

Cambio en la eficiencia del uso del agua con el tiempo

Nivel de estrés hídrico

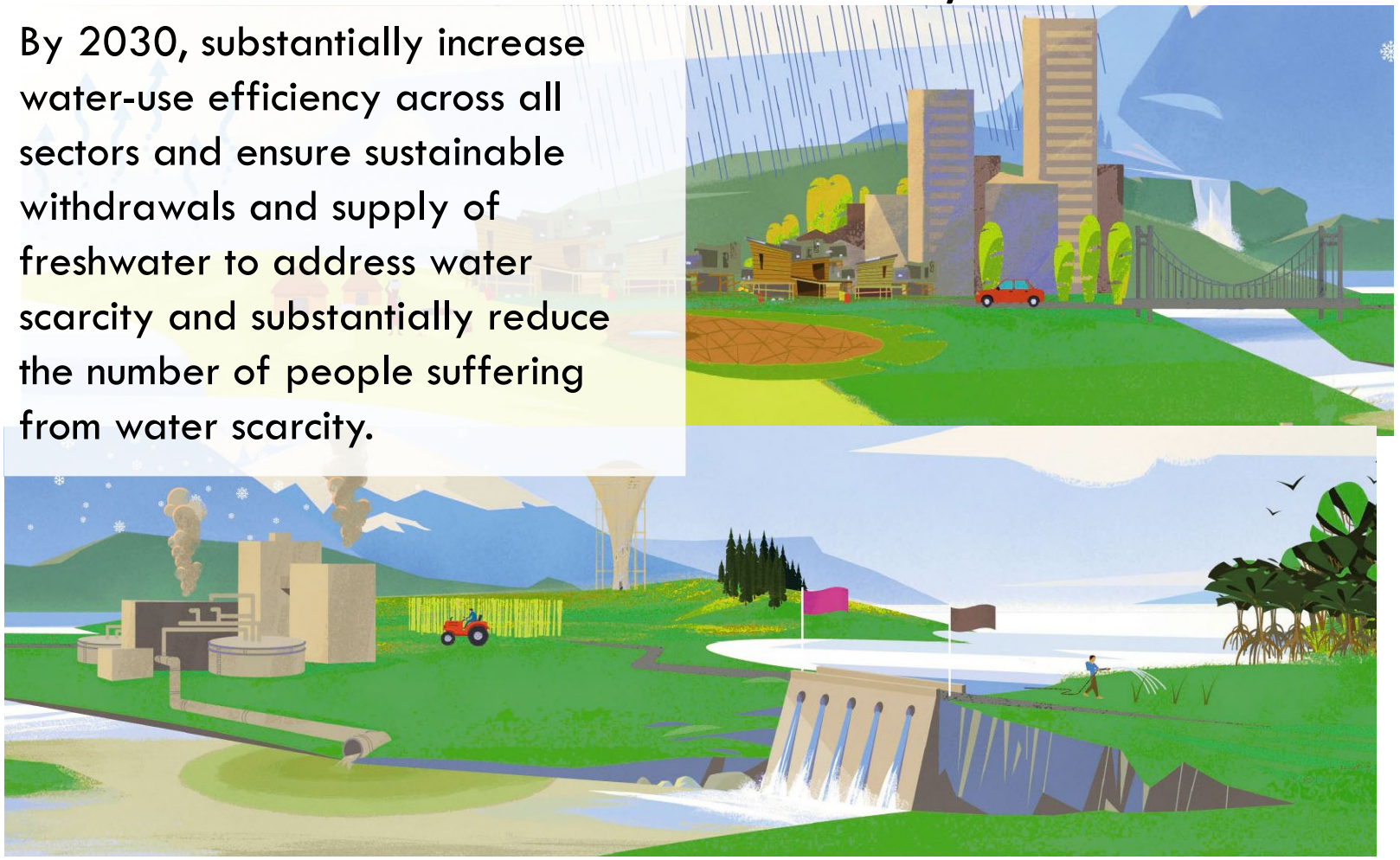
Sustainable Development Goal 6

SDG 6 global indicators

6.1.1	Safely managed drinking water services (WHO, UNICEF)*
6.2.1	Safely managed sanitation and hygiene services (WHO, UNICEF)*
6.3.1	Wastewater safely treated (WHO, UN-Habitat, UNSD)**
6.3.2	Good ambient water quality (UNEP)**
6.4.1	Water use efficiency (FAO)**
6.4.2	Level of water stress (FAO)*
6.5.1	Integrated water resources management (UNEP)**
6.5.2	Transboundary basin area with water cooperation (UNECE, UNESCO)**
6.6.1	Water-related ecosystems (UNEP)**
6.a.1	Water- and sanitation-related official development assistance that is part of a government coordinated spending plan (WHO, UNEP, OECD)*
6.b.1	Participation of local communities in water and sanitation management (WHO, UNEP, OECD)*

SDG target 6.4
water use and scarcity

By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.



Important definitions

- Water use : El agua que recibe una industria u hogar desde otra industria o que se extrae directamente.

- Water withdrawal: agua extraída del medio ambiente por los sectores económicos.

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SDG 6.4.1 Indicator

Change in water-use efficiency over time

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SDG 6.4. target

By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

Definition

- **Water Use Efficiency (WUE)** is defined as the value added of a given major sector divided by the volume of **water used** by that sector.

- Economic indicator (USD/m3) , assess to what point economic growth depends on the use or water resources..

- The indicator measures the change in the ratio of the value added to the volume of water use, over time.

Following ISIC 4 coding, sectors are defined as:

- agriculture; forestry; fishing (ISIC A) - "**Agriculture**";
- mining and quarrying; manufacturing; electricity, gas, steam and air conditioning supply; constructions (ISIC B, C, D and F) - "**MIMEC**";
- all the service sectors (ISIC E and ISIC G-T) - "**Services**".

Method of computation

Sum of the efficiency of the three economy sectors, weighted according to the proportion of water use by each sector over the total use.

$$WUE = A_{we} \times P_A + M_{we} \times P_M + S_{we} \times P_S$$

Method of computation

$$WUE = A_{we} \times P_A + M_{we} \times P_M + S_{we} \times P_S$$

WUE = Water use efficiency

A_{we} = Water use efficiency in agriculture [USD/m^3]

M_{we} = Water use efficiency in MIMEC [USD/m^3]

S_{we} = Water use efficiency in the service sector [USD/m^3]

P_A = Percentage of water use by the agricultural sector

P_M = Percentage of water use by the MIMEC sector

P_S = Percentage of water use by the Service sector

Method of computation

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$$WUE_{sec} = \frac{GVA_{sec}}{V_{sec}}$$

WUE_{sec} = Water use efficiency of a specific sector

GVA_{sec} = Gross value added by a given sector of the economy [USD]

V_{sec} = Volume of water used by a given sector of the economy [m3]

Water use efficiency in agriculture

Water use efficiency in irrigated agriculture is calculated as the agricultural value added per agricultural water use, expressed in USD/m3.

$$A_{we} = \frac{GVA_a \times (1 - C_r)}{V_a}$$

A_{we} = Irrigated agriculture water use efficiency [USD / m^3]

GVA_a = Gross value added by agriculture (excluding river and marine fisheries and forestry) [USD]

C_r = Proportion of agricultural GVA produced by rainfed agriculture

V_a = Volume of water used by the agricultural sector [m3]

Change in water use efficiency

Change in water use efficiency (CWUE) is computed as the ratio of water use efficiency (WUE) in time t minus water use efficiency in time to (Baseline) , divided by water use efficiency in time to and multiplied by 100

$$CWUE = \frac{WUE_t - WUE_{t0}}{WUE_{t0}} * 100$$

to is the baseline year

Interpretation

- Information on the efficiency of the economic use of water resources

- Increasing values in time series indicate decoupling of the economic growth from water use. It does not necessarily indicate decline in total water use or a reduction of the impact of water use.

- Water use efficiency is strongly influenced by the economic structure and the proportion of water intensive sectors

- This indicator needs to be combined with the water stress indicator 6.4.2 to provide adequate follow-up of the target formulation.

- The interpretation can be improved through the use of complementary indicators such as irrigation or municipal water efficiencies.

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SDG 6.4.2. indicator

Level of water stress: freshwater withdrawal in percentage of available freshwater resources

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SDG 6.4. target

By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

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Definition and method of calculation

The ratio between total freshwater **withdrawn** by all major sectors and total renewable freshwater resources, after having taken into account environmental water requirements.

All variables are expressed in km3/year (10^9 m3/year)

$$\textbf{\textit{Water stress}}\ (\%) = \frac{\textbf{\textit{TFWW}}}{\textbf{\textit{TRWR}} - \textbf{\textit{EFR}}} * \mathbf{100}$$

Interpretation

- Degree to which water resources are being exploited to meet the country's water demand.

- It measures a country's pressure on its water resources and therefore the challenge on the sustainability of its water use.

- Increased/High water stress levels has potentially negative effects on the sustainability of the natural resources and on economic development.

- Low values of the indicator indicate that water does not represent a particular challenge for economic development and sustainability.

Disaggregation

- Sectoral Disaggregation: to show the respective contribution of different sectors to the country's water stress, and therefore the relative importance of actions needed to contain water demand in the different sectors (agriculture, industry and services).

- Geographical disaggregation : to show the levels of water stress by hydrological unit, allows for more targeted response in terms of water demand management.

Thank you