

SDG 6: Overview of SDG6 Speaker Notes

To accompany the Overview of SDG6 Slide Deck

→ Slide 1: Today we'll be examining the sixth sustainable development goal - clean water and sanitation for all. [Note to lecturer: The overall flow of this slide deck is as follows:

Why do we care? → overview of the key issues (e.g. for SDG 6: freshwater scarcity, what happens when people don't have it, what happens when we take too much from the environment etc)

What is SDG 6? → Define.

How can we monitor progress on it? → Explain SDG targets, and note that there are indicators associated with each target that have specific metrics (which you can get more info on within the slide decks for each target).

What is our current **progress**? How is the world doing on this SDG? Are we on track to reach this goal by 2030?

Intersectionality of SDGs → How is SDG 6 related to the other SDGs?

Case study → Looking at a specific example of how the issues of clean water and sanitation impact Cape Town, South Africa.

→ Slide 2: To highlight a few key overarching points:

Clean water and sanitation are critical components to ensuring the wellbeing of the world's population.

The sustainable use of water resources is essential to ensuring ecosystem health and services, and is critical in all sectors - in particular agriculture - in order to support the global population.

Water scarcity and lack of sanitation facilities contribute to inequalities in many areas, including gender inequality, and are also sources of conflict and even forced migration. Many of the problems we face related to clean water and sanitation will be exacerbated by climate change and growing global population in the coming decades.

→ Slide 3: So first, before we can dive into clean water and sanitation, it helps to have an idea of how much water we actually have on earth. This figure gives you a sense of how little liquid, fresh water is actually on earth. Even though 71% of the Earth's surface is covered in water, the total water on earth only amounts to a sphere of water the size of

that larger blue “marble” shown here on top of North America. Of this water, less than 3 percent is actually freshwater, represented by the “medium” size sphere in the figure and in the legend (that’s *much* smaller than the first sphere). Let’s take a closer look at where we can find this freshwater on earth.

- Slide 4: This is a somewhat classic figure in the world of hydrology, published initially in 1993. The whole column on the left represents that larger blue sphere we saw on the previous slide - the total volume of water on earth. Of this column, only that top blue slice (2.5%) is freshwater. The middle column expands this freshwater: 68.7% of which is “trapped” in glaciers and icecaps, and relatively inaccessible for use. The next largest portion of this middle column is groundwater, which accounts for roughly 30.1% of the freshwater on earth. The surface/other freshwater - including all the lakes, rivers, and swamps - accounts for *only* 1.2% of the freshwater on earth! 1.2% of 2.5% is only 0.03%. That means that surface water and any other source of freshwater that isn’t in glaciers, icecaps, or groundwater, accounts for only 0.03% of all the water on Earth. As you’ll see in the rest of this lecture and in the additional slides on the different targets associated with SDG 6, access to clean freshwater is essential for human health, environmental wellbeing, and economic prosperity. This freshwater is not only scarce *and* essential, but it also is being threatened by over-use, contamination, pollution, rising sea levels, and many other actors that are largely human-induced.
- Slide 5: As defined by the United Nations, sustainable development goal number 6 is to “ensure availability and sustainable management of water and sanitation for all.” Here’s a short video highlighting some of the key issues this sustainable development goal addresses. *Play video.*
- Slide 6: Before we jump into SDG 6, here are a few useful definitions to keep in mind.

SDGs: As explained by the UN, “The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by all United Nations Member States in 2015 as a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030. The 17 SDGs are integrated—that is, they recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability.”

TARGETS: Each sustainable development goal has a series of targets associated with it, that define different aspects of the goal in more clarity and specificity. All of the sustainable development goals, except number 17, have two types of targets: first, outcome targets, which represent a specific circumstance to achieve, such as 6.1: safe and affordable drinking water. The second type of target is called a “Means of Implementation” target, which essentially details how the sustainable development goal will be achieved, with an emphasis on global as well as local partnerships and effort. Sustainable development goal number 17, “Strengthen the means of implementation

and revitalize the Global Partnership for Sustainable Development” is “wholly about how the SDGs will be achieved.”

- Slide 7: Sustainable development goal 6 has eight associated targets comprised of six outcome targets (6.1 through 6.6), and two means of implementation targets (6.A and 6.B).
- Slide 8: These are the primary objectives of the eight targets associated with SDG 6. A reminder of the components of the sustainable development goals as defined previously - each of these targets have at least one indicator associated with them that facilitates measuring progress over time. We'll look at an example of this on the next slide. It's important to note that even though the overarching sustainable development goal 6 was broken into these eight targets, the targets are inextricably linked and all contribute to ensuring the availability and sustainable management of water and sanitation for all.
- Slide 9: For example, for target 6.4, one of the indicators is change in water-use efficiency over time, which can be measured by examining the freshwater withdrawals as a share of internal resources. This allows us to see how the amount of water being used compared to the amount of water that's actually available, is changing over time for an area.
- Slide 10: Using these eight targets associated with SDG 6 and their associated indicators, we can track progress for countries over the past several years (to decades, depending on data availability), and examine trends to project what progress will be made by 2030.
- Slide 11: Overall, based on available data from Sachs et al. (2020)*, the “Sustainable Development Report 2020” index and dashboard displays global progress on each of the sustainable development goals. The figure here shows the world's overall progress on SDG 6; as you can see, very few countries have achieved SDG 6 (Finland, Czech Republic, and Croatia), and the most significant challenges remain in Africa, southeastern Asia, and a handful of other countries. Though this may seem a little discouraging, we still have several years before 2030 to continue the progress we've made and accelerate it further through innovation and increased collaboration and advancements. Let's look at what the trends project for 2030 *next slide*
- Slide 12: Here, based on current trends, we can see that many countries are on track to achieve SDG 6, or are at least moderately improving water and sanitation conditions by 2030. There are however, a number of countries that are “stagnating” - or not making significant progress forwards. According to these measurements, no countries have projected water or sanitation circumstances for 2030 that worse than they are currently, as can be seen by the lack of countries colored in red.
- Slide 13: To put the progress still needed to achieve SDG 6 into context - as noted by The

Global Goals, “1 in 3 people live without sanitation. This is causing unnecessary disease and death. Although huge strides have been made with access to clean drinking water, lack of sanitation is undermining these advances. If we provide affordable equipment and education in hygiene practices, we can stop this senseless suffering and loss of life.”

- Slide 14: Additionally, climate change and additional factors will continue to exacerbate water-related problems. As calculated by UNICEF in 2017, “It is estimated that by 2040, 1 in 4 of the world’s children under 18 - some 600 million in all - will be living in areas of extremely high water stress.” Proactive solutions have to be designed and implemented to reduce this number.
- Slide 15: As described by UNICEF: “For children, water is life: without it they cannot survive. Safe drinking water is essential for their health and survival, and unsafe water can make them sick or even kill them.

But a lack of safe water, sanitation and hygiene (WASH) affects more than just children’s health. It affects their physical development, exacerbating malnutrition and stunting. It affects their education, disrupting learning and sometimes forcing them to skip school to walk long distances to collect water. Water scarcity reduces livelihood opportunities for their families and communities, leading to migration, conflict and even child labour.”

Just touching on some of the high level areas of interconnectedness demonstrated in this quote: access to clean water and sanitation closely relates to other sustainable development goals, including SDG 2 (zero hunger), SDG 3 (good-health and well-being), SDG 4 (quality education), SDG 8 (decent work and economic growth), SDG 11 (sustainable cities and communities), and SDG 16 (peace, justice, and strong institutions) just to highlight a few. Connections can be drawn from SDG 6 to all of the 17 SDGs.

- Slide 16: Beyond the several listed on the previous slide, connections can be made between SDG 6 and every other SDG. A few additional examples include the impact of climate change (SDG 13) on the water cycle that will impact the obstacles certain countries must overcome in order to achieve SDG 6 - including rising sea levels with associated saltwater intrusion, as well as increased flooding and droughts which may alter how much water is available (and in particular - *when* and *where* this water is available). Additionally, the quality and quantity of water available for the environment (SDG 6) greatly impacts both terrestrial and aquatic ecosystem health, which thus impacts achieving SDG 15 (life on land), and SDG 14 (life below water).
- Slide 17: One example of extreme water scarcity that gained international attention, was the near-“Day Zero” water crisis in Cape Town, South Africa in 2018. Note that “Day Zero” essentially refers to the day when there is no water left to pipe to the city’s citizens. This video provides a brief background on this situation, and some of the measures used to

avoid a true “Day Zero.” *Play video*

- Slide 18: This short video provides a slightly deeper look into the problems behind the water crisis - an unanticipated three year drought resulting in dramatically decreased water supply, and drastically low capacity in reservoirs. *Play video*
- Slide 19: This graphical illustration published by Dos Santos et al in 2017 highlights some of the challenges faced by Cape Town in determining the best course of action in terms of water governance - essentially, how do you divide such limited water resources among various sectors and social groups?
- Slide 20: Class Activity: Based on what you just learned about the water crisis in Cape Town, take three minutes to write down at least three sustainable development goals other than SDG 6 that you think may be related to this crisis, either in relation to causes of/contributing factors to water scarcity or resulting implications. [Note to instructor: after three minutes, you can tell the students to pair with a partner, and then potentially a few can share their ideas with the whole class - depending on the time allotted to this activity]
- Slide 21: The water crisis in South Africa is tied to many other sustainable development goals beyond SDG 6, clean water and sanitation. Just to cover a few examples: A key connection that will be made several times over the rest of this module, is that without clean water and sanitation, it is impossible to achieve SDG 3: good health and wellbeing.

Additionally, as noted in the previous slides and videos, the prolonged drought that caused this water crisis has been linked to anthropogenic climate change (SDG 13, climate action). Cape Town’s population has increased at a rate that exceeds the capacity of the surrounding natural environment to provide critical resources, at least in relation to the way water is currently being managed, showing that there is a large amount of work to be done in terms of innovation and infrastructure (SDG 9) to make the city sustainably (SDG 11).

- Slide 22: N/A