

Strengthen the resilience to the adverse impacts of climate change

Dr. Amin Nawahda & Eng. Samar Shanti
FIRST PALESTINE INTERNATIONAL WATER FORUM
Ramallah, 2018

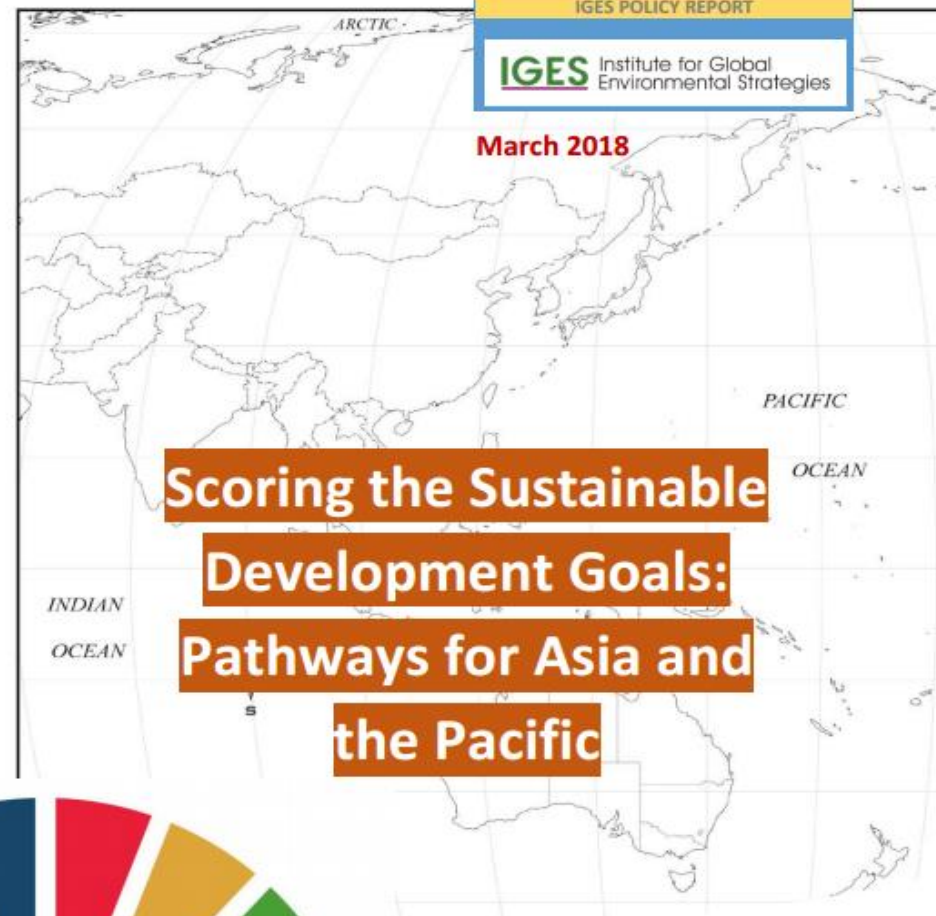


جامعة فلسطين التقنية - خضوري
Palestine Technical University - Kadoorie

Outline

- * Introduction
- * Fuel Decarbonaization
- * Sustainable consumption and production (SCP)
- * Safeguard ecosystem and biodiversity
- * Pollution prevention and control
- * Sound waste management
- * Environment related science

Introduction



Lewis Akenji

Mark Elder

Magnus Bengtsson

Simon Høiberg Olsen

Peter King

Introduction

- * The Middle East is highly **vulnerable to the adverse impacts of climate change**, so it is necessary to enhance the resilience of key economic sectors.
- * **Vulnerable cities** should upgrade existing **infrastructure** and ensure that new construction is more resilient.
- * improve home construction quality, waste collection, and drainage canals in vulnerable areas.
- * **Vulnerable rural areas** should introducing more adaptable crop varieties and efforts to safeguard local ecosystems.



Challenges



- * Experience shows that **there is a limit to what can be achieved** through improved technical infrastructure and that public awareness and knowledge can be critical to limiting impacts.
- * Still, **disasters will occur**, even with good preparation, so capacity for longer-term recovery and rebuilding is also needed, not just emergency relief.

Resilience, Climate adaptation, and Sustainable development

- * Resilience and climate adaptation measures can yield **positive synergies or co-benefits** for sustainable development.
- * Sustainable development which can facilitate resilience include **policies to improve education and health**.
- * Climate adaptation strategies can yield **welfare benefits**, including more efficient use of water and more robust crop varieties.
- * To capitalize on these synergies, they should be mainstreamed into strategic planning and policy making at all levels of society.





SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



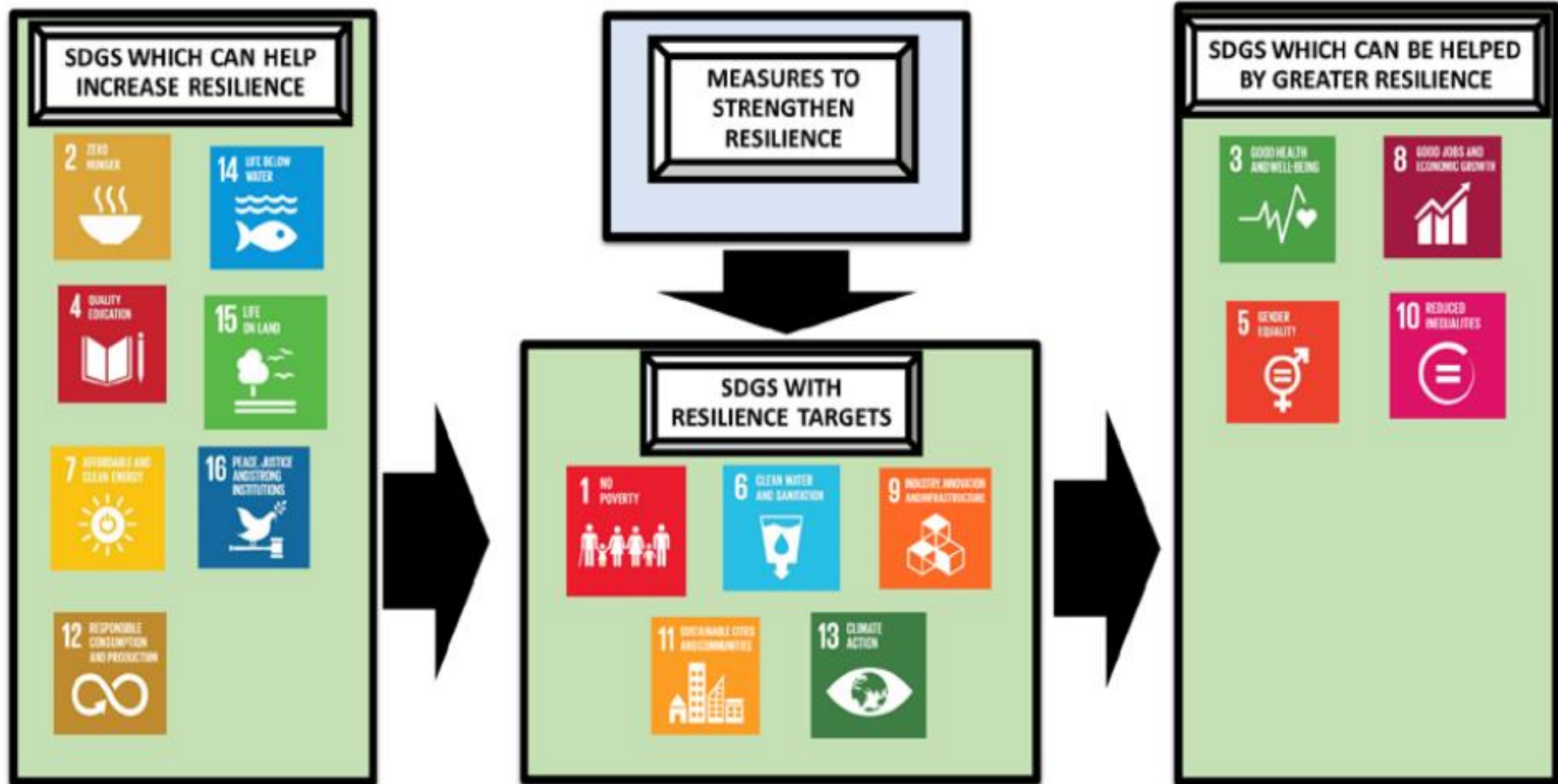
SUSTAINABLE DEVELOPMENT GOALS

Resilience and SDGs



- * Five Goals have **resilience targets**; poverty elimination (SDG 1), water and sanitation (SDG 6), sustainable industrialization (SDG 9), sustainable cities (SDG11), and climate (SDG 13).
- * The achievement of (SDGs 3, 5, 8, and 10) would be furthered by the achievement of the five SDGs with resilience-related targets.
- * reducing hunger, **enhancing the sustainability** of agriculture, increasing energy efficiency, increasing renewable energy, and making production and consumption sustainable all contribute to enhanced resilience.
- * efforts to **enhance resilience** can promote economic growth and jobs (SDG 8) while reducing inequality (SDGs 5 and 10).
- * in the **water goal (SDG 6)**, the target indicating resilience (target 6.6 on the protection and restoration of water-related ecosystems) can be considered as a means to target 6.1 on universal access to safe water.

Resilience and SDGs



Fuel Decarbonization

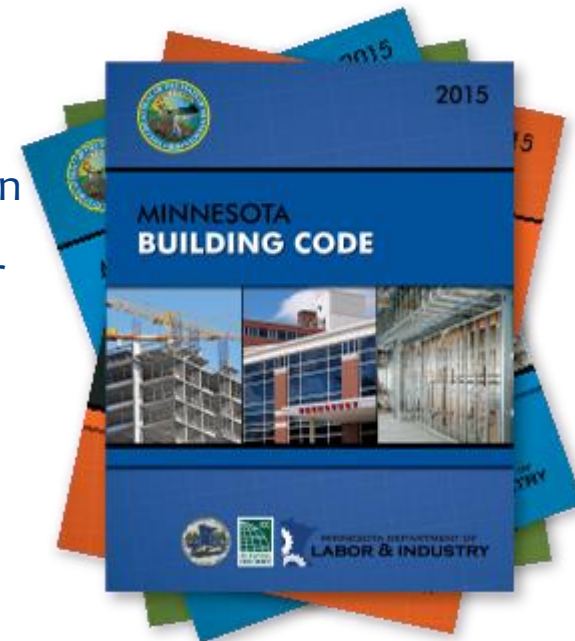


- * The Middle East region's current development path is **carbon-intensive**.
- * It has already reached emission levels that are **incompatible with a safe global climate**.
- * Stabilising per-capita emissions of GHGs at significantly lower levels offers a great leapfrogging opportunity for the region.
- * Such transformations require progress mainly in two areas:
 - * increasing **energy efficiency** and shifting to renewable energy sources.
 - * **Economic incentives** and regulations need to work together to accelerate the introduction of energy efficiency measures.



Policies

- * Currently, governments in many countries **subsidise electricity and fossil fuels**.
- * Phasing out fossil fuel subsidies is one of the easiest and most effective ways to strengthen the incentives to invest in energy efficiency, shift consumption away from fossil fuels towards renewable energy, and generate revenue for other sustainability investments.
- * Such policy reforms may require **complementary measures**.
- * **Stronger building codes** with strict energy efficiency requirements could be a powerful incentive to significantly upgrade the energy efficiency of buildings.
- * Promotion of new business models that encourage energy saving.

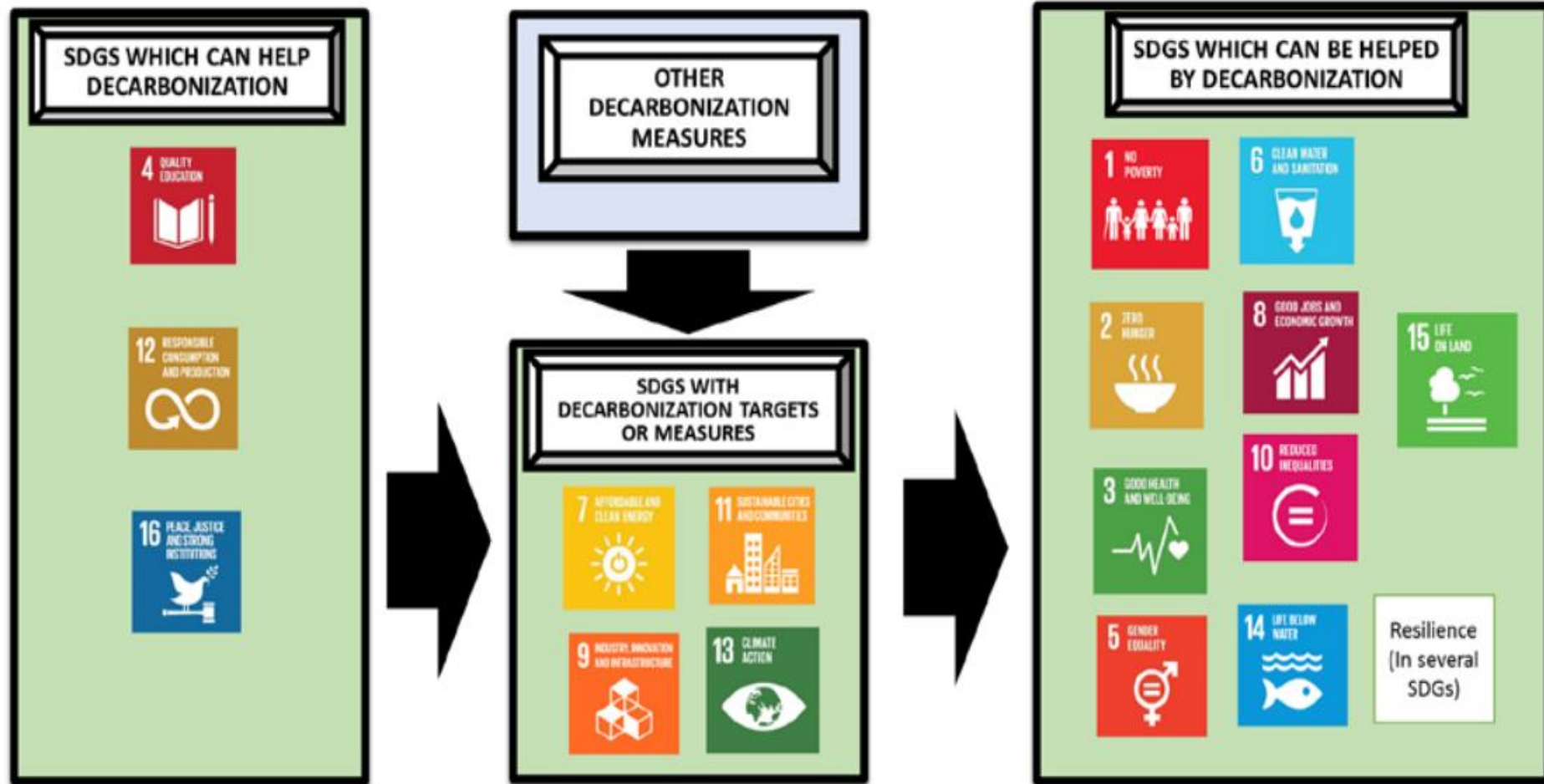


Energy Infrastructure



- * Energy infrastructure investment is **long-term**.
- * Notable examples include separating the **ownership of power generation** facilities from the transmission grid and facilitating the establishment of small to medium-scale energy generation co-operatives.
- * Resilience can be bolstered through the construction of **low-carbon societies**, powered mainly by renewable energy.
- * Countries at earlier stages of development have the opportunity to build new infrastructure and power systems which are already optimized to use **renewable energy sources**.
- * Building societies around the characteristics of fossil fuels and later trying to convert those to run on renewable energy is likely to be **costly**.
- * **Electrification in rural areas** and developing states is a priority development objective which should use renewable energy sources, often off-grid, as much as possible.

Fuel Decarbonization



Ensure Sustainable Consumption & Production(SCP)

- * The Middle East is increasingly dependent **on imports from outside the region.**
- * This increases exposure to **geopolitical risks** and dependence on potentially volatile global markets.
- * Supply disruptions and price spikes for commodities can disrupt businesses, harm low-income groups, and foster **social unrest.**
- * **Negative environmental impacts** on exporting regions.
- * Therefore, the **natural wealth** should be managed more wisely.



Policy Actions



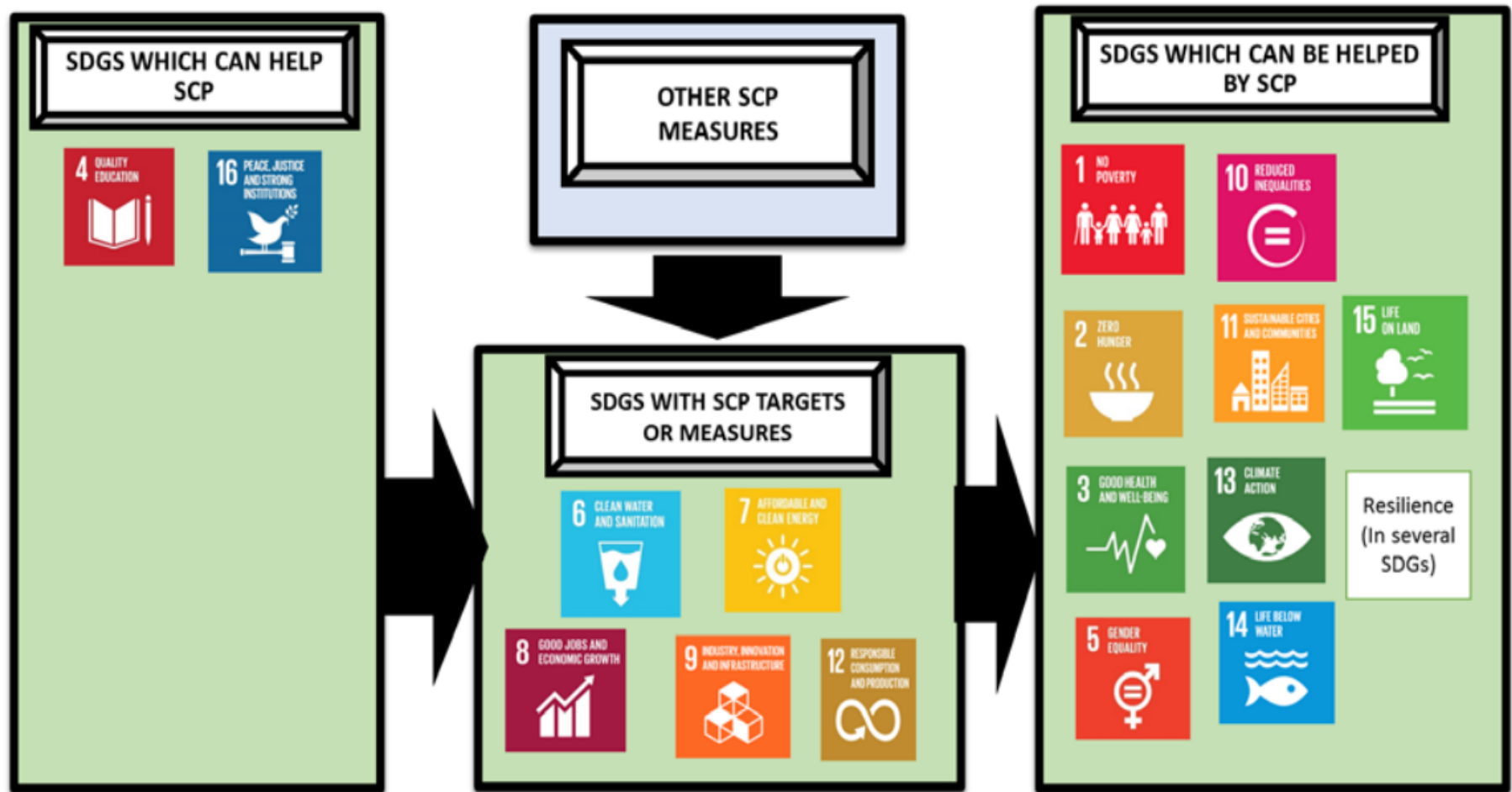
- * green tax reforms;
- * promotion of less materialistic lifestyles;
- * shifting emphasis to social relations and work-life balance;
- * education that provides life skills for self-provisioning;
- * regulation of consumer loan schemes;
- * business models based on leasing and sharing;
- * requirements for long product warranties and reparability;
- * multi-purpose buildings.

Challenges in SCP

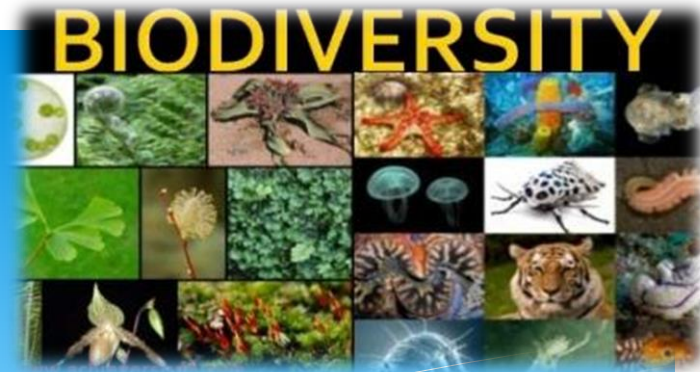
- * A transition to SCP needs to influence **culture and social norms**.
- * Working with the **media** to influence the images it conveys of desirable lifestyles and consumption patterns.
- * Regulations should contribute to wellbeing and livelihoods while also reducing **environmental impacts**.
- * given the social value of **micro-SMEs**, it can be important for local governments to support and protect them



ENSURE SCP and SDGs



Protect the ecosystem and biodiversity



- * There are four SDGs which are directly related to protecting biodiversity and ecosystems.
- * No SDG target mentions protecting biodiversity in general.
- * SDGs 6, 14, and 15 can be considered as means to protect biodiversity.
- * The key targets may be 8.4 on decoupling economic growth from environmental degradation, and various targets under Goal 9 which aim to make industrialization sustainable.
- * important contributions to protecting ecosystems would also be made by the sustainable transport (11.2) and pollution reduction targets (11.5. and 11.6.) under the cities goal (11), the promotion of renewable energy, energy efficiency (SDG 7), education for sustainable development (SDG 4), and peaceful societies (SDG 16).

Example: SDG 6



- * Target 6.6. on protecting ecosystems is a major objective.
- * The means to achieve it are included in target 6.3 (on reducing pollution, increasing wastewater treatment and recycling),
- * target 6.4 (on increasing water use efficiency),
- * and target 6.5. (on integrated water resources management).
- * A better ecosystem protection include target 6.1. (universal and equitable access to safe and affordable drinking water),
- * target 6.3. (improving water quality),
- * target 6.4. (reduce water scarcity).

Safeguard Ecosystem & biodiversity



Pollution prevention and control



- * Pollution of air, water, and soil has reached alarming levels in many places in the region and poses **serious adverse effects**.
- * To strengthen pollution standards and regulations, and to enforce them effectively. (e.g. **WHO-guidelines**)
- * **Capacity building** assistance to strengthen standards, improve monitoring and reporting, and compliance and enforcement.
- * For reducing pollution, **economic policies** are also necessary.
- * **Energy and resource efficiency**, renewable energy, and sustainable transport are keys for reducing pollution, especially air pollution.
- * The **3Rs** are key approaches for reducing waste and resource use, which in turn reduces pollution.

Cleaner Production

- * It is a business strategy that can increase **profits**.
- * Governments can provide **regulatory advantages** to companies with cleaner production processes.
- * Subsidies for cleaner production innovations and **favourable loans** for cleaner production investments.
- * Land use plans can consider the **co-location of industries**.
- * For cities, establishing effective systems for **collection and treatment of sewage**.
- * **Decentralised** sanitation systems and ecological treatment systems.

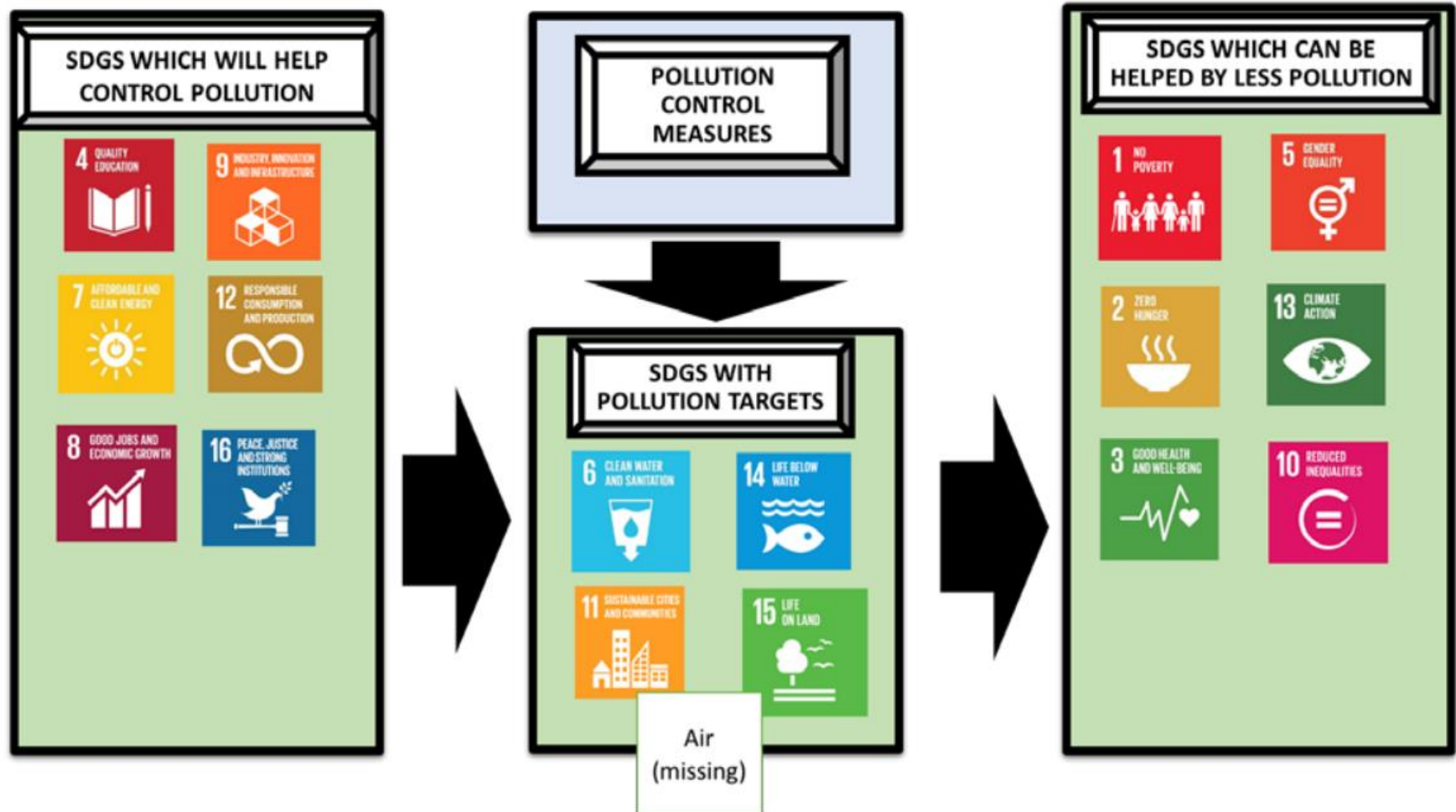


Co-benefit



- * It can reduce the costs of **reducing pollution** since different kinds of pollution often have common sources.
- * Governance **strategies** should include multi-stakeholder participation and community-based resource management.
- * Reducing **leakage of nutrients** from agriculture requires awareness raising and capacity building.
- * Approaches that have potential for realising **multiple benefits** include low-input and organic farming, integrated agriculture using animal manure as fertilizer, non-till farming, agroforestry and permaculture.

Pollution prevention and control



Sound waste management



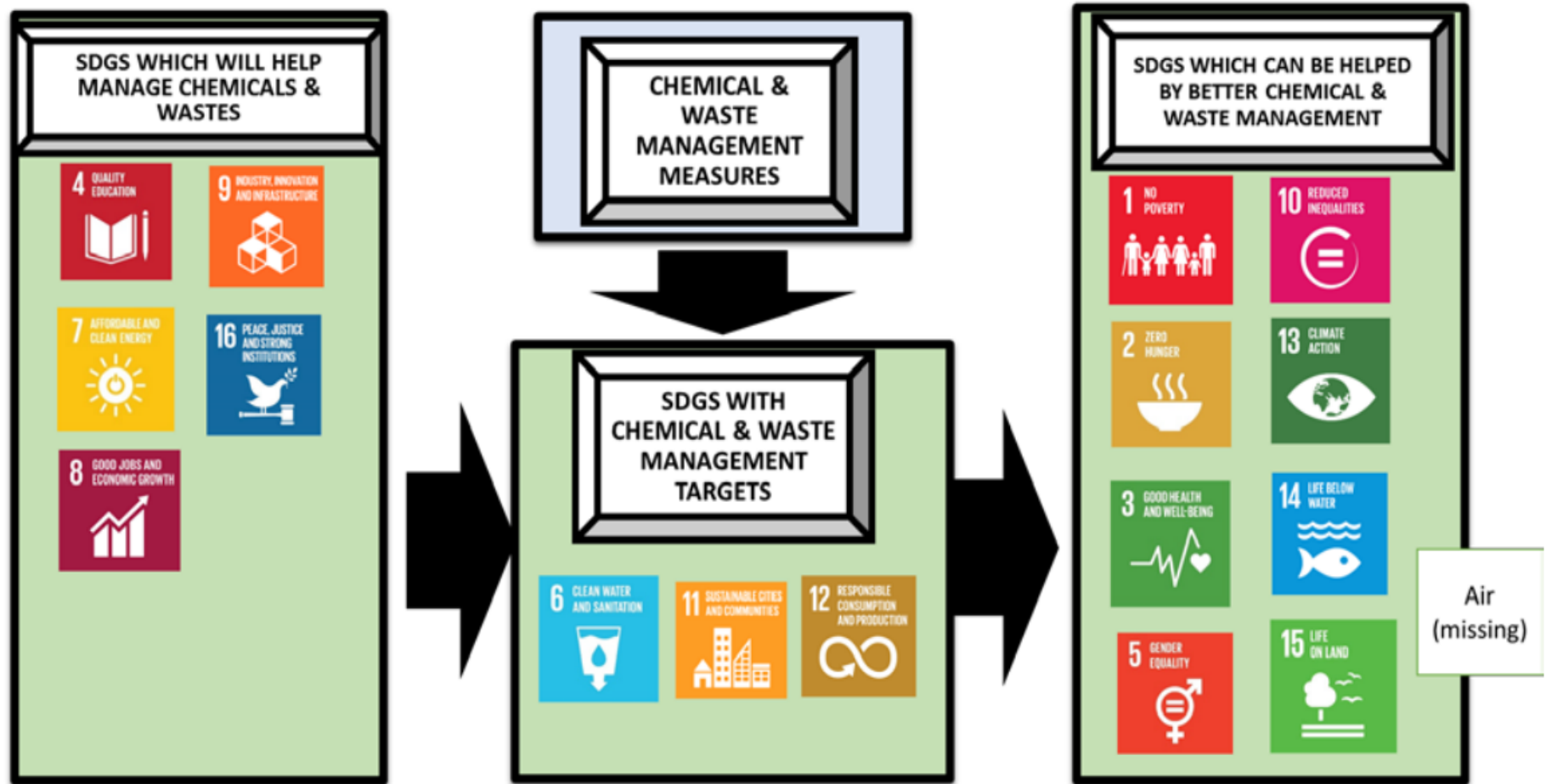
- * In the Middle East **inappropriate management** of waste and chemicals is a serious threat to human health and ecosystems.
- * **Recycling** is often carried out with primitive techniques and inadequate protection.
- * Investments in such **low-cost options** can drastically improve sanitary conditions, reduce GHG emissions, save money for local governments as a result of the reduced need for transportation and disposal, and also generate green jobs.
- * Establishment of **collection systems** and safe treatment facilities for hazardous waste would have significant health benefits.
- * Materials recycling can gradually be upgraded and **formalised**.
- * **Training** of informal recycling workers may be needed in order to avoid unintended negative impacts on livelihoods.

Chemical wastes



- * Sound management of chemicals is the focus of target 12.4, while waste management and sanitation are included in SDG 6 on water and SDG 11 on cities.
- * Protection of ecosystems and pollution control, particularly SDGs 7, 8, and 9.
- * The social goals of poverty reduction, improved food security, improved health, and reduced inequality.
- * Improved chemicals management is a major factor helping to conserve land and water ecosystems.

Ensure sound management of chemicals and wastes



Scientific understanding of the environment



- * Scientific knowledge is needed to address **environmental problems**.
- * **Natural science** research is necessary, but contributions from the **social sciences** is also necessary.
- * The region needs better **data generation** systems and capacity for environmental monitoring.
- * **Regional and national** efforts need to be well-coordinated.
- * **Business and government leaders** should understand the interlinkages between the environment and development.
 - * Intergovernmental Panel on Climate Change (IPCC).

Environmental Sciences and SDGs

- * Basic science, particularly for the environment, is not highlighted well in the SDGs themselves.
- * Target 14.a. which calls for increased scientific knowledge about oceans.
- * There are no targets on research relating to land ecosystems, air pollution, or climate change.
- * There are no targets on health impacts of pollution or other environmental factors such as climate change.
- * Target 9.5, not specifying what kind of research.
- * Target 7.a. is on clean energy research and technology.

