UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Progress by innovation

SUSTAINABLE DEVELOPMENT GOALS

The Future of Industries for Development

UNIDO's Vision 2050

THE FUTURE OF INDUSTRIES FOR DEVELOPMENT

UNIDO's VISION 2050

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Abbreviations

AfCFTA	African Continental Free Trade Area
AI	Artificial intelligence
CCM	Carbon capture machine
CCS	Carbon, capture and storage
CCUS	Carbon capture, utilization and storage
COP	Conference of the Parties of the United Nations Framework Convention on Climate Change
ESG	Environmental, social and governance
FDI	Foreign direct investment
GHG	Greenhouse gas
$GtCO_2$-eq	Gigatons of carbon dioxide equivalent
GWP	Global warming potential
IoT	Internet of Things
IIoT	Industrial Internet of Things
ITPOs	Investment and Technology Promotion Offices
ISO	International Organization for Standardization
LAC	Latin America and the Caribbean
LICs	Low-income countries
LDCs	Least developed countries
LMICs	Low- and middle-income countries
MICs	Middle-income countries
MSMEs	Micro, small and medium-sized enterprises
MVA	Manufacturing value added
ODA	Official development assistance
PPPs	Public-private partnerships
R&D	Research and development
SDGs	Sustainable Development Goals
SEZs	Special economic zones
SIDS	Small island developing states
UNIDO	United Nations Industrial Development Organization

UNIDO's New Vision

The world is undergoing profound changes – changes which present challenges, but also unprecedented opportunities for development. With UNIDO's "Vision 2050: The Future of Industries for Development", we are charting a course for the Organization which enables us to support our Member States to seize these opportunities emerging from the megatrends which are rapidly reshaping both our world and industries.

Demographic shifts, emerging technologies, digitalization and artificial intelligence, changing trade patterns and the global transition to greener and more digital economies offer unique chances to leapfrog old development models. We have outlined a path to achieve an impactful transformation and present UNIDO's offer on how we can support our Member States and partners in making it a reality.

Our Vision is to create a fair global economy in which poverty and hunger are eradicated and where industries create decent jobs, foster innovation and promote prosperity while protecting people and the planet.

Gerd Müller

Director General of UNIDO

Industry is the key driver of progress and innovation.

We have the knowledge and the technologies needed for this transformation. What we need is a new global deal for industry and the wider economy, one which mobilizes new partnerships, including with the private sector and channels significant investments into sustainable industries and a prosperous and resilient future for the Global South. Investing in local value addition, supporting innovation and ensuring open markets and fair trade are essential to this effort, as are good governance and enabling frameworks to incentivize the investments needed. Industry is the key driver of job creation, income generation and improved living standards worldwide – a catalyst for progress and economic growth.

UNIDO's vision paves the way for sustainable development worldwide.

Our Vision underscores the great importance of UNIDO's mandate for sustainable industrialization to advance global development and tackle global challenges. Through our ""Industries for Development" framework, UNIDO supports countries in creating fair and sustainable supply chains, promoting agro-industries and local value addition to end hunger and in driving clean energy and climate action. Cross-cutting priorities of industrial policy, skills development, digitalization and AI, private investment and development finance, gender equality and youth empowerment are at the core of this mission.

UNIDO's efforts are guided by clear principles: sustainability, fairness and innovation with a strong national ownership of our programmes and alignment with the UN agenda. Partnerships with governments, the private sector and the wider UN system are essential to turning our Vision into reality.

The Vision is the result of broad consultation with Member States and experts and it builds on foresight studies and regional priorities.

Together with our Member States and partners, we can build the Future of Industries for Development, industries which truly serve people and the planet.

Gerd Müller,
Director General
United Nations Industrial Development Organization (UNIDO)

Introduction

The world is changing at an unprecedented pace. The astonishingly rapid development of new technology, major demographic and geoeconomic shifts, growing conflict and the acceleration of climate change are all creating greater uncertainty and sometimes alarm about our futures.

Twenty-five years into the new century we stand at a crossroads. We have to ask ourselves: what kind of future do we want? And how do we get it? Decisions we make now to harness and govern technology, to combat environmental degradation, manage demographic trends and tackle poverty and inequality will determine whether we live in a sustainable environment free from want, or one mired in conflict and perpetual crises.

In response to increasingly complex and interconnected global challenges, the United Nations Industrial Development Organization (UNIDO) is looking ahead to the next quarter of a century to imagine the future of industry in 2050, and to refine the priorities that will guide industrial development.

This matters because industry plays a key role in achieving the Sustainable Development Goals (SDGs), which, as highlighted recently by the United Nations Secretary General, remain "woefully off track" (UN 2025). Industrial development is essential for creating broad-based economies that are better able to resist shocks, including climate shocks. It stimulates growth, leading to more jobs for women and men, improved incomes and better living conditions. It is also pivotal in eradicating hunger and tackling poverty, as well as achieving environmental protection and delivering access to clean, modern energy for all.

Through targeted reforms, industrial policy can simultaneously drive the positive change needed in economies, societies and the environment to build a more equitable, sustainable world. It is no surprise then that global interest in industrial development, along with the associated economic, social and environmental policies, has risen significantly over the past decade. Its renewed popularity among policymakers holds particular promise for developing countries, where implementation of industrial development strategies can have wider development impacts.

Working with partners, UNIDO is uniquely positioned to support its Member States in achieving sustainable development in these domains. For almost six decades, the Organization has been at the forefront of global efforts to propel industrial development as an engine of growth and prosperity, supporting its Member States to develop more productive, efficient and resilient industries that are the bedrock for broader societal development.

Speaking at UNIDO's inaugural Industrial Development Board in 1967, the first Executive Director, Ibrahim Helmi Abdel-Rahman, emphasized the importance of technical know-how and international cooperation, with UNIDO acting as a "bridge between the developing countries and the industrially advanced countries" to encourage knowledge and technology transfer. Today, UNIDO pursues the same fundamental goals, while adapting its approach in response to evolving global development challenges.

Through a wide array of industrial development services, UNIDO works to ensure Member States have the knowledge, technology and institutions needed to thrive. The focus remains primarily on developing countries, including least developed countries (LDCs) and small island developing states (SIDS), while at the same time assisting middle-income countries (MICs) and emerging markets.

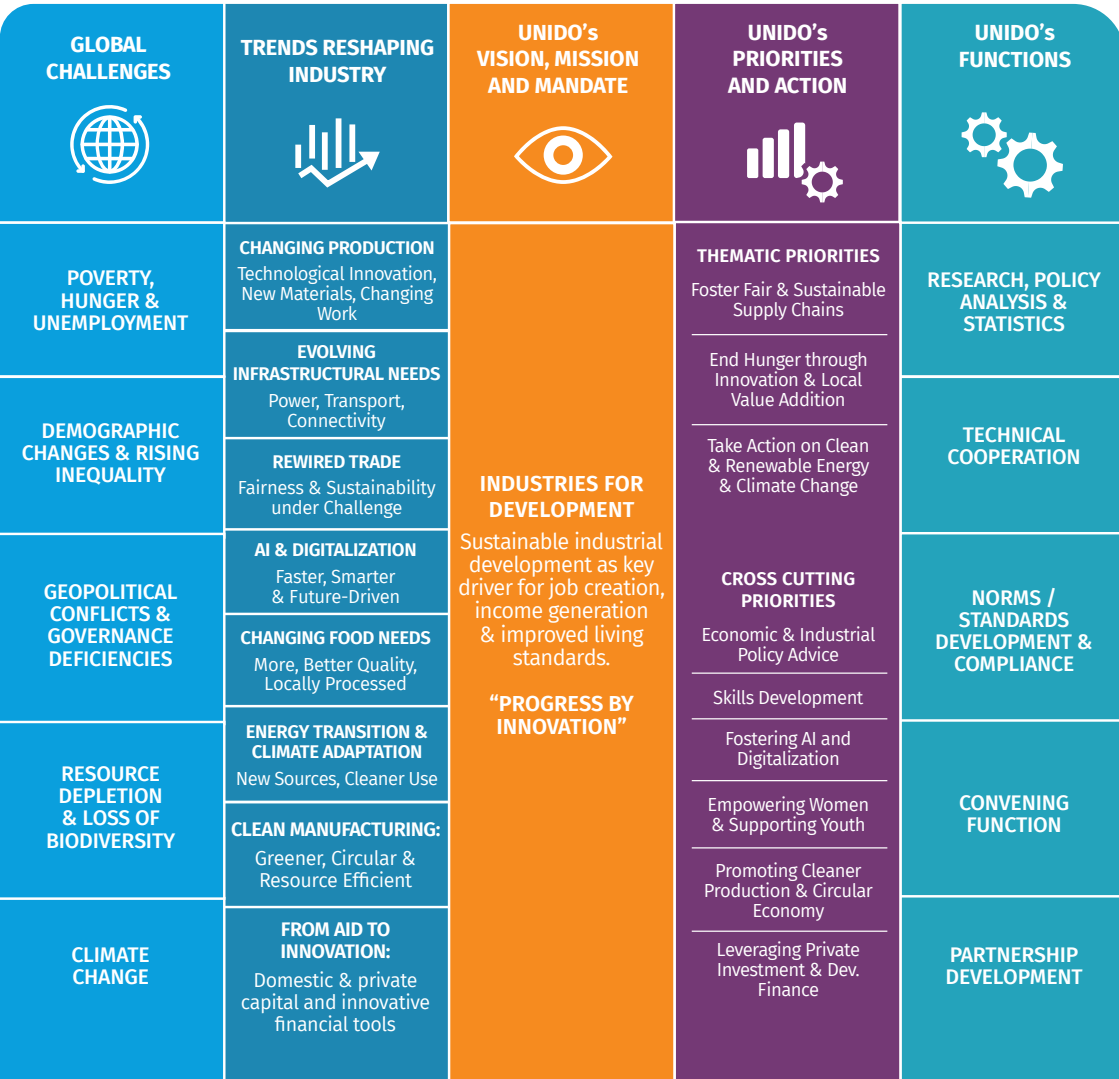
Developed nations also benefit from UNIDO's expertise, gaining insights into industrial development from knowledge-sharing and analytical services, targeted projects, and collaboration with developing industries in the Global South.

Since 2021, UNIDO has sharpened its business model, realigning and expanding its portfolio while making service delivery more efficient. To further improve industrial development services for its Member States, UNIDO is now also updating its vision and strategy. It is realigning its priorities, according to the Organization's mandate and adopting a more targeted programmatic approach, as outlined in this vision document.

This new Vision 2050 "The Future of Industries for Development" was not developed in isolation. It is a collaborative effort that has benefited from extensive consultations with experts across the Organization and beyond it, drawing on insights from consultations with Member States and foresight studies conducted in the areas of industrial development, sustainable supply chains, ending hunger, energy and climate change.
In this vision document:

Chapter 1 provides an overview of the most pressing problems facing the world today, while Chapter 2 explains why industrial development is key to solving many of these issues. Chapter 3 lays out details of what trends are influencing industrialization and what that could mean for future development. In Chapter 4 we present our vision for more equitable and sustainable industrial development, outlining in Chapter 5 what action the Organization will take to deliver this vision. Lastly, Chapter 6 sets out the principles and functions that underpin UNIDO's engagement, along with its regional focus.

FIGURE 1: OVERVIEW ON STRUCTURE OF THE UNIDO VISION 2050 – THE FUTURE OF INDUSTRIES FOR DEVELOPMENT



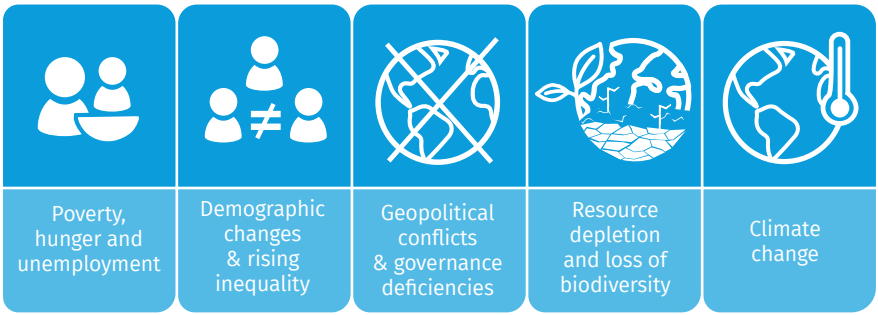
1 The fragile future of global development

Over the past two centuries, technological progress and economic growth have dramatically reduced poverty and improved living standards across much of the world. As recently as the mid-1800s the majority of the world's population could expect to live short and impoverished lives. Since then, rapid industrialization, technological advancement and expanding global trade have driven remarkable development gains, leading to a dramatic fall in poverty levels. Progress was greatest between 1990 and 2015 when extreme poverty dropped from almost 36 per cent to just 10 per cent (World Bank 2018). As millions were lifted out of destitution, a middle class emerged in many low- and middle-income countries (LMICs) (Brookings 2023), fuelling further demand for industrial goods and services and an expansion in global trade. These trends drove similar improvements in life expectancy, health, education and per capita income.

However, due to overlapping global crises and persistent structural vulnerabilities these impressive gains have not been sustained. The global financial crisis of 2007-09 marked the beginning of a slowdown in progress, which intensified as a result of the COVID-19 pandemic and emerging geopolitical conflicts. Ongoing structural vulnerabilities such as low productivity, poor infrastructure and limited diversification continue to constrain developing countries. Meanwhile, growing trade barriers and the rise in global conflicts are disrupting local value chains and the supply of goods around the world, from industrial inputs to foodgrains and fuel. The result is that by 2024 extreme poverty had barely budged from 2015 levels. It is also ever more concentrated in low-income, fragile and conflict-affected states, especially in sub-Saharan Africa, which remain less resilient to shocks.

The global development model is becoming increasingly unsustainable, placing disproportionate environmental and economic burdens on developing countries. Unchecked overconsumption and overproduction driven by unsustainable economic models are accelerating resource depletion, biodiversity loss and climate change. The environmental costs of this model are largely externalized to developing countries, which are least able to deal with their consequences. Pervasive inequality, marginalization within the global trade system, the resurgence of global oligarchies, deepening crises in governance institutions, stagnating economic growth and soaring debt levels further undermine the prospects for equitable and sustainable development in LMICs. Given the interconnectedness of the global economies, their impacts will not be felt in isolation but will have far-reaching consequences for global stability, prosperity and security.

There are **five key challenges** confronting humanity today.



1.1 POVERTY, HUNGER AND UNEMPLOYMENT

FACTS

Today, **808 MILLION** people, or 9.9 per cent of the world's population, live in **extreme poverty.** Progress in poverty eradication has stalled since 2019. (World Bank 2025).

In 2024, **673 MILLION** people faced **hunger** (FAO 2025).

In 2024, **unemployment** for young men and women exceeded **12 %** compared to just under **5 %** for the population as a whole (ILO 2024).

OUTLOOK

By 2050 more than **489 MILLION** people or 5 per cent of the global population will still live below the poverty line (UNIDO upcoming).

In 2050, there will be still **304 MILLION hungry** people, **3,1 %** of the global population (UNIDO upcoming).

970 MILLION new **jobs needed** by 2050, 17 per cent due to automation, 83 per cent to demographic changes (UNIDO upcoming).

Extreme poverty remains alarmingly high, reversing years of progress. The number of people living on less than $3 a day has risen in recent years and now stands at over 800 million. Of those, 700 million are living in extreme poverty, below $2.15/day. Showing little sign of decline, the current trajectory paints a grim picture, with sub-Saharan Africa facing the greatest burden. Economic stagnation, weak public institutions, limited access to quality education and healthcare and fragile infrastructure continue to lock millions into cycles of deprivation. Climate change adds an additional layer of vulnerability, undermining livelihoods and displacing entire communities, especially in rural areas.

Hunger is deepening due to conflict, climate shocks and economic instability. Global hunger has reached crisis levels, with 2024 marking the sixth consecutive year of rising acute food insecurity. A deadly combination of protracted conflicts, more frequent and severe climate-related disasters, macroeconomic volatility and dwindling international aid has left millions unable to meet basic nutritional needs. The most vulnerable populations—children, women and the displaced—are bearing the brunt. Rising food prices, supply chain disruptions and declining agricultural yields due to droughts

and floods are expected to further worsen the outlook in the coming years.

Unemployment and informal work are driving widespread economic exclusion. High unemployment remains one of the most persistent and damaging causes of poverty and hunger. In many developing countries, demographic pressures and weak economic diversification have made it impossible to generate sufficient decent work opportunities. But it is not just a lack of jobs. Official unemployment statistics miss the millions of people in LMICs who are trapped in informal, underpaid and precarious work without access to decent job opportunities. The rapid rise of automation and technological advancements are only compounding these challenges, risking poorer outcomes for low-skilled workers and exacerbating existing income inequalities.

1.2 DEMOGRAPHIC CHANGES AND RISING INEQUALITY

FACTS

In 2023, five out of every six people in the world—approximately **83 %** of the global population—lived in developing economies (UNCTAD 2024).

Over **half of the world's population** live in urban areas (UN-HABITAT 2024).

Globally, **65 %** of the population live in countries where **income inequality** is increasing (DESA 2025).

OUTLOOK

The global population is projected to **peak** at just under **10.3 BILLION** by 2084, then ease to ~10.2 billion by 2100 (UN 2024).

In 2050, **six out of seven people** will live in developing countries (UNCTAD 2024).

Urban populations will more than double by 2050, with nearly **70 %** of people living in cities (Worldbank 2025). Most of this urbanization will take place in Africa and Asia.

Demographic change, conflict and climate disruption are intensifying inequality across and within countries. Population growth, urbanization and displacement are transforming the global landscape and widening the gap between the world's haves and have-nots. The greatest deprivation is increasingly concentrated in specific geographic regions, particularly in fragile and conflict-affected states. Rising conflict and climate-related disasters are driving a surge in forced displacement and migration.

Climate change is now a leading driver of displacement, adding urgency to adaptation and resilience efforts. Weather-related hazards and climate-driven environmental degradation, such as floods, storms, draught and wildfires, are uprooting millions from their homes. While estimates of future displacement vary, the trajectory is clear—and alarming.

Global inequality is worsening, driven by wealth concentration and unequal access to opportunity. After years of progress, inequality is rising again, particularly within countries. Although global income inequality between nations has modestly declined, within-country disparities have surged. The wealthiest 1 per cent now control nearly half of global assets, while the bottom 40 per cent of adults own less than 1 per cent.

Inequality is also deeply embedded in households, where gender disparities remain entrenched. Research shows that as much as 30 per cent of global income inequality originates from differences within households, often along gender lines. Despite global progress on gender equality, women and girls continue to shoulder a disproportionate share of unpaid care and domestic work, limiting their access to education, formal employment and economic independence.

Unplanned urbanization is straining infrastructure and service delivery in developing countries. Today, over half the world's population live in urban areas, a share expected to rise significantly by 2050. However, infrastructure and public services are not expanding at the same pace. This is particularly acute in low-income and lower-middle-income countries, where urban expansion often takes the form of informal settlements that lack access to safe housing, clean water, sanitation, electricity, education and healthcare.

1.3 GEOPOLITICAL CONFLICTS AND GOVERNANCE DEFICIENCIES

FACTS

Fragile contexts (mostly developing countries) housed ~25 per cent of the world's population, but **72 %** of the **extreme poor** in 2024 (OECD 2025).

70 % of the world's acutely food-insecure population reside in **conflict-affected** or **fragile countries** (WFP 2025).

As of end-2024, **123.2 MILLION** people have been forcibly **displaced.** Most new displacement and high-fatality conflicts are in low- and middle-income regions (UNHCR 2025).

Almost **half of Africa's population** have seen governance deteriorate, mainly as a result of weaker security (Mo Ibrahim Foundation 2024).

OUTLOOK

Fragile countries could host **92 %** of the **extreme poor** by 2040 (OECD 2025).

A drop in trade resulting from geopolitical conflicts could lead to **welfare loss** of up to **12 %** in some regions, especially in those with lower incomes (WTO 2022).

War, trade disruption and fragile institutions are fuelling global instability and human suffering. Armed conflicts are pushing millions into poverty, hunger and displacement. The vast majority of the world's food-insecure population now live in conflict-affected areas, underscoring the devastating link between warfare and hunger. Prolonged violence destroys infrastructure, disrupts food systems and displaces communities, undermining development gains and worsening humanitarian crises.

Geopolitical tensions are fragmenting global trade and weakening multilateral cooperation. Persistent geopolitical rivalries are shrinking global trade volumes and weakening international coordination mechanisms. Economic fragmentation driven by sanctions, protectionism and regional blocs threatens to roll back decades of progress on trade-led development. As supply chains become more localized and less efficient, growth slows and the potential for global poverty reduction diminishes.

Weak governance compounds instability and undercuts resilience in vulnerable regions. Geopolitical conflict often coincides with weak or failing governance structures. In many regions—including parts of sub-Saharan Africa—a deterioration in governance is becoming more pronounced. Ineffective

institutions, weak rule of law and political exclusion erode the state's capacity to deliver essential services and uphold basic rights. This not only weakens public trust but also leaves countries more vulnerable to external shocks and internal unrest.

Fragile states bear the brunt of conflict, corruption and lost opportunity. In fragile and conflict-affected states, weak governance and widespread corruption entrench cycles of poverty and violence. Poor institutional performance discourages foreign investment, limits economic diversification and diminishes prospects for sustainable growth. These countries face high levels of social unrest and political instability, and they often lack the institutional capacity needed to manage recovery or implement reform.

1.4 RESOURCE DEPLETION AND LOSS OF BIODIVERSITY

FACTS

2.2 BILLION people lack access to safely managed household drinking water (WHO, UNICEF 2025).

Up to 75 % of the world's soils are already **degraded,** affecting 3.2 billion people (UNESCO, 2024).

Wildlife populations declined by **73 %** between 1970 and 2020 (WWF Living Planet Report, 2024).

1.8 Earths are **required** to sustain current human lifestyles (Global Footprint Network 2025).

OUTLOOK

Global **natural resource** use is projected to increase by **60 %** from 2020 levels by 2060 (UNEP IRP 2024).

More than **5 billion people** could face **water shortages by 2050** (defined as inadequate access to water for at least one month per year (WMO 2024).

If **soil degradation** continues at current rates, **up to 90 %** of the world's population could be affected by 2050 (UNESCO 2024).

The extraction of **critical minerals** could increase by **up to 500 %** by 2050 to meet clean energy demands (World Bank 2020).

Global resource consumption is rising unsustainably, driven by high-income economies. In an increasingly urbanized and populous world, the global consumption of natural resources has tripled over the past five decades. This growth is largely fuelled by expanding infrastructure and consumption patterns

in high-income countries, which consume six times more resources per capita than low-income nations (UNEP 2024). This imbalance places disproportionate pressure on the planet's ecosystems, accelerating environmental degradation while leaving poorer countries more vulnerable to resource scarcity.

Water scarcity is emerging as a defining challenge of the 21st century. Over 2 billion people lack access to safe household drinking water. Climate change, pollution, population growth and inefficient water use are exacerbating this crisis. In many regions, aquifers are being depleted faster than they can be replenished, while surface water sources are shrinking due to rising temperatures and irregular rainfall. The implications for agriculture, public health and industry are severe, particularly in already water-stressed regions.

Soil degradation threatens global food security and land productivity. Many of the world's soils are already degraded, and the trend is worsening. Unsustainable agricultural practices—including overuse of chemical fertilizers, monocropping and deforestation—are depleting soil fertility, reducing agricultural productivity and threatening food security. As population pressures grow, restoring soil health through regenerative farming, sustainable land use and better land governance will become increasingly urgent.

Fossil fuel reserves are shrinking, yet unsustainable consumption persists. Global consumption of fossil fuels remains dangerously high, even as conventional oil and gas reserves are projected to decline significantly in the coming decades. Despite increasing investment in renewables, fossil fuels still account for more than 80 per cent of the world's energy mix. Continued overreliance on finite carbon-intensive energy sources not only exacerbates climate change but also poses major risks for long-term energy security and economic stability.

The global surge in demand for critical minerals is straining finite reserves. Since the early 2000s, demand for critical minerals like copper, lithium, cobalt and rare earth elements has skyrocketed, driven by the expansion of renewable energy technologies and high-tech manufacturing. While essential for decarbonization and digitalization, the extraction of these minerals—often concentrated in environmentally and socially sensitive areas of the Global South—must be managed responsibly to avoid potential for further environmental harm.

Biodiversity loss is accelerating at a catastrophic rate. The natural world is deteriorating rapidly, with around 30 per cent of assessed species globally threatened or extinct as of 2021. Habitat loss from agriculture, deforestation, pollution and climate change is the primary driver. Each year, millions of hectares of forest disappear, along with the countless species that depend on them. This collapse of biodiversity not only disrupts ecological balance but also undermines the resilience of food systems, livelihoods and economies.

Unchecked resource consumption threatens both environmental sustainability and economic resilience. If current consumption and extraction patterns continue, the world risks crossing planetary boundaries with devastating consequences for future development. Environmental degradation, combined with rising resource costs and supply chain instability, could derail progress toward poverty reduction, job creation and inclusive industrialization.

1.5 CLIMATE CHANGE

FACTS

Global **temperatures** hit a new record in 2024, reaching an average of **1.55°C** above pre-industrial levels (UNWMO 2025).

Approximately **1.8 BILLION** people are currently affected by **drought** (UNCCD 2023).

Sea levels rose by an average of **4.7 mm** per year between 2015 and 2024 (WMO 2025).

In 2024, over **150** unprecedented **climate disasters** were recorded worldwide (WMO 2025).

OUTLOOK

Under current policy scenarios, global **temperatures** could **rise** by up to **2.28 °C** above pre-industrial levels by 2050 (UNIDO upcoming).

Even with full implementation of current national climate plans, emissions will reach **51.5 gigatons of carbon dioxide** equivalent ($GtCO_2$-eq) by 2030—only 2.6 per cent below 2019 levels (UNFCCC 2024).

Up to three-quarters of the global population could be affected by **drought** by 2050. (UNCCD 2025).

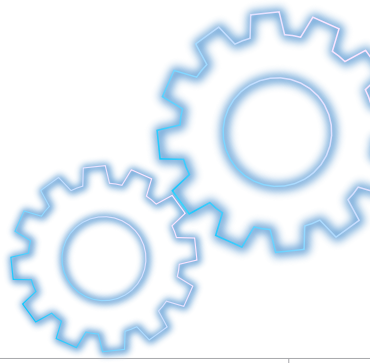
Despite growing awareness and policy commitments, the world remains dangerously off track in limiting global warming. Even if current national climate pledges are fully implemented, global emissions will remain only marginally below 2019 levels. This trajectory places the world on course for an average temperature increase of approximately 2.6°C by the end of the century—far above the Paris Agreement's goal of limiting warming to 1.5°C. The gap between ambition and action continues to widen, underscoring the need for deeper emission cuts and stronger policies and implementation mechanisms.

The physical impacts of climate change are becoming increasingly visible and severe. In 2024, global temperatures reached record highs, intensifying the pace of glacial melt, sea-level rise, and the loss of Arctic and Antarctic sea ice. Heatwaves, wildfires and prolonged droughts have become more frequent and more intense, pushing ecosystems to the brink and threatening biodiversity, food systems and human health. These changes are no longer distant risks—they are lived realities with escalating consequences for all sectors of society.

Climate change is a growing economic risk, severely impacting industries and global supply chains. Extreme weather events and ecosystem collapse rank among the top threats to businesses over the next decade. Floods, heatwaves and storms are disrupting manufacturing operations, damaging infrastructure, and driving up logistics and insurance costs. The UN Office for Disaster Risk Reduction reports that climate-related disasters have caused annual losses of $170 billion over the past decade, with the heaviest impacts borne by industry and construction.

The poorest and most vulnerable countries are being hit hardest by the climate crisis. Least developed countries (LDCs) and small island developing states (SIDS) are on the frontlines of climate change, despite contributing the least to global emissions. Sea-level rise, extreme weather events and prolonged droughts are devastating infrastructure, displacing communities and destabilizing fragile economies.

Climate change is also reshaping risks in wealthier nations, highlighting the global nature of the crisis. High-income countries have greater resources to respond to climate threats, but they are not immune. Rich economies increasingly face challenges such as climate-related migration, mounting pressure to finance the energy transition, and widening social inequalities exacerbated by climate shocks. Businesses, meanwhile, are adapting to serious climate-related risks, including supply shortages, resource price spikes and disruptions to infrastructure (Deloitte 2024). These risks undermine competitiveness, strain public services and test the resilience of even the most advanced economies.



2 Transformation through industrialization

Industrialization has historically been a powerful engine of prosperity, particularly for developing countries. It has long served as a proven catalyst for economic growth by creating jobs, raising incomes and driving technological progress. In the 20th century, countries that embraced industrial development saw rapid improvements in infrastructure, wages and productivity. Yet today this model faces new challenges: climate change, geopolitical instability, inequality and demographic pressures make it clear that growth for growth's sake is no longer enough. What is urgently needed is a more thoughtful, inclusive and sustainable model of industrialization.

Industrialization has repeatedly transformed economies and helped countries withstand major global shocks. Between 1960 and 1975, the share of industry in GDP nearly doubled in low-income countries (LICs)—from 12 to 23 per cent—and rose from 23 to 38 per cent in middle-income nations (World Bank 1978). In recent decades, Asia's industrial surge, led first by Japan and the Asian tigers and then by China and India, has fuelled sustained GDP growth (World Bank 1993). The COVID-19 pandemic underscored the importance of strong industrial capabilities; countries with resilient manufacturing sectors navigated supply chain disruptions more successfully (UNIDO 2022).

Manufacturing remains central to industrial transformation by catalyzing innovation, employment and value chain integration. The sector not only generates economies of scale and productivity gains but also drives technological diffusion and structural change. Through linkages across services, construction and logistics, manufacturing creates indirect employment and builds economic resilience, making it a strategic engine for long-term development in a volatile global environment.

For developing countries, industrialization offers a vital pathway to economic diversification and long-term prosperity. By investing in infrastructure, skilled labour and competitive supply chains, countries can unlock higher productivity and more inclusive growth. As industrial capacity expands, so does the demand for better jobs and higher-value-added production, paving the way for sustained improvements in living standards and economic resilience.

Despite its benefits, industrialization's current trajectory imposes high environmental costs that threaten long-term sustainability. Industrial sectors account for nearly 30 per cent of global greenhouse gas (GHG) emissions (WEF 2024), with demand for carbon-intensive materials like cement and steel projected to increase by a third by 2050 (IEA 2020). Meanwhile, natural resource extraction has more than tripled since 1970, reaching 92 billion tons annually by 2017 (UNEP 2019) —a scale that far exceeds ecological limits.

Industrial progress remains highly uneven, with many developing countries lagging behind. In 2024, manufacturing value added (MVA) per capita in Organisation for Economic Co-operation and Development (OECD) countries stood at $5,414, compared to just $177 in LDCs (UNIDO National Accounts Database). While upper-middle-income countries saw MVA rise to 23.2 per cent of GDP, lower-middle and low-income countries stagnated at 14.9 per cent and 9.0 per cent respectively. Latin America and Africa, in particular, have struggled to keep pace with Asia, with some nations experiencing premature deindustrialization (UNIDO 2020, UNCTAD 2021).

Industrial growth has also contributed to growing social and health disparities, particularly among vulnerable populations. Air pollution from industrial emissions causes nearly 7 million premature deaths annually (WHO 2024) and income gains from industrialization often bypass rural and marginalized communities. Women, in particular, remain excluded from industrial benefits in many contexts. In some cases, traditional livelihoods are lost to industrial expansion without adequate compensation or alternative opportunities.

Reindustrialization is urgently needed to revive and reshape industrial development in lagging regions. Simply reversing deindustrialization is insufficient; industrial growth must now prioritize low-carbon technologies, resource efficiency and inclusive job creation. A strategic shift toward green industry is essential to ensure developing countries can industrialize without repeating the environmental and social mistakes of the past.

To ensure industrialization delivers broad-based and lasting benefits, it must be reoriented toward sustainable development. This requires collective action across all sectors to redefine industry's role in society. Only by embedding sustainability at the core of industrial strategies can long-term prosperity be achieved without jeopardizing environmental integrity or social equity.

A paradigm shift is needed to align industrialization with sustainable development objectives. Business as usual is no longer possible; future industrial strategies must integrate environmental and social considerations, redefining the role of industry in fostering shared prosperity. Sustainability must be embedded at the core of industrial policy—not as an afterthought, but as a foundation for economic transformation.

WHAT DOES SUSTAINABLE INDUSTRIALIZATION MEAN?

Sustainable industrialization means economic growth through industrialization that protects the environment, distributes benefits more broadly and promotes long-term prosperity. Achieving these goals will require a shift in how industries operate, from maximizing short-term economic returns to focusing on long-term, holistic development.

Environmental sustainability should be the norm.

This means scaling up green technologies, such as renewable energy, adopting cleaner production processes and embedding circular economy principles. Industries must embrace practices that cut emissions, reduce water consumption and minimize material waste.

Social equity and inclusivity must be central.

Governments and industries alike must invest in education and skills development to ensure that industrialization allows everyone to thrive inclusive policies, such as fair labour practices, gender equality and social protections are keys to ensuring growth distribution.

Technological innovation should support sustainability.

Partnerships are needed between governments, industries and research institutions to bring forward technologies that reduce resource consumption, enhance energy efficieny and create new, low-carbon industries. By fostering innovation, nations can move toward a green economy that balances economic growth with environmental stewardship.

Industrialization must align with the SDGs.

Sustainable industrialization is inherently linked to the achievement of the SDGs. By linking industrial policy to the SDGs, particularly SDG 9 (Industry, Innovation and Infrastracture).

Achieving sustainable industrialization requires coordinated action between governments, industry and global partners. Governments must implement policies that incentivize green technologies, support innovation and enforce strong environmental regulations. Meanwhile, businesses must adopt responsible practices that integrate sustainability into core operations, supply chains and long-term investments.

Global cooperation is essential to avoid zero-sum outcomes and ensure equitable industrial development. Without collective action, industrial growth in one region could undermine environmental progress or worsen inequality elsewhere. International frameworks, technology transfer and finance must work in tandem to ensure that industrialization contributes to global public goods and shared resilience.

Closing the industrial gap will require unlocking access to technology, finance and knowledge for developing economies. With the right support, industries in these countries can leapfrog to cleaner and more efficient models of production. This transformation can simultaneously raise productivity, reduce emissions and generate broad-based development across economic, social and environmental dimensions.

A call for action - The private sector and governments must work hand in hand to drive sustainable industrial growth. Policy instruments like tax incentives for green technologies, research and development (R&D) funding and environmental standards can encourage responsible industrial investment. At the same time, corporate responsibility and impact investing must move to the forefront, ensuring that businesses prioritize long-term value creation over short-term profit.

International solidarity is indispensable to safeguard the global commons and ensure no country is left behind. Transboundary industrial challenges—from climate change to supply chain disruptions—require cooperative solutions. Multilateral frameworks must support countries in aligning industrial ambitions with global sustainability goals.

In summary, industrial growth must be reimagined to reflect the imperatives of our time: sustainability, equity and resilience. Pursuing industry-led development without addressing its environmental and social costs is no longer tenable. By adopting inclusive and green industrial strategies, countries can transform industry from a source of risk into a force for good. In this light, building "industries for development" becomes not just an economic priority but a moral obligation to future generations.

3 Trends reshaping industries

Developing countries seeking to build robust industrial sectors are facing an increasingly uphill struggle as complex global forces reshape production, trade and technology. Yet, while challenging, these shifts also provide strategic opportunities for those able to adapt their industries, embrace innovation and adopt sustainable industrial technologies.

3.1 CHANGING PRODUCTION: TECHNOLOGICAL INNOVATION, NEW MATERIALS, CHANGING WORK

92 MILLION people **jobs** could be **displaced** globally by 2030 **due** to **AI,** while **170 MILLION new jobs** may **emerge**.

WEF 2025

Over the next decade, **1.2 BILLION young** people will reach working age in developing countries, yet only **420 MILLION jobs** are expected to be created under the current **trajectory.**

World Bank 2025

a) OUTLOOK TO 2050

A new era of industrial production is emerging, driven by digital technologies and advanced materials. The convergence of smart manufacturing, artificial intelligence (AI), robotics and new material innovations is transforming traditional production processes. These technologies are unlocking unprecedented gains in efficiency, precision and product customization. At the same time, cutting-edge materials such as graphene, self-healing composites, biodegradable polymers, nanomaterials and metamaterials are enabling the development of lighter, stronger and more sustainable products. As manufacturing shifts from standardized mass production to highly customized, service-integrated outputs, the very nature of industrial goods is evolving—becoming more intelligent, adaptive and responsive to individual needs.

By 2050, advanced economies are expected to be dominated by autonomous smart factories, while others gradually catch up. In leading industrial countries, fully integrated smart factories powered by AI, robotics and real-time data analytics will carry out the majority of production with minimal human oversight. These factories will optimize performance, reduce waste and continually adapt to changing demand. In contrast, many developing countries may initially continue to rely on low-cost manual labour and traditional processes. However, growing investments in digital infrastructure, industrial technologies and workforce development are expected to enable a gradual convergence toward more automated and intelligent systems.

Breakthrough materials and additive manufacturing will reshape supply chains and sustainability strategies. Innovations in material science will revolutionize product design—enabling ultra-light vehicles, energy-efficient buildings and environmentally friendly manufacturing. Additive manufacturing (3D printing) will increasingly replace conventional production methods, enabling localized, on-demand manufacturing that reduces transportation, lowers emissions and minimizes inventory needs. This will significantly disrupt global supply chains, shifting the centre of gravity closer to consumers and production hubs in the Global South.

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b) CHALLENGES

Population growth is impacting the global industrial transition, particularly in developing regions. As the world population is expected to keep growing until mid-2080, a massive number of new jobs will be needed. Much of this job creation must occur in developing countries, where rapid population growth and slower industrialization compound economic vulnerabilities.

Technological disruption will transform labour markets, creating new opportunities but also significant risks. Automation and AI are accelerating the decline of traditional manual labour roles, while creating demand for highly skilled workers in data analysis, programming, digital systems and advanced manufacturing. Without proactive labour policies, this shift could exacerbate unemployment and inequality—especially in countries lacking robust education and training infrastructure. Inclusive reskilling and upskilling initiatives, particularly for youth and women, are essential to ensure equitable participation in the future industrial workforce.

Sustainability remains a critical concern as industrial technologies evolve. Although smart manufacturing and advanced materials offer sustainability benefits, they also carry risks of increased energy consumption and environmental degradation. If not regulated appropriately, these systems could accelerate resource depletion, pollution and carbon emissions. Embedding sustainability principles into industrial policy and production standards will be essential to mitigate the ecological footprint of the next industrial wave.

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c) OPPORTUNITIES

Rapid urbanization and a growing middle class in developing countries will drive demand for new, local industrial products. As populations expand and incomes rise, consumption patterns will shift toward higher-value industrial goods. Regionalizing supply chains in the Global South presents a major opportunity to stimulate domestic manufacturing, reduce reliance on imports and meet demand more efficiently. This localized growth can enhance resilience and create new markets for innovative, tailored products.

Smart manufacturing and advanced materials can drive sustainability and reduce production costs. By integrating AI, the Internet of Things (IoT) and resource-efficient materials, industries can lower waste, reduce energy use and transition to more circular production models. These innovations can help align industrial production with climate and sustainability targets, while also improving quality and efficiency in ways that benefit both producers and consumers.

Shifting toward high-skilled employment in industry can improve livelihoods—if supported by robust education systems. The emergence of new industrial roles offers the potential for better-paying, more meaningful employment across both advanced and emerging economies. To realize this potential, governments must invest in education, vocational training and digital literacy, ensuring that workers are equipped for the demands of a rapidly evolving industrial landscape. If done right, industrial transformation can become a catalyst for inclusive growth and long-term prosperity.

3.2 EVOLVING INFRASTRUCTURE NEEDS: POWER, TRANSPORT AND CONNECTIVITY

750 MILLION people still **lacked electricity** in 2023.

IEA 2025

1 BILLION people **live** over 2 km from an **all-season road.**

World Bank, 2025

Over 2.6 BILLION people remain **offline**, 32 per cent of global population.

ITU 2024

Around $94 TRILLION in **investment** is required by 2040 to fulfil global **infrastructure needs** and to meet the **SDGs**.

World Bank 2022

a) OUTLOOK TO 2050

By 2050, industrial infrastructure will be shaped by clean energy, digital connectivity and resilient construction and transport systems. As the backbone of economic growth and social development, infrastructure will need to evolve into an integrated ecosystem—efficient, sustainable and digitally connected—to meet the demands of future industry. This transformation is especially critical for developing countries, where modern infrastructure can unlock access to markets, services and new industrial opportunities.

Energy systems will be increasingly powered by renewables, supported by advanced storage and distribution technologies. Solar, wind, geothermal and hydropower will dominate the energy mix, while innovations such as grid-scale batteries and hydrogen fuel cells will enhance energy reliability and grid resilience.

Transport networks will be redefined to be cleaner, faster and more autonomous. Electric vehicles, high-speed rail and automated logistics systems will reduce congestion, lower emissions and facilitate more efficient movement of goods and people—key drivers of industrial competitiveness.

Digital connectivity will serve as the nervous system of future infrastructure. Emerging **technologies** such as 5G and IoT will enable real-time monitoring and adaptive management of infrastructure systems, while satellite internet and drone-based logistics will extend critical services to remote and underserved areas.

Decentralized infrastructure solutions will be essential to ensure inclusive access in developing and rural regions. Innovations such as microgrids, off-grid internet and mobile logistics platforms offer scalable and cost-effective alternatives to conventional infrastructure, playing a central role in expanding industrial participation beyond urban centres.

Urbanization will accelerate demand for energy, construction, transport and digital infrastructure, reinforcing their role in inclusive industrial development. As cities grow, well-planned infrastructure will be crucial not only for supporting productivity and innovation, but also for ensuring environmental sustainability and social equity.

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b) CHALLENGES

Insufficient funding remains the greatest obstacle to infrastructure development, particularly in developing countries. High debt levels, fiscal constraints and governance challenges limit the ability of many governments to invest in infrastructure where it is needed most.

Technical and logistical barriers complicate the deployment of sustainable infrastructure solutions. Integrating intermittent renewables into outdated energy grids, delivering resilient transport to remote regions, and scaling digital networks in difficult terrains pose substantial engineering and planning challenges.

Social and environmental risks can delay or derail critical infrastructure projects. Land disputes, displacement of communities and ecological degradation often lead to political resistance and regulatory hurdles, slowing implementation timelines and raising project costs.

Unprofitable but essential infrastructure projects are often neglected due to low private sector interest. Infrastructure that serves important social or environmental functions—like sanitation or climate adaptation—is frequently overlooked by investors seeking higher returns, leaving significant development needs unmet.

c) OPPORTUNITIES

Strategic investment in infrastructure offers a direct path to sustainable industrialization and job creation. Clean energy, transport and digital systems can unlock productivity, connect markets and improve living standards—particularly in fast-growing urban regions (UN DESA 2025). It would also drive demand in the construction industry, underpinning further economic growth.

The renewable energy and construction sectors can boost job creation in developing economies. Expanding renewable generation capacity and building-related infrastructure can create millions of green jobs while reducing energy poverty and dependence on fossil fuels (IRENA and ILO 2022).

Expanding trade and transport infrastructure is vital to economic integration and regional growth. Roads, ports, industrial parks and special economic zones (SEZs) offer a powerful opportunity to boost intra-regional trade, reduce dependency on commodity exports, connect remote areas to markets and encourage industrial diversification.

Cross-border infrastructure initiatives are key to fostering global cooperation and connectivity. Projects like China's Belt and Road Initiative and the European Union's Global Gateway show the potential of international infrastructure investments to drive economic convergence and prepare for future mobility demands.

Urban mobility can be improved through sustainable transport investments. Public transit systems, electric vehicle infrastructure, and non-motorized transport options like cycling lanes reduce congestion, lower emissions and improve urban livability.

Digital infrastructure is critical to closing the digital divide and enabling inclusive development. Expanding broadband and mobile coverage allows communities to access education, healthcare, financial services and governance tools. In digitally connected regions, innovation ecosystems, entrepreneurship and local tech industries can thrive.

3.3 REWIRED TRADE: FAIRNESS AND SUSTAINABILITY UNDER CHALLENGE

70 % of trade relies on global **supply chains.**

OECD 2025

The global **ethical labels market** (including certified products like fair-trade and organic) was valued at **$1.13 BILLION in 2024** and is projected to grow **5.7 % annually.**

IMARC Group 2024

138 MILLION children, aged 5-17, are employed in global supply chains, **54 MILLION** of whom are engaged in **hazardous work.**

ILO 2025

LDCs hold 13–14% of the world's population but only about **1 % of global exports.**

UNCTAD 2025

a) OUTLOOK TO 2050

Global trade will remain dependent on complex supply chains, but structural shifts are under way. Despite recent disruptions from energy, material and food shortages and geopolitical tensions, narratives of deglobalization and reshoring are overstated. Reconfigurations largely reflect diversification rather than simplification of global supply chains (UNCTAD 2025).

Regionalization is set to deepen but will follow two distinct pathways. Regional production networks for regional markets could offer sustainable industrialization opportunities, particularly when anchored by regional firms in service-oriented sectors. By contrast, global networks led by lead firms will remain resilient, leveraging multilayered suppliers across regions to optimize efficiency and mitigate risks (Accenture 2023; World Bank 2021).

Technological advances will make supply chains faster, smarter and more adaptive. AI, robotics and data analytics will enable decentralized production tailored to local demand. Blockchain and other digital tools will enhance transparency, while circular economy models and sustainable sourcing will become mainstream. Yet industrial hierarchies will likely persist, with Asia's share of output rising while Europe and North America's decline, and Latin America and Africa struggling to expand (CGD 2023).

Regionalization and nearshoring will have limited impact on reshaping alliances and market access but risk excluding smaller economies. As multinational firms turn modestly to lower-risk suppliers closer to home,

micro, small, and medium enterprises (MSMEs) in poorer countries may be left out of global value chains, undermining jobs and inclusive development (WTO 2023).

Shifting consumer demands and regulatory changes will add further pressures. Firms will need to adapt to stricter standards in export markets and changing labour availability, transportation costs and environmental requirements, requiring continuous re-evaluation of supply chains (UNCTAD 2023).

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b) CHALLENGES

Persistent exploitation and inequality remain major risks in global value chains. Weak enforcement of labour standards perpetuates exploitative practices, while raising standards without coordinated action risks shifting production to even less regulated markets (ILO 2019; UNDP 2015).

Global lead firm-led value chains demonstrate resilience due to their complexity and diversification strategies. In sectors such as personal vehicles and apparel, multinational enterprises have multilayered supply networks across regions to optimize efficiency and mitigate risks. In consumer electronics, structural characteristics limit the feasibility of reshoring or full replication.

The cost of sustainable transitions threatens to exclude developing economies and MSMEs. Many smaller firms lack resources to adopt new technologies or comply with environmental regulations. Mechanisms such as the European Union Carbon Border Adjustment Mechanism (CBAM), while incentivizing greener production by imposing tariffs on imports from countries with lower environmental standards, may exacerbate inequalities by raising compliance costs (EU Commission 2021, TCD IMF 2022).

Geopolitical tensions, protectionism and technological disruption further fragment markets. Trade conflicts and high tariffs on manufactured goods from developing countries prevent industrial upgrading. Agricultural subsidies in developed countries also depress competitiveness in agriculture-dependent economies, reinforcing reliance on low-value exports (World Bank 2023).

c) OPPORTUNITIES

Sustainability can be a competitive advantage. Companies adopting clean production, ethical sourcing and transparent supply chains are better positioned to meet consumer demand, reduce costs through resource efficiency, and build brand loyalty (McKinsey 2023).

Technology can enhance efficiency and accountability. AI, IoT and blockchain improve real-time monitoring of environmental and labour practices while enabling innovation in eco-friendly products and materials (WEF 2025).

Regional integration offers pathways to resilience and industrial growth. Nearshoring and initiatives like the African Continental Free Trade Area (AfCFTA)—aiming to boost intra-African trade by 45 per cent by 2045—can strengthen local economies, reduce emissions and build more inclusive value chains (UNECA 2025).

3.4 AI AND DIGITALIZATION: FASTER, SMARTER AND FUTURE READY

Technology markets are projected to **grow** from **$1.5 TRILLION** in 2020 to reach **$9.5 TRILLION** by 2030.

UNCTAD 2023

Internet usage is **93 %** in **high-income countries** compared to **27 %** in **LICs.**

ITU 2024

In **LDCs, 70 %** of manufacturers still use **analogue technology.**

WEF 2024

a) OUTLOOK TO 2050

AI and digitalization are transforming manufacturing into highly automated, data-driven ecosystems. By 2050, advanced robotics, machine learning and real-time analytics will integrate seamlessly into production lines. Fully automated plants will use predictive maintenance, AI-driven quality control and self-correcting mechanisms to minimize downtime and optimize energy and resource use. The Industrial Internet of Things (IIoT) will connect machines, factories and global supply networks, creating adaptive production systems capable of responding instantly to fluctuations in demand.

Global production will be faster, more flexible and less dependent on geography. Remote management tools, virtual twins and cloud-based platforms will allow companies to operate and monitor facilities worldwide from central hubs. This could decentralize manufacturing, bringing production closer to consumer markets and enabling smaller, distributed facilities to serve regional demand.

Human roles will evolve from repetitive tasks to creative and strategic functions. AI will augment rather than replace workers in higher-value roles such as design, programming and systems management. Advanced human-machine collaboration will become central to productivity, with new forms of hybrid jobs emerging. In developing economies, automation could ease some low-skill labour shortages while creating new demand for digitally skilled workers.

AI-driven R&D will accelerate industrial innovation. From faster prototyping to material discovery and advanced product design, AI will drastically cut development timelines and costs. Flexible work models and global talent sourcing will further contribute to a more interconnected and agile industrial landscape.

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b) CHALLENGES

Unequal access to digital technologies threatens to widen industrial divides. Despite the transformative potential of AI and digitalization, significant barriers hinder their widespread adoption. This is particularly the case in LDCs, where most manufacturing processes lack any form of digital integration. And only a small portion of the population and MSMEs in these countries has internet access, limiting participation in the digital economy and slowing industrial upgrading.

LDCs are constrained by poor infrastructure, low investment and skills gaps. Many developing countries lack the research and technical capacity or the skilled workforce needed to adopt frontier technologies, making them heavily reliant on technology imports. Tariffs on digital and technology-related imports in the poorest countries are often significantly higher than the OECD average, further hindering access (UNCTAD 2025).

Environmental and ethical challenges must be addressed. AI models and digital systems are energy-intensive, adding pressure to already stretched energy grids and increasing carbon emissions. Ethical concerns such as data privacy, cybersecurity threats and algorithmic bias could undermine public trust and disrupt global supply chains if left unaddressed.

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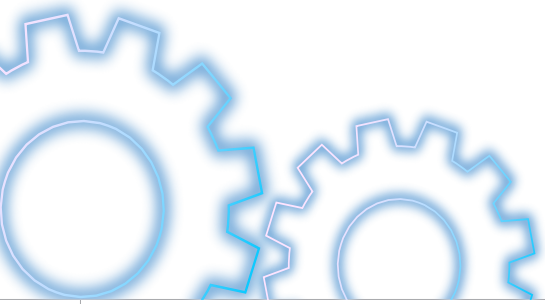
c) OPPORTUNITIES

AI and digitalization offer a pathway to higher productivity, efficiency and competitiveness. With technology markets projected to grow dramatically towards 2050, the integration of AI and frontier technologies into industrial ecosystems presents major growth potential for both developed and developing economies.

Inclusive digitalization can help developing countries leapfrog traditional industrial models. Targeted investments in digital infrastructure, skills training and affordable finance for MSMEs can enable these economies to integrate into global value chains at higher-value segments. Policies that promote technology transfer, open standards and regional digital cooperation will be crucial for narrowing gaps.

AI and digital tools can drive sustainability and ethical production. Smart factories can optimize resource use, reduce energy consumption and cut waste, directly supporting climate goals. Blockchain and IoT can provide real-time traceability of materials and labour practices, strengthening compliance with environmental and human rights standards. Firms that embrace these solutions will gain a competitive edge in increasingly sustainability-conscious markets.



3.5 CHANGING FOOD NEEDS: MORE, BETTER QUALITY AND LOCALLY PROCESSED

In low-income countries, **71.5 %** of the population **cannot afford a healthy diet.**

WHO 2024

Globally, approximately **30–40 %** of **food production** is **lost** before it reaches markets, often **due to inadequate post-harvest handling, storage** and **processing.**

FAO 2019

To meet growing food demand, global **agricultural** and **fish production** is expected to increase by **14 %** by 2034, with production of meat, dairy, and eggs forecast to rise by **17 %** and livestock inventories by **7 %.**

FAO and OECD 2025

a) OUTLOOK TO 2050

By 2050, agro-industries must deliver more, better quality food with lower environmental impacts. Rapid population growth and urbanization—especially in the Global South—will fuel demand for nutritious, safe and convenient foods, alongside calls for fairer farm incomes and more sustainable supply chains.

Climate adaptation will reshape what is grown, where it is grown and how it is processed. Heat-, flood- and drought-tolerant crops, water-efficient irrigation, vertical farming and agroforestry will spread, while resilient storage, cold chains and climate-proof logistics will become key to stabilizing supply and smoothing seasonal shocks.

Protein sources and staples will diversify as diet trends increasingly favour health and sustainability. Blue foods (or foods sourced in aquatic environments), cultured and plant-based proteins, insects, algae and new nut cultivars will gradually supplement livestock, while coastal and aquaculture systems expand responsibly to meet rising protein demand.

Transparent, digital supply chains will become the norm from farm to fork. Tracking tools, IoT sensing and data platforms will help farmers use resources efficiently, prove provenance and cut waste. Shorter regional networks and more local processing will keep more of the value close to the farm gate.

The Global South will play a larger role in production and processing as regional value chains strengthen. New trade pacts and local food systems will give communities greater sway over resources and markets. Coupled with improved standards and skills, this could share benefits and opportunities more widely.

b) CHALLENGES

Meeting the food needs of a 10-billion world while cutting emissions is a dual imperative. Agriculture is already responsible for around one-third of GHG emissions. With demand for food expected to rise significantly in response to growing populations, the industry must become more efficient without increasing its ecological footprint.

Hunger, malnutrition and obesity now coexist, exposing a systemic failure in food quality. Food security is undermined to varying degrees by three critical factors: affordability, availability and nutritional value (UNIDO 2025). In parts of Africa, hunger is rising; elsewhere supply disruptions are emptying shelves. At the same time, the growing prevalence of ultra-processed, low-nutrient diets drives rising obesity. Developing countries, more reliant on agriculture and less resilient overall, are particularly vulnerable to these crises. (IPCC 2022).

Climate shocks, conflict and pandemics strain inputs, supply chains and household resilience. Extreme weather, disrupted fertilizer supplies and blocked trade routes hit low-income households hardest, with women most affected. In developing countries, which are more vulnerable due to weak institutions, higher dependence on agriculture and lack of funds for adaptation, these risks are amplified.

Post-harvest losses and weak infrastructure erode food security and producer incomes. Inadequate rural roads, storage, grading and cold chains cause sizeable quantity and quality losses, forcing some regions toward capital-intensive farming, while others struggle to equip smallholders with modular smart technologies.

Uneven competitiveness, trade friction and concentrated market power stifle local value creation in much of the developing world. Dumping, tariff and non-tariff barriers and stringent private standards disadvantage emerging agro-industries with weak quality controls and outdated plants eroding export competitiveness further. Added to that, dominant food multinationals often squeeze out smaller actors, forcing ongoing reliance on cash crops and raw materials. The result is little diversification, poor investment in nutritious food production for local markets, and more barriers to building sustainable food systems.

c) OPPORTUNITIES

Upgrading processing and quality systems alongside investment in resilient infrastructure can transform food systems. Modernizing mills, dairies, fish handling and fresh-cut facilities that meet Hazard Analysis Critical Control Point (HACCP), International Organization for Standardization (ISO), and fair trade and eco-certification standards, among others, allow economies to move up the value chain, enter higher-margin markets and deliver safer, more nutritious products. Helping smaller firms in developing countries to adopt these standards can unlock income and strengthen competitiveness. Investments in feeder roads, cold chains, packhouses and climate-smart storage can cut post-harvest losses, steady prices and improve food access, creating more secure and inclusive food systems.

Climate-smart production methods offer opportunities to boost productivity while restoring ecosystems. Adopting practices such as precision irrigation, improved seeds, regenerative agriculture, integrated pest management and soil carbon stewardship can enhance yields and resource efficiency, and build resilience to drought and heat stress.

Inclusive business models and digital technologies create pathways to improve livelihoods and market access. Models such as contract farming, farmer cooperatives, women-led enterprises and out-grower schemes that promote fair pricing and timely payments can professionalize smallholder services and align incentives across value chains. At the same time, digital tools, including e-extension platforms, remote sensing and mobile advisory services, can enhance decision-making, while e-commerce and digital marketplaces allow producers to reach broader markets. Financial innovations such as mobile money, warehouse receipts, blended finance and index insurance can further de-risk investments for MSMEs, enabling them to grow and integrate more effectively into national and regional food systems.

Diversifying proteins and expanding blue and circular food systems can open new development opportunities. Sustainable aquaculture, alternative proteins and by-product valorization—from processing plant by-products to fish trimmings—can create additional revenue streams, reduce waste and meet the rising demand for healthy, low-carbon food options. These innovations contribute to more resilient and diversified food systems, reducing reliance on traditional protein sources and increasing local value creation.

Regional trade frameworks and proactive public policy can accelerate inclusive food system transformation. Agreements such as AfCFTA and the European Union's Cotonou Agreement can strengthen regional markets by streamlining rules of origin, recognizing quality standards and simplifying border procedures. Coupled with small and medium-sized enterprise (SME) upgrading, they can help countries move beyond raw commodities exports towards producing higher value, processed foods. Public policy can also catalyze change through nutrition-sensitive procurement programmes, R&D and extension services, affordable green energy for processing and fair competition enforcement, driving economic diversification, food security and equitable growth.

3.6 ENERGY TRANSITION AND CLIMATE ADAPTATION: NEW SOURCES AND CLEANER USE

Energy intensive industries account for **25 %** of global **CO_2 emissions.**

UNECE 2023

In 2023, the industry sector contributed approximately **6.5 $GtCO_2$-eq,** placing it third after power and transport sectors.

UNEP 2024

Renewables accounted for just **18.7 %** of total final **energy consumption** in 2021.

IEA 2024

a) OUTLOOK TO 2050

By 2050, industry will still be a major energy user, but systems will be cleaner, more decentralized and digitally managed. Ensuring industry has access to sustainable energy is essential for achieving the 2030 development agenda. With strong policy support and mature technologies, renewables will supply the bulk of electricity while fossil fuels use declines. Green hydrogen will scale up to meet the needs of hard-to-abate sectors, and carbon capture, utilization, mineralization and storage (CCUS/CCM) will mitigate remaining emissions from energy-intensive processes and power.

Resilience moves from a peripheral goal to a design principle across infrastructure and factories. Industrial assets will be built and operated to

withstand heat, floods and supply shocks, with climate-proof siting, modular backup generation, diversified fuels and contingency logistics embedded into corporate risk management.

Smart grids, advanced storage and electrification transform how energy is produced and used. Grid orchestration will balance variable wind and solar with lithium-sulfur batteries, graphene supercapacitors and perovskite-enabled solar cells, while high-temperature electrification and hydrogen replace fossil fuel-generated energy in steel, chemicals, cement and refining.

A more interconnected energy economy elevates the Global South as both producer and consumer. Cross-border interconnectors, regional power pools and green commodity trade expand as sun- and wind-rich regions export clean electrons, molecules and low-carbon materials into global value chains.

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b) CHALLENGES

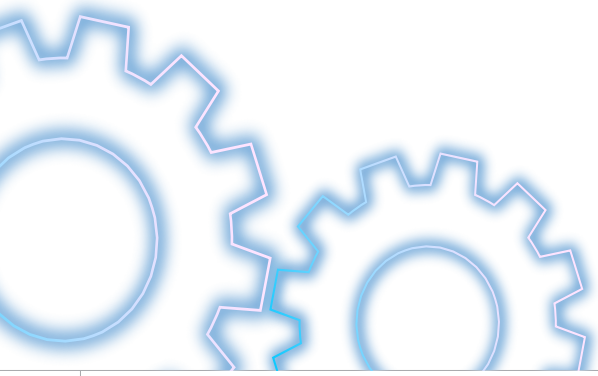
Balancing rising energy demand with emissions reductions and universal access remains the central challenge. Energy is the backbone of industrialization in emerging economies, yet the sector produces nearly three-quarters of global GHG emissions, while air pollution continues to claim millions of lives each year. LDCs and SIDS already face severe climate-driven disruptions to industrial production and supply chains, with knock-on effects on livelihoods and ecosystems well beyond their borders.

Delivering net zero emissions by 2050 will require unprecedented levels of investment and infrastructure development. Significant capital must be directed to both renewable energy and the climate-neutral use of fossil fuels, with priority given to modernizing outdated grids and building robust transmission capacity. However, in many regions, regulatory barriers, financing gaps and public opposition to new infrastructure will slow renewable energy deployment. Developing countries face the greatest constraints, as affordable clean energy solutions are expected to remain scarce while grid limitations will hinder scaling up (IEA, IRENA, UN, World Bank, WHO 2022).

The urgency is most acute in MICs, where energy demand is surging, and in the world's most vulnerable economies. For LDCs and SIDS, climate shocks are already disrupting industries and communities, yet financing and technology to adapt energy systems remain inadequate. To meet projected needs, annual climate finance for developing countries will need to more than triple by the mid-2030s, in line with COP 29's ambition of mobilizing $1.3 trillion per year.

Ensuring a just and sequenced transition is essential, particularly in economies still dependent on fossil fuels. Fossil energy sources accounted for around four-fifths of primary energy consumption in 2023, with clean options still under 20 per cent. Developing countries require transitional pathways—such as fuel switching, efficiency improvements and carbon capture and storage (CCS)—that avoid locking in fossil fuels in the long term while maintaining affordability and energy security.

Emerging system pressures further complicate the transition. Rapidly growing demand for cooling, refrigeration and cold chains will increase electricity needs and require low-global-warming-potential (GWP), energy-efficient technologies. At the same time, limited local capacity to deploy and maintain advanced energy systems slows progress, while surging demand for critical transition minerals poses environmental and supply chain risks. Managing grid intermittency also remains a major technical challenge: integrating large shares of variable renewables into ageing networks requires major upgrades in storage, flexible demand systems, advanced digital controls and market reforms. Finally, greater technology transfer will be vital for developing countries to build and maintain their own resilient, low-carbon energy systems.



c) OPPORTUNITIES

Investing in decarbonized, reliable power can close access gaps and accelerate industrial growth. Upgrading transmission and distribution, expanding distributed renewables and storage and modernizing system operations lower losses, improve reliability and create "shovel-ready" jobs while enabling clean electrification of industry.

The Global South can leverage natural endowments to build competitive green industries. Abundant solar, wind, hydro and renewable resources position many countries to produce cost-competitive green hydrogen, ammonia and low-carbon materials; co-investment by advanced economies and development banks can scale projects and reduce inequality.

Cleaner use of fossil energy provides near-term emissions cuts while bridging to net zero. High-efficiency generation, methane abatement, fuel switching (coal-to-gas-to-renewables), waste-heat recovery, and targeted CCS on cement, steel and chemicals are reducing emissions now without derailing long-term decarbonization trajectories.

Standards, certification and high-integrity disclosure unlock capital and market access. Credible schemes for renewable electricity, hydrogen, sustainable fuels and low-carbon products—paired with robust monitoring, reporting and verification —enable compliance, de-risk investment, and meet rising investor and buyer demands.

Carbon markets and regional energy integration can finance scale and resilience. Article 6 mechanisms, results-based climate finance and regional power pools enable cross-border trading of clean power and verified reductions, lowering system costs and improving reliability for industrial users.

Process innovation and digitalization cut energy intensity and costs. Electrified process heat, heat pumps, electric arc furnaces, advanced kiln technologies, circular material flows, AI-enabled controls and demand response reduce fuel use, stabilize operations and improve competitiveness, while advancing climate adaptation and mitigation together.

3.7 CLEAN MANUFACTURING: GREENER, CIRCULAR AND RESOURCE-EFFICIENT

Energy demand by mid-century could drop by **8 %** due to **efficiency gains,** better resource use and behavioural shifts.

IEA 2021

Climate finance in developing countries must rise from **$100 BILLION** to **$300 BILLION annually** by 2035.

UNFCCC 2024

Renewables could provide almost **90 %** of **global electricity** by 2050.

IEA 2021

Air pollution is responsible for **7 MILLION premature deaths a year.**

WHO 2025

Extraction and processing of **materials, fuels and food** account for ~50% of global GHG emissions and >90 per cent of biodiversity loss and water stress.

European Environmental Agency 2024

Global primary material use is projected to roughly double to **~190 BILLION tons** by **2060** without stronger resource **efficiency & circularity.**

OECD 2019

a) OUTLOOK TO 2050

By 2050, manufacturing is expected to be significantly greener, more circular and highly resource-efficient. The widespread adoption of cleaner production processes, renewable energy and circular economy principles—particularly in more developed countries—will drive major reductions in emissions and waste. Renewable energy sources such as solar, wind and green hydrogen will increasingly power industrial operations, while industrial symbiosis, where one sector's waste becomes another's input, will enable closed-loop production systems.

However, progress will remain uneven, especially where regulations are weak or market power is concentrated. In such cases, some companies will continue to prioritize cost savings over sustainability, missing out on the technological opportunities available for cleaner production.

Advances in materials science and digital technologies will reshape industrial supply chains. Biodegradable plastics, recyclable composites and other sustainable materials will replace environmentally harmful inputs, while AI, IoT and blockchain will enable transparent, traceable and resource-efficient operations. At the same time, the rising demand for critical minerals will drive stricter social and environmental standards to ensure ethical and sustainable sourcing.

Regulations and new business models will be key to enforcing sustainability at scale. Governments are expected to tighten emissions limits and incentivize eco-friendly production methods, while consumer preferences and corporate strategies increasingly favour circular models, driving systemic change across global value chains.

b) CHALLENGES

Many industries still prioritize short-term gains over environmental protection, driving pollution and resource depletion. Manufacturing will remain a leading contributor to global emissions and environmental degradation, while sectors like agriculture, energy and forestry will continue to overexploit natural resources, damaging biodiversity and ecosystems. Climate change amplifies these threats by disrupting weather patterns and food, energy and water security.

Pollution compounds the risks. Harmful chemicals from manufacturing, mining and agriculture will continue to contaminate air, water and soil, creating lasting damage to ecosystems and human health. These effects are likely to be especially severe in regions with limited environmental protections and infrastructure.

Outdated production processes and weak regulations hinder progress. Industries in many developing countries rely on resource-intensive methods, leading to deforestation, chemical pollution and depletion of vital materials. Weak environmental regulations and enforcement often exacerbate these impacts, allowing harmful practices to persist and eroding incentives for cleaner production.

The shift to the circular economy faces many structural barriers. High upfront costs to remodel processes, entrenched supply chains and consumer behaviour, along with unequal access to technology and expertise, will slow adoption of circular models and risk widening the gap between developed and developing nations.

Sustainability gaps in global supply chains undermine progress. Critical minerals and other industrial inputs are frequently sourced through practices that violate cleaner production principles. Without stronger global standards and traceability, these supply chain risks could widen development gaps between countries and slow the uptake of resource-efficient models.

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c) OPPORTUNITIES

Cleaner manufacturing offers major economic and environmental gains. Investments in circular waste management, eco-industrial parks and modernized production facilities can simultaneously boost competitiveness and reduce emissions. Applying circular strategies to key industrial materials—

cement, steel, plastics and aluminum—could cut emissions by up to 40 per cent; in the food system, reductions could reach 49 per cent (Ellen MacArthur Foundation, 2021).

Expanding circular economy infrastructure will accelerate the transition. Building recycling plants, waste-to-energy facilities and sustainable logistics networks will support resource recovery and reduce dependence on raw material extraction. Integrating AI-driven monitoring and digitalization will improve energy efficiency, track emissions in real time and inform greener industrial decision-making.

Capital and policy frameworks are increasingly available to support green industrialization. Public and private investments in clean technologies and infrastructure are growing, while a range of policy models—such as green industrial strategies, fiscal incentives and regulatory frameworks—offer proven templates for accelerating the shift toward sustainable production. Seizing these opportunities will enable countries to build competitive, climate-resilient industries that thrive within planetary boundaries.

3.8 FROM AID TO INNOVATION: FINANCING INDUSTRY THROUGH DOMESTIC AND PRIVATE CAPITAL AND INNOVATIVE FINANCIAL TOOLS

44% of the global population live in countries that **spend more** on **debt interest than** on **education** or **health**.

WID 2024

The **MSME sector** in developing countries faces an **annual financing gap** of **$5.2 TRILLION.**

WEF 2024

Foreign Direct Investment (FDI) flows dropped **11%** in 2024 and continue to decline, hitting developing countries hardest.

UNCTAD 2025

Remittance flows to LMICs were **~$685 BILLION** in 2024, larger than FDI and ODA combined; up from **$647 BILLION** in 2023.

World Bank 2024

Official Development Assistance (ODA) dropped **7.1%** in 2023, **9.6%** in 2024, and is projected to further decline by 9 to 17% in 2025.

OECD 2025

a) OUTLOOK TO 2050

By 2050, industrial finance will be more diverse, blended and sustainability-driven. Public budgets, official development assistance (ODA) (of which only a small portion currently supports industrial development) and commercial lending will be increasingly complemented by innovative instruments such as green and social bonds, sustainability-linked loans, impact investing and catalytic public–private partnerships (PPPs). Carbon-market revenues and long-tenor funds from pension schemes and sovereign wealth funds will become major drivers of industrial finance.

Industry is a high-return investment and will require diversified financing. Investing in industry drives job creation, productivity and technological upgrading, making it a powerful tool for broader development in times of shrinking aid budgets. It is expected that industrial investments will play an increasingly prominent role in financing development, complementing foreign direct investment (FDI) and ODA. Mobilizing domestic savings, diaspora funds, remittances, entrepreneurial reinvestment and local capital markets for industrial development will be essential to reduce aid dependency and advance the achievement of the SDGs.

Digital finance will expand access, transparency and speed, helping industrial firms develop across value chains. FinTech platforms, alternative scoring, blockchain-based smart contracts and decentralized finance (DeFi) tools are expected to lower transaction costs, shorten disbursement cycles and improve traceability of proceeds, enabling more MSMEs to upgrade production processes and access supply-chain finance.

Public finance will target de-risking, while multilateral institutions anchor larger investment programmes. Governments will increasingly use PPPs, concessional windows and carbon pricing to generate new revenue streams and prepare bankable projects. Multilateral development banks and international financial institutions will anchor large-scale industrial programmes through guarantees, blended finance and favourable loans, crowding in institutional and private investors.

Environmental, social and governance (ESG) standards will increasingly shape capital flows and corporate behaviour. As investors demand measurable outcomes, companies will raise funds through sustainability-linked instruments tied to verifiable environmental and social targets; meanwhile, diaspora savings and emerging decentralized finance channels will complement remittances with investment in bonds and high-impact projects.

Multilateral development banks and international financial institutions will play a key role in de-risking investments in emerging markets. They will provide guarantees and favourable loans to attract more private sector participation. Governments will use carbon pricing mechanisms, based on clear and verifiable accounting standards, to generate new public revenue earmarked for green industrial projects, while large investors like pension schemes and sovereign wealth funds will shift their portfolios towards sustainable industry in support of long-term economic resilience.

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b) CHALLENGES

Developing countries face widening financing gaps amid shrinking fiscal space and changing aid dynamics. Rising sovereign debt, declining ODA and tighter global capital markets constrain governments' ability to finance industrial infrastructure, technology and skills development. Many countries remain overly dependent on external aid and struggle to mobilize domestic resources at scale.

MSMEs encounter persistent barriers to capital that block industrial transformation. High interest rates, collateral demands and underdeveloped financial infrastructure limit access to the patient, flexible capital needed for technological upgrading and sustainable practices. Investment attraction mechanisms are often weak and many countries lack the capacity to prepare bankable industrial projects.

Shifts in FDI away from manufacturing further intensify the pressure. The reorientation of FDI toward services disadvantages countries with underdeveloped infrastructure, while gaps in digital skills and capabilities reduce readiness to attract capital-intensive and digitally enabled manufacturing projects. Countries with weak infrastructure and skills gaps find it harder to attract the large, long-term industrial investments needed for value-chain integration.

Financing instruments are often mismatched to the realities of industrial transformation. Short-term aid structures and rigid loan terms cannot support the high-risk, long-gestation investments required for manufacturing growth.

Institutional and regulatory weaknesses raise risk and transaction costs. Outdated procurement and PPP frameworks, limited project preparation capacity and uneven ESG disclosure standards deter private investors and prolong time-to-finance, especially for complex industrial zones, logistics and clean-production facilities. Blended finance remains underutilized and, in many cases, poorly aligned with national industrial strategies, resulting in fragmented and small-scale interventions.

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c) OPPORTUNITIES

Innovative financing tools can unlock capital for MSMEs and industrial upgrading in developing countries. Diversifying funding sources can build resilience as ODA declines. Blended finance, risk-sharing facilities, credit guarantees, performance-based grants and public–private partnerships—complemented by microfinance, impact investing, supply-chain finance and receivables/warehouse-receipt systems—can ease collateral constraints and crowd in private funds.

Reforming blended finance and aligning it with industrial strategies can scale impact. Targeted and catalytic blended finance, linked to measurable development outcomes, can support large-scale industrial projects and leverage significant private investment. Investment promotion agencies and ministries can also build capacity to prepare projects, standardize contracts and coordinate with development finance institutions more effectively.

Strengthening domestic institutions can translate intent into investable projects. Upgrading investment promotion agencies and relevant ministries for project preparation, PPP management and aftercare—alongside standardized contracts and clear ESG taxonomies—can reduce uncertainty, accelerate approvals and improve deal bankability.

Debt restructuring and global financial reforms can restore fiscal space for industry development. Restructuring burdensome debt, extending maturities, or linking relief to investment can free resources for infrastructure, skills and technology while targeted reforms to concessional windows and risk-mitigation instruments can leverage larger pools of private capital. In parallel, building stronger domestic capital markets and exploring innovative multilateral financing will help countries sustain growth even as ODA declines.

4 Vision, Mission, Mandate

The world is undergoing a profound transformation marked by persistent poverty, hunger and unemployment, geopolitical tensions and faltering governance, as well as shifting demographics and widening inequality. At the same time, resources are dwindling, biodiversity is shrinking and the impacts of climate change are becoming increasingly clear.

These converging pressures demand a fundamental rethinking of economic development—and of industry's role within it. In manufacturing, traditional models are rapidly giving way to integrated, automated systems that redefine how goods are produced and consumed. These technologies promise significant gains in productivity, efficiency and sustainability. However, they also give rise to emerging risks, especially for developing economies, which may lack the capacity to develop new technologies as well as the infrastructure needed to successfully adopt them.

In response to these challenges and opportunities, UNIDO is refining its strategic focus and adapting its operational model to support the development of future-ready industries. This involves reassessing its priorities and broadening the scope of its services to more effectively respond to the complex and interconnected needs of Member States. The goal is to deliver more agile and forward-looking industrial development solutions in an environment shaped by uncertainty but rich with possibility.

Here we present our renewed vision for shaping industries of the future, outline our mission and mandate and highlight the key issues UNIDO aims to address within the context of global challenges and trends reshaping industry.

OUR VISION

A fair global economy, free from poverty and hunger, where industry, innovation and local value addition drive progress and inclusive growth decoupled from emissions and overexploitation of resources, delivering peace and prosperity for all.

By 2050 polluting factories and exploitative practices will be a thing of the past. In their place, intelligent, decentralized and climate-neutral industrial ecosystems will flourish. These systems will produce high-quality goods and food in closed loops, reusing and preserving resources while cutting waste. Powered by clean energy, they will produce little or no pollution, preserving biodiversity and safeguarding the planet for future generations.

In these future industries, workers will gain a fair share of the value they help to create, profiting from equitable pay, dignified conditions and opportunities to contribute creatively to innovation. The impact of these gains will extend beyond individuals to whole communities, generating better living standards and wellbeing along with broader economic and environmental benefits across societies.

Integral to achieving this vision, UNIDO champions the concept of "industries for development[1]" where industries act as catalysts for inclusive and sustainable social and economic progress. They should thrive primarily in developing countries but also take root in more developed nations. Through partnerships, technology exchange and joint ventures, industries in advanced economies can benefit from UNIDO actions and play a vital role in supporting development in the Global South.

OUR MISSION

Support Member States in building "industries for development"— industries that drive prosperity, reduce inequality and help to deliver long-term sustainable development.

Guided by the principles of sustainability, fairness and inclusion, innovation and learning, partnership and accountability, and ownership and alignment, we work hand in hand with governments, industries and development stakeholders to shape an industrial future that leaves no one behind.

OUR MANDATE

Accelerate sustainable industrial development as a key driver of job creation, income generation, improved living standards, access to sustainable energy and climate adaptation technology and the fight against hunger and poverty.

The delivery of our mandate is centred around five core functions: research and policy advisory services, technical cooperation, normative function and standards-related activities, convening function and partnership development.

Through our research and policy advice and our role as custodian of SDG 9 industrial statistics, we serve as a global knowledge hub. Our work in technical cooperation helps countries to build capacity, boost competitiveness and apply best practices across all sectors. Through pilot projects, technology transfer and business enablers such as eco-industrial parks, we support Member States in a range of areas from the adoption of digitalization and AI to advancing agro-industry to enhance food security. We promote sustainability by shaping international standards and aiding compliance for governments and MSMEs. As a convenor for international forums and events, we drive dialogue that fosters collaboration and influences industrial policy. And, finally, we forge multi-stakeholder partnerships able to mobilize resources and de-risk investments across countries, UN agencies and the private sector.

Through this comprehensive approach, UNIDO contributes to the achievement of SDG 9 (industry, innovation and infrastructure) along with the broader goals of the sustainable development agenda toward and beyond 2030, and maintains alignment with its Constitution, specifically Article 1, which states that *"The primary objective of the Organization shall be the promotion and acceleration of industrial development in the developing countries with a view to assisting in the establishment of a new international economic order." (UNIDO 1979).*

THE ISSUES WE ADDRESS

Through in-depth internal analysis, foresight studies and consultations with both industry leaders and Member States, UNIDO has identified three interconnected thematic issues related to the key challenges faced by developing countries These issues form the foundation of our strategic approach and shape our priority actions.

1. Industrial goods are not sourced sustainably or responsibly

- **Why it matters:** Reduces environmental degradation by using eco-friendly materials, minimizing waste and lowering emissions. Promotes local manufacturing to cut imports and boost regional economies. Encourages ethical labour practices, prioritizes economic inclusion, locally processed goods, social progress and sustainability.

- **Impact on sustainable industrial development:** Strengthens local economies by creating decent jobs and enhancing local value chains. Aligns industries with human rights and sustainability standards. Lower carbon footprint, circular economy integration and resource efficiency.

2. Food systems and agro-industries do not ensure equitable food security and income generation

- **Why it matters:** Offers significant opportunities for income generation and local value addition, in a growing market, bolsters food supply, and brings smallholder farmers into agro-industrial value chains. It also reduces environmental impacts by limiting deforestation, curbing soil degradation and reducing water pollution.

- **Impact on sustainable industrial development:** Enhances local processing, boosts income and jobs, and reduces hunger and poverty. Supports climate-smart, sustainable food systems and processing. Empowers marginalized communities, fosters rural development, promotes regenerative agriculture, cuts food waste, increases food safety and lowers carbon emissions.

3. Barriers remain in producing, using and accessing clean, efficient and sustainable energy systems.

- **Why it matters:** Transitioning to cleaner and more efficient energy systems supports climate change mitigation and adaptation, enhances energy resilience by diversifying energy sources, preserves biodiversity and minimizes pollution by cutting harmful emissions and industrial waste. Access to clean energy is essential for sustainable economic development. It is a key driver of the job creation, digital transformation and industrial growth needed to raise living standards and achieve long-term prosperity.

- **Impact on sustainable industrial development:** Enables energy efficiency, carbon capture and renewable energy integration while increasing the competitiveness of industries. Provides industries and communities with access to sustainable energy infrastructure. Limits industrial encroachment on ecosystems and reduces emissions. Creates green jobs, curbs costs and aligns with global climate targets.

Focusing on these critical issues aligns with UNIDO's 1997 Constitution, specifically article 2 (g) which mandates that UNIDO "assists developing countries in the establishment and operation of industries, including agro-related as well as basic industries, to achieve the full utilization of locally available natural and human resources and the production of goods for domestic and export markets, as well as contribute to the self-reliance of these countries".

In addition, we have identified **six cross-cutting issues** that are essential for the future of industrialization. These complement and reinforce progress in relation to the three thematic issues while ensuring alignment with the goals of the 2030 Agenda.

1. **Weak economic and industrial policy frameworks**

   Many countries lack coherent policies to guide inclusive, resilient and sustainable industrialization aligned with national and global priorities.

2. **Industrial skills gaps and workforce mismatch**

   Industries face shortages of skilled workers, particularly in technical, digital and green sectors, limiting productivity, innovation and job creation.

3. **Limited adoption of AI and digitalization**

   In many regions, slow adoption of digital technologies is holding back industrial development and undermining progress toward sustainability goals, increasing the risk of a widening development gap.

4. **Poor representation of women and youth in industry**

   Persistent gender and generational inequalities together with deficiencies in education cause continuing underrepresentation and unemployment and prevent full economic participation, innovation, inclusion and equitable growth.

5. **Unsustainable production and linear resource use**

   Current industrial practices often rely on the resource-intensive "take–make–dispose" model of production, which increases pollution, environmental degradation and climate risks.

6. **Insufficient private sector investment and finance for industry**

   Limited access to industrial finance and private sector capital constrains innovation, green technology deployment and infrastructure development.

The following section outlines in depth the key justifications for UNIDO's engagement in these thematic and cross-cutting issues, and provides details on future action.

5 UNIDO's priorities and action

To lead industrial transformation and meaningful change, UNIDO, as the United Nations' specialized agency for industrial development, must deliver timely, cutting-edge advice and services to Member States on emerging trends and technical solutions.

Our guidance should be practical and actionable, grounded in the Organization's extensive expertise and experience. It must also align with national and regional policies and individual industrial development strategies, ensuring their effectiveness and coherence with broader development goals.

5.1 FAIR AND SUSTAINABLE GLOBAL AND REGIONAL SUPPLY CHAINS

Sustainable Development Goals

UNIDO's work under this priority area primarily contributes to:

Inclusive, transparent and environmentally responsible supply chains are critical to achieving UNIDO's vision of industrial transformation by 2050. As global value chains adapt to climate imperatives, technological shifts and geopolitical realignments, developing countries face both challenges and opportunities in positioning their industries for sustainable growth. Access to reliable, high-quality materials is crucial for profitability, productivity and competitiveness. In particular, critical minerals such as copper, nickel, cobalt, lithium and rare earth elements are key to green industrialization and the energy transition. In this context, fair participation in global trade, equitable

value distribution and compliance with rising environmental and social standards becomes essential to building resilient and just industrial systems.

Supply chains are no longer neutral conveyors of goods—they are platforms for industrial upgrading, green innovation and inclusive development. Yet many producers in the Global South remain trapped in low-value sectors, vulnerable to price swings and constrained by inadequate infrastructure and opaque governance. Stronger corporate ESG commitments and due diligence regulations are rapidly reshaping what constitutes a "license to operate" in global trade.

Fostering fair and sustainable supply chains by 2050 requires a strategic realignment of policy, finance and innovation. Priorities include expanding certification and traceability systems, enhancing productive capabilities, reforming trade rules and deploying digital tools to enable transparency. Industries also need assistance to optimize supply chain management, streamline logistics, build resilience to external shocks, reduce entrepreneurial risks, and meet quality and sustainability standards. For developing countries, this is not only a matter of competitiveness—it is a pathway to industrial sovereignty, environmental stewardship and inclusive prosperity.

UNIDO will:

1. **Strengthen legal frameworks, standards and certification for sustainable value chains:** Engage actively in international standard-setting to shape legal frameworks for sustainable supply chains. Promote grievance mechanisms and third-party verification systems to ensure transparency and accountability. Build on existing sustainability certification initiatives with stronger emphasis on human rights, gender equality and environmental due diligence. Encourage local value addition and fair value retention in countries of origin. Partner with global lead firms and MSMEs to pilot and scale certification schemes. Explore launching a UNIDO Sustainability Seal in collaboration with established certification bodies to boost credibility and trust in sustainable sourcing of industrial products.

2. **Provide industry-specific analyses and business planning support:** Support industries in developing countries with value chain analysis and strategic business planning using UNIDO's proprietary tools, such as its Chain Analysis Tool (CAT) and Computer Model for Feasibility Analysis and Reporting (COMFAR). Help establish early warning systems to track market

dynamics and buyer behaviour. Organize targeted supply chain support, including capacity-building, technology transfer and compliance support, for sustainability-related market regulations.

3. **Support industrial MSMEs to upgrade, build skills and access finance:** Support industrial MSMEs to develop products, switch to cleaner technologies, create ESG-aligned investment plans and to access finance. Promote the growth of industry clusters and knowledge-sharing networks to boost innovation and enhance competitiveness. Encourage the formation of consortia to help businesses overcome market barriers and resource constraints.

4. **Support industrial value chain planning and policy:** Facilitate the establishment and efficient operation of SEZs, industrial corridors, eco-industrial parks, regional procurement hubs, and local collection, packaging, logistics and transport centres. Align these with industrial strategies to stimulate localized value addition, increase production efficiency and foster regional integration.

5. **Develop and support due diligence and certification for sustainability:** Forge alliances with both global lead firms and MSMEs in developing countries to pilot and scale sustainability certifications that uphold human rights, workers' rights, women's empowerment and environmental responsibility. Develop a UNIDO certification scheme for industrial sustainability. Ensure effective grievance mechanisms and independent verification systems (third-party audit) are put in place and prioritize local value addition to maximize local resource efficiency and economic benefits.

6. **Enhance entrepreneurial ecosystems:** Map existing support structures, identify key needs and establish sustainable partnerships between firms and business support services. Improve MSMEs' access to finance, strengthen institutional capacity and foster peer learning through regional and international networks. Support business incubators to drive innovation and inclusive growth.

7. **Promote digital adoption in MSMEs:** Encourage the adoption of e-marketing, e-commerce and digital branding as tools to raise MSMEs' visibility and achieve higher levels of producer profit. Help businesses to use digital platforms and implement digital traceability systems to strengthen brand identities and improve transparency.

8. **Build national quality compliance infrastructure:** Support the establishment of locally adapted sustainability standards and help build internationally accredited national and regional quality compliance infrastructure systems to enhance trade competitiveness, drive industrial development and spur innovation. Accompany the development or improvement of quality infrastructure systems by using UNIDO tools such as the Standards Compliance Analytics platform. Promote sustainable resource management and environmental protection by ensuring these systems are affordable and accessible, especially for MSMEs in rural areas. They should act as one-stop-shops for tenants operating in modern SEZs. Where conformity gaps are identified, support the development of tailored industrial support programmes.

9. **Support emerging and critical industries:** Support the development of value chains for critical sectors such as minerals, semiconductors, electric mobility, bioeconomy and personalized health. Promote strategies that help these industries to master critical production steps, including raw material sourcing, manufacturing, assembly, testing and packaging. Support the development of strategies that add value and encourage fair benefit sharing, resource efficiency, and the adoption of cleaner production technologies. Offer targeted capacity-building, technology transfer and strategic planning.

10. **Engage buyers and leverage public procurement:** Identify responsible international buyers and build inclusive supplier networks. Promote a move towards public procurement along with private sector initiatives that favour low-carbon, socially responsible, high-impact local vendors. To boost local supplier competitiveness, offer support through matchmaking platforms such as the Subcontracting and Partnership Exchange Programme (SPX), as well as advisory services to improve bidding quality, production expertise, ensure fair contracts and address cash flow challenges. 5.2 End hunger through innovation and local value addition.

5.2 END HUNGER THROUGH INNOVATION AND LOCAL VALUE ADDITION

Sustainable Development Goals

UNIDO's work under this priority area primarily contributes to:

Transforming food systems through innovation and value addition is essential to ending hunger and building resilient communities. Agro-industrial development plays a key role in moving toward more inclusive, efficient and sustainable food systems by increasing food availability, generating employment and stimulating inclusive economic growth in rural areas. By converting agricultural output into higher value goods, these industries not only strengthen food security but also diversify rural incomes and build communities' resilience to external shocks.

Agro-industries are uniquely positioned to support smallholder farmers and advance sustainable farming practices. With over 500 million smallholders globally, agro-industries offer a pathway for these producers to integrate into modern supply chains by purchasing their output, supporting compliance with quality and sustainability standards, and enhancing productivity. This transition fosters commercial and climate-smart agriculture, contributing directly to SDG targets, such as doubling agricultural productivity and ensuring economic empowerment through rural industrialization.

Meeting future food demand will require innovation that aligns with shifting consumer preferences and environmental sustainability. Smallholder agriculture and urban home gardens already feed 1.7 billion food-insecure people (IFPRI 2024). However, while they will remain vital, growing demand for diverse, high-quality and sustainably produced food will necessitate new investments in agro-processing and product development. Incorporating traditional ingredients with modern nutritional enhancements and circular

production methods will be critical to creating affordable, appealing food products for evolving markets.

UNIDO will:

1. **Establish integrated agro-industrial parks:** Support Member States in creating integrated agro-industrial parks. As central hubs for agro-production, processing and services, these parks bring manufacturers and smallholder farmers together into formal markets, promoting sustainable and innovative practices to drive food chain development, contributing to food security.

2. **Leverage investments in agrifood processing and distribution:** Work to promote targeted investments in agrifood processing, distribution and retail—particularly in MSMEs—to enhance local value addition, ensure compliance with sanitary, phytosanitary and ESG standards and encourage innovation using diverse raw materials, including plant-based, biotechnology and the blue economy.

3. **Improve access to finance for agro-industrial MSMEs:** Facilitate the development and implementation of tailored financial solutions, such as affordable loans, equity investments and grants, alongside blended finance and risk-sharing mechanisms, to help MSMEs to scale operations and adopt sustainable practices. Additionally, provide capacity-building programmes focused on financial management, business planning and investment readiness, enabling MSMEs to secure and manage investments effectively.

4. **Promote sustainable practices in agro-industry:** Advocate for the adoption of sustainable practices in agro-industry, including the use of clean and renewable energy and the implementation of circular economy models, enabling agro-industries to thrive while minimizing their ecological footprint.

5. **Develop global frameworks for sustainable food sourcing:** Facilitate the creation of global frameworks that promote sustainable food sourcing. By aligning agro-industries with food safety protocols and international quality standards, these frameworks will ensure responsible sourcing practices and contribute to the sustainability of food production systems.

6. **Strengthen food safety and food quality compliance:** Support Member States to build strong food quality compliance infrastructures, enhancing the sector's global competitiveness and ensuring alignment with global market requirements; and to boost the trade and safe consumption of locally produced food, strengthening food control systems and enhancing compliance along selected value chains.

7. **Reduce post-harvest losses through infrastructure development:** Support countries in developing better structures for food handling, such as improved logistics and more efficient supplier networks, as a means to cutting post-harvest losses and food waste.

5.3 RENEWABLE AND CLEAN ENERGY, SUSTAINABLE ENERGY ACCESS AND CLIMATE ACTION

Sustainable Development Goals

UNIDO's work under this priority area primarily contributes to:

In UNIDO's Vision 2050, transforming global energy systems and energy use in industry is essential to achieving climate goals while securing the foundations of economic growth. As countries pursue industrial growth, energy demand will continue to rise—especially in developing economies where access remains limited. Meeting this demand without driving further environmental harm requires a rapid and inclusive transition to clean, affordable and sustainable energy. Accelerating the shift to renewable sources—such as solar, wind, hydropower, bioenergy and low-emission hydrogen—alongside major improvements in energy efficiency, is key to decoupling industrial growth from environmental degradation. At the same time, action must be taken to strengthen the resilience of industrial sectors to climate impacts and disasters, ensuring long-term sustainability and security.

Industrial decarbonization is a critical pillar of global climate action. With industry responsible for over one-third of global final energy use and around a quarter of CO_2 emissions, the sector must lead the way in reducing its environmental footprint. This includes scaling up clean technologies such as electrification, carbon capture and storage, and green hydrogen, as well as applying circular economy principles that reduce material and energy intensity. Boosting energy efficiency can cut emissions significantly while also reducing production costs—making it a strategic lever for climate and competitiveness alike.

For developing countries, the clean energy transition is both a challenge and an opportunity. While many lack the infrastructure and financing to fully scale up clean energy, they often hold significant renewable energy potential and can avoid being locked into carbon-based energy sources. Industrial development strategies must therefore be tailored to national conditions, combining technology transfer, fuel substitution, electrification and climate-smart design. Energy security concerns—including supply diversification, critical mineral access and adaptation to climate impacts—must be addressed as part of integrated and forward-looking energy-industrial policies.

UNIDO will:

1. **Establish clean energy targets and policies:** Assist Member States in setting and aligning national, regional and global clean energy targets within frameworks such as the UN's Global Roadmap for Accelerated SDG 7 Action and incorporating them into local legislation and development programmes to ensure a stable and clean energy supply for industries.

2. **Facilitate the development of clean energy infrastructure:** Support the development of diversified infrastructure for clean energies such as low-emission hydrogen, solar, wind, biomass, geothermal and hydropower, as well as efficient power grids and energy storage solutions, helping Member States to meet the growing energy demands of industries in a sustainable way.

3. **Promote clean energy solutions for challenging sectors and local innovation:** Support efforts to develop cleaner energy solutions for industries where fossil fuels cannot easily be phased out, prioritizing the local development of energy technologies. Through technology transfer, capacity-building and fostering local R&D, assist developing countries

in establishing sustainable clean energy businesses, empowering local entrepreneurs with financing and support.

4. **Support efficiency measures in energy-intensive industries:** Aid energy-intensive sectors such as steel, cement, chemicals and fertilizers in adopting energy-saving and energy-efficient solutions. Promote renewable on-site energy production, energy-efficient machinery, smart grids and energy storage, as well as sustainable transport solutions to lower emissions and improve overall efficiency.

5. **Promote sustainable cooling solutions:** Support the adoption of energy-efficient and climate-friendly cooling technologies in residential, commercial and industrial sectors. Advance the development of national cooling action plans, strengthening local production of sustainable refrigeration and air-conditioning equipment, and integrating clean cooling into food, health and industrial systems.

6. **Support the adoption of circular economy solutions:** Assist industries—such as buildings and construction, transport, textiles and food—in adopting circular economy solutions to mitigate non-energy-related carbon emissions, while helping them to integrate these strategies into their climate policies and plans.

7. **Facilitate participation in carbon emissions trading schemes:** Help industries in developing countries to access carbon markets and obtain carbon credits, such as Certified Emission Reductions. Develop scalable carbon market projects providing technical assistance and training to enable these industries to transition to clean energy, supporting their integration into international carbon emissions markets and emissions reduction initiatives.

8. **Encourage the development of ocean energy solutions:** Support the development of ocean-based renewable energy technologies, including offshore wind, wave, tidal and ocean thermal energy conversion, as well as bioenergy from algae. Facilitate the integration of ocean energy solutions with other renewable sources, helping both traditional and emerging marine industries to expand their clean energy capabilities, contributing to a broader, more diversified energy mix.

5.4 KEY CROSS-CUTTING DEVELOPMENT ISSUES

Sustainable Development Goals

UNIDO's work under these crosscutting priority areas primarily contributes to:

UNIDO's core business is to support industries in their journey towards sustainable development. While its current focus is on the three thematic priorities outlined above, UNIDO remains committed to providing comprehensive support across a broad range of themes that drive industrial growth. These include:

a) INDUSTRIAL AND ECONOMIC POLICY ADVICE

Well-designed economic and industrial policies are key enablers of rapid growth and long-term prosperity. Yet, in many developing countries, translating strategic visions into effective action remains a challenge due to weak institutional capacity, limited analytical capabilities, insufficient stakeholder engagement and gaps in transparency and coordination. Recent global disruptions—ranging from the COVID-19 pandemic to climate and energy shocks—have underscored the need for coherent, integrated policy approaches that can build resilience while unlocking new drivers of sustainable growth.

Robust, evidence-based policy advice is essential for navigating the complexities of industrial transformation. This is particularly true for low- and lower-middle-income countries, where gaps in policymaking capacity can hinder the design and implementation of forward-looking industrial strategies. UNIDO's Vision 2050 emphasizes tailored guidance that helps governments better understand shifting global dynamics, identify priority sectors and create enabling environments for investment, innovation and competitiveness.

Strengthening national policy frameworks lies at the core of inclusive and sustainable industrial development. By enhancing institutional capacities and fostering inclusive policy dialogue, governments can craft clear, actionable roadmaps aligned with national development goals. These efforts not only accelerate industrial growth but also help ensure that it is equitable, climate-resilient and aligned with the broader 2030 sustainable development agenda.

UNIDO will:

1. **Provide economic and industrial policy advisory services:** Support strategic planning teams within policymaking bodies responsible for industrial development in analyzing policy options, designing policies and programmes for sustainable industrial development, and seeking funding for these initiatives.

2. **Undertake industry and country-specific diagnostics:** Provide industrial sector diagnostics upon request to support national policymaking, United Nations organizations and agencies, and UNIDO country programmes. Identify key challenges and opportunities for industrial development, offering guidance to policymakers on fostering sustainable industrial growth and achieving long-term development objectives.

3. **Support the formulation, implementation and evaluation of industrial policies:** Provide evidence-based analysis of global industrial trends to inform policymaking. Assist countries in crafting and implementing tailored industrial policies based on best practices and international standards. Enhance local capacities for policy analysis, formulation and execution to ensure policies are in line with specific country needs and circumstances.

4. **Collect and analyze statistical data on industrial development:** Compile and analyze data on industrial output, gender-disaggregated employment, structural changes, environmental impacts, productivity and innovation. Provide key indicators to assess progress toward SDG 9 and other relevant industrial development goals, offering actionable insights for policymakers and stakeholders.

5. **Conduct applied research on industrial development trends:** Use descriptive statistics and economic modeling to generate evidence on industrial development at global, regional, national and sectoral levels. Share findings widely with Member States and the industrial development community to inform the creation of sustainable economic and industrial policies.

b) SKILLS DEVELOPMENT

In many developing regions a severe shortage of industrial skills continues to constrain job creation, productivity and economic transformation. Three-quarters of young people aged 15–24 in LICs lack the necessary skills for employment (UNICEF 2022). The challenge is especially acute in sub-Saharan Africa but also exists in other development regions, where education systems often fall short in providing the specialized, adaptable and high-level skills needed for today's and tomorrow's industries (VoxDev 2023).

Rapid technological change presents a unique opportunity to reshape skills development systems. As industrial technologies evolve—through automation, digitalization and the green transition—the demand for new types of knowledge and capabilities is rising. This transformation calls for innovative, demand-driven approaches to vocational training that are closely aligned with industry needs. It also requires agile institutions that can continuously update training curricula, leverage digital tools, and provide lifelong learning pathways for workers across all age groups.

UNIDO's vision for 2050 emphasizes skills development as part of its focus on industrial transformation. Building strong linkages between education systems and productive sectors will be key to creating a skilled and adaptable workforce capable of driving green, digital and inclusive industrial growth.

UNIDO will:

1. **Support demand-based skills development ecosystems:** Assist Member States in designing and implementing industry-aligned skills development policies, curricula and training programmes that meet the evolving demands of key industries. Strengthen vocational education institutions to expand training initiatives and build a workforce capable of driving sustainable industrial development, with particular focus placed on ensuring equal access for women, youth and marginalized groups.

2. **Foster skills development through public-private partnerships:** Promote partnerships that enable businesses to share expertise and offer internships, apprenticeships and mentorships to allow scholars and workers to gain practical experience. Encourage private sector investment into traditionally publicly funded training centres and vocational institutions to help broaden the scope of their programmes.

3. **Facilitate skills development programmes:** Support the roll-out of targeted skills development programmes that address the specific needs of industries. This includes establishing specialized training centres, expanding decentralized learning opportunities, leveraging online platforms as well as advanced delivery tools like virtual reality to provide hands-on learning experiences. Ensure inclusive access to such programmes with a focus on women, youth and marginalized groups, including migrants, refugees, persons with disabilities and victims of abuse.

4. **Build capacity of trainers and educators:** Strengthen government programmes that provide training in business planning, financial management, regulatory compliance and leadership, alongside independent initiatives such as mentorship, digital skills training and networking opportunities, particularly in key sectors like manufacturing, agro-industry and renewable energy. Equip trainers with knowledge of new technologies and industry trends to ensure they can teach skills that are relevant to the modern industrial landscape.

c) FOSTERING DIGITALIZATION AND AI

Digitalization and AI are transforming the industrial landscape, offering vast potential to boost productivity, enhance sustainability and improve global competitiveness. Yet unlocking these opportunities—particularly for developing countries—requires targeted action to close digital connectivity gaps and build robust innovation ecosystems. For MSMEs, reliable and affordable digital infrastructure is a foundational requirement for adopting AI, advanced manufacturing and data-driven technologies that can modernize production and enable integration into global value chains.

The shift to AI-enabled and automated industry demands significant investment in digital skills and technologies. As production processes become more sophisticated, workers must be empowered with the competencies to navigate evolving industrial environments. At the same time, public and private investment is needed to deploy smart technologies that reduce emissions, minimize waste and support circular and low-carbon industrial models.

UNIDO's Vision 2050 places inclusive and responsible digital transformation at the core of sustainable industrial development. This involves strengthening local innovation systems, promoting ethical and appropriate technology adoption, and facilitating access to AI-driven tools tailored to local needs. Through technical assistance, policy advice and multi-stakeholder partnerships, UNIDO supports the transfer of knowledge and the development of institutional capacities—ensuring that digital and AI technologies contribute meaningfully to inclusive growth and resilient industrial futures.

UNIDO will:

1. **Accelerate AI-driven digital optimization of industries and supply chains:** Promote the adoption of cutting-edge AI technologies and digital tools to enhance industrial operations, with a focus on implementing smart manufacturing solutions, increasing automation and improving data analysis and logistics, leading to better real-time data management, supply chain traceability and decision-making processes, boosting efficiency, sustainability and competitiveness in industrial sectors.

2. **Support the development of policy frameworks for digital and AI technologies:** Assist Member States in creating national digital transformation roadmaps that integrate AI and frontier technologies by developing adoption strategies, fostering collaboration and supporting the establishment of smart factory labs, training centres and AI-focused business incubation platforms. Work to improve the investment climate for digital initiatives by introducing risk mitigation instruments and guarantees for investors in AI and digital technologies.

3. **Foster AI-enabled innovation ecosystems:** Help to establish and strengthen innovation ecosystems by creating AI-driven digital innovation hubs and smart manufacturing centres of excellence that facilitate the uptake of emerging technologies among local industries, driving innovation, improving competitiveness, and facilitating technological advancement.

4. **Promote supply chain transparency through AI and digital optimization:** Advocate for the development and use of AI and digital technologies such as open-source AI-driven tools, digital platforms and open data systems to boost traceability and decision-making in supply chains.

d) EMPOWERING WOMEN AND YOUTH IN INDUSTRY

20% of young people worldwide are **not in employment, education,** or **training.**

ILO 2024

Global **youth** populations projected to **peak** at nearly **1.3 BILLION** by 2050.

WEF

41% of the global **manufacturing workforce** is occupied by **women.**

ILO 2024

Women earn on average **20% less than men. Women's** average **hourly wages** are **10%** lower in developed countries and **15% lower** in **developing ones.**

UN Women 2024

12.5 BILLION hours of **unpaid** care **work** are provided daily by **women and girls,** valued at over **$10.8 TRILLION** annually—more than three times the size of the global **tech industry.**

UN Women 2025

Empowering women, youth and vulnerable groups (such as displaced people and people with disabilities) is essential for building inclusive, resilient and sustainable industrial economies. Ensuring that industrial development benefits all segments of society is not only a matter of justice—it is a strategic imperative for achieving shared prosperity and long-term industrial transformation. With global youth populations projected to peak by 2050, and persistent inequalities continuing to limit women's economic participation, unlocking the full potential of these groups is central to addressing unemployment, poverty and social instability.

Women remain underrepresented in industrial sectors due to deep-rooted structural and cultural barriers. Despite notable progress, women earn considerably less than men and are substantially underrepresented in leadership roles (WEF 2024). These disparities reflect broader gender gaps in access to education, legal protections, capital and decision-making power.

Youth face equally steep challenges in entering and thriving in industrial economies. Many lack access to quality education, market-relevant skills and entrepreneurial finance, leaving them unable to contribute to or benefit from industrial growth. This underutilization of talent represents a critical missed opportunity for innovation, productivity and inclusive economic development.

UNIDO's Vision 2050 calls for a transformative approach to inclusion, anchored in equal opportunity, fair pay and inclusive leadership. This means supporting national policies and industrial strategies that actively dismantle barriers to women's and youth participation; strengthening skills systems; and promoting access to finance, decent work and leadership pathways. Empowering these groups is not only the right thing to do—it is a powerful driver of industrial dynamism, social cohesion and global competitiveness.

UNIDO will:

1. **Support financing schemes and micro-loans for women entrepreneurs:** Develop financing mechanisms tailored to women entrepreneurs, facilitating access to capital, offering micro-loans, and creating mentorship opportunities to improve funding success.

2. **Offer digital training programmes for women:** Expand women's participation in the digital economy by providing skills training in areas like coding and e-commerce, offering job placement support and fostering networks for long-term career growth.

3. **Promote the use of technology to create job opportunities for women:** Leverage technology to increase job opportunities for women, especially in underserved areas, by focusing on remote work, digital platforms for flexible jobs and access to safe online workspaces.

4. **Expand access to skills development programmes for women:** Provide training in sectors such as renewable energy, healthcare and technology, including establishing women-only training facilities and offering internships in high-growth fields.

5. **Increase women's representation in industry and leadership roles:** Advocate for gender quotas and leadership training to increase women's representation in decision-making roles and collaborate with governments and the private sector to develop policies that promote women's leadership.

6. **Promote workplace policies advancing gender equality and diversity:** Work with industries to implement policies such as flexible work arrangements, parental leave and anti-discrimination measures, while conducting awareness campaigns to address gender biases.

7. **Enhance industry-relevant education for youth:** Partner with educational institutions to develop curricula that equip young people with the necessary skills to identify and seize industrial business opportunities. This includes training in fields such as machine operation, robotics, coding, AI and eco-friendly production.

8. **Prepare youth for critical industries:** Support national programmes that train young people in areas like manufacturing, agroindustry and energy, with a focus on innovation, sustainability and skills such as energy efficiency and eco-friendly production.

9. **Facilitate cross-sector collaboration:** Develop an interactive platform that connects academia, industry and government to co-create policies aligning education, industry needs and regulatory frameworks, ensuring a smooth transition for youth into the workforce.

10. **Support youth-led industrial enterprises:** Provide training in market analysis, business planning, investment promotion, technology application and financing to help young entrepreneurs establish and manage successful industrial businesses.

11. **Leverage UNIDO's enterprise services:** Offer young entrepreneurs access to UNIDO's tools for enterprise development, including investment promotion, technology upgrading, value chain analysis, product design and compliance with quality standards.

e) PROMOTING CLEANER PRODUCTION AND A CIRCULAR ECONOMY

The shift to cleaner production and a circular economy is essential to safeguard the environment while ensuring the long-term sustainability of industry. Yet for many sectors—especially agriculture, forestry, fishing and energy—environmental protection remains a secondary concern. Driven by short-term profit motives, these industries often overexploit dwindling natural resources. Climate change is compounding the problem, altering weather patterns, accelerating biodiversity loss and making resource access more volatile and unpredictable.

Outdated production systems continue to cause severe environmental degradation, particularly in regions with weak regulatory enforcement. Manufacturing, mining and agriculture release hazardous chemicals

into ecosystems, contributing to pollution, deforestation and long-term damage to public health. In many developing countries, lax or poorly enforced environmental rules enable harmful industrial practices to persist, undermining both sustainability and social well-being.

The lack of circular economy principles in industrial systems magnifies these risks by encouraging waste and inefficient resource use. Without major changes in how materials are used and reused, industries will remain locked into linear models that deplete natural capital and threaten their own resilience. Accelerating the adoption of green technologies, sustainable business models, and more stringent regulations will be vital to decouple economic growth from environmental harm.

UNIDO's Vision 2050 supports this transformation by advancing cleaner production practices and circular economy solutions across key sectors. Through technical assistance, capacity-building and policy support, UNIDO helps countries and firms reduce emissions, improve resource efficiency, and adopt environmentally sound technologies. Priority sectors include metals and mining, construction materials, textiles, agro-industry, and the phase-out of harmful substances such as ozone-depleting chemicals. With targeted international cooperation and bold industrial reform, cleaner, more circular economies are within reach.

UNIDO will:

1. **Establish national strategies for greening supply chains and advancing the circular economy:** Assist countries in creating strategies and policies for transitioning to sustainable, low-carbon and resource-efficient industrial practices by integrating sustainability into national plans, promoting cleaner production, encouraging circular economy principles, aligning regulations and improving ESG performance across supply chains.

2. **Accelerate circular economy transformation in industry:** Provide targeted technical assistance to optimize material flows, enhance resource efficiency, extend product lifecycles and implement waste valorization strategies across resource-intensive industrial sectors such as construction, textiles, electronics and plastics. Develop innovative financing tools tailored to circular business models, promote certification standards for circular products, and foster knowledge-sharing and the dissemination of best practices.

3. **Facilitate the development of eco-industrial parks, economic zones and resource-efficient production:** Develop eco-industrial parks and sustainable SEZs in developing countries, optimizing industrial production with minimal environmental impact. Support resource-efficient production methods through cleaner production centres, focusing on eco-design, energy and resource efficiency, and material recycling, while ensuring industries adhere to circular economy principles.

4. **Promote sustainable chemicals management and reduce hazardous substances:** Support the transition to cleaner technologies and the sustainable management of chemicals and hazardous substances, in alignment with multilateral environmental agreements such as the Montreal Protocol, the Stockholm Convention and the Rotterdam Convention. Promote cleaner production techniques, reduce reliance on hazardous chemicals and help industries to adopt green alternatives.

5. **Provide innovative climate adaptation solutions for resilient livelihoods:** Enhance private sector competitiveness by directly supporting local MSMEs in developing, piloting and deploying innovative, context-specific climate adaptation solutions and related business models, helping to improve livelihoods and income generation in vulnerable and rural communities.

6. **Mainstream climate adaptation and resilience in key decision-making processes:** Raise awareness among governments and businesses about current and future environmental and climate risks, providing tools to integrate adaptation and resilience-building measures into policies and operations. Collaborate to develop and implement localized solutions.

7. **Integrate biodiversity conservation into industrial development:** Promote biodiversity-sensitive industrial practices and specialized tools to assess the impact of industry development on biodiversity across supply chains. Develop industry-specific guidance on risk management and support the adoption of green production methods. Prioritize biodiversity hotspots impacted by industrial activity by encouraging sustainable sourcing, minimizing habitat fragmentation and advancing market mechanisms that reflect the true value of ecosystem services.

8. **Accelerate climate adaptation financing and investments:** Foster innovation markets and ecosystems for adaptation and resilience where the private sector can confidently invest. UNIDO interventions include strengthening

investment-ready adaptation and resilience in MSMEs, designing innovative financing mechanisms and facilitating technology transfer to support new business models.

9. **Support the adoption of innovative clean technology solutions for industry:** Develop and implement technical and financial instruments to de-risk the adoption of clean technologies by the private sector. Support firms in pilot-testing technologies providing concessional finance and technical assistance to high-impact projects that can be scaled up.

10. **Support the sustainable development of blue industries:** Advance integrated solutions for blue industries by combining ecosystem restoration, marine spatial planning, nature-based approaches, early warning systems, renewable energy and innovative financing. Strengthen the resilience of blue value chains, promote circular and resource-efficient practices, support quality and compliance systems for market access and facilitate investment in low-carbon infrastructure and climate adaptation.

f) LEVERAGING PRIVATE SECTOR INVESTMENT AND DEVELOPMENT FINANCE

Expanding access to tailored, inclusive and innovative financing solutions is fundamental to unlocking industrial growth in developing countries. Firms—particularly MSMEs, which form the backbone of many developing economies—frequently face financing constraints due to weak credit profiles, informal operations and poorly structured business plans. Without suitable financial instruments, these enterprises struggle to invest in modernization, scale production, or integrate into competitive value chains.

Creating a conducive investment climate is essential to attract long-term capital for sustainable industrialization. This includes establishing investment-friendly legal and regulatory frameworks that mitigate risks, strengthen investor confidence, and support the development of industrial infrastructure and business support services. Industrial parks, SEZs and industrial corridors play a vital role in anchoring investment and accelerating industrial development.

Designing appropriate financial instruments and building institutional capacity are key to transforming promising projects into bankable investments. This requires strengthening the financial and economic analysis capabilities of

commercial banks, development finance institutions and impact fund managers. Innovative approaches such as blended finance, concessional capital and gender-responsive investment strategies must be scaled to channel funding toward high-impact opportunities and inclusive industrial growth.

In its Vision 2050, UNIDO prioritizes strategic partnerships that mobilize capital flows and business success in industry. Through fostering meaningful partnerships that mobilize capital, facilitate technology transfer and provide business support, particularly via the Investment and Technology Promotion Offices (ITPOs) network and collaboration with public and private stakeholders, UNIDO plays a catalytic role in driving investment to advance industrial development.

UNIDO will:

1. **Strengthen policy frameworks for financial ecosystems:** Provide advisory services to governments to design and implement policies that cultivate a financial ecosystem supportive of industrial transformation.

2. **Support MSME's in project preparation:** Provide support for the preparation of investment projects using instruments such as COMFAR and the Private Financing Advisory Network (PFAN), along with investment promotion and facilitation services to help MSMEs to design, develop and scale successful projects, thereby attracting local and international investments for high-impact industrialization.

3. **Co-design blended finance mechanisms:** Work with industry and finance partners to design and deploy investment funds, grants and loan facilities that de-risk investments and generate multiplier effects, while providing technical assistance to enterprises.

4. **Build financial partnerships and frameworks:** Establish collaborative alliances with international financial institutions, sustainable industry leaders and philanthropic organizations willing to invest in developing countries through blended finance mechanisms. Align these partnerships with financial institution mandates to expand guarantees, funding structures and financial inclusion.

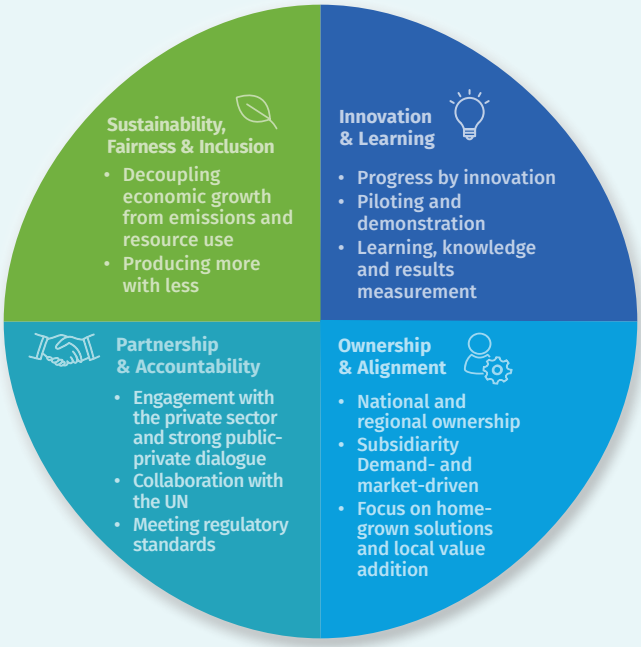
6 UNIDO's principles, functions and regional focus

Faced with the challenges and opportunities arising from global crises and industrial megatrends, UNIDO aims to sharpen both the efficiency and the impact of its services, tailoring its support more precisely to the priorities of Member States. The focus will be on strengthening its capacity to deliver targeted, high-impact technical assistance that is closely aligned with the unique needs of each country.

Stronger collaboration will be key to success. UNIDO must deepen its partnerships with other United Nations entities, development partners, industry leaders and Member States, working within existing cooperation networks. These efforts echo the UN Secretary-General's Global Call for a Decade of Action and the associated Pact for the Future, which stress the importance of collective action in achieving sustainable industrial development and the broader goals of the 2030 Agenda.

6.1 GUIDING PRINCIPLES OF UNIDO ENGAGEMENT

Overall, the UN Charter and the wider UN agenda provide the guiding documents for UNIDO's work. In addition, it is important to highlight the principles that guide UNIDO's engagement in industrial development:



SUSTAINABILITY, FAIRNESS AND INCLUSION

- Sustainability means fostering industrial development that balances economic growth with social equity and environmental responsibility, ensuring inclusivity and protection of resources for future generations.

- Decoupling growth from emissions and resource use means achieving prosperity without increasing environmental harm. It breaks the link between economic expansion and ecological degradation, showing that progress need not cost the earth. Industries can thrive by adopting efficient, clean technologies and circular systems centred on reuse, recycling and regeneration. Key strategies include innovating technology, shifting to renewables, improving resource efficiency, and redesigning industrial processes to minimize waste and pollution.

- Producing more with less means applying appropriate technologies to enhance resource efficiency and industrial productivity. This principle supports profitability, energy efficiency, circular production and consumption and environmental sustainability.

- Fairness means ensuring that the benefits of industrialization are shared equitably, with inclusive access to resources, markets and technologies for all, especially developing countries, small businesses and marginalized communities. It promotes decent work, ethical practices and social justice.

- Actively addressing gender and age-related inequalities means empowering women and youth as leaders and agents of economic change to build a more inclusive and equitable environment for sustainable development. UNIDO applies a gender and diversity focused approach to all its programmes and projects, challenging discrimination against women and girls in all their diversity, and working to transform entrenched social norms and power dynamics.

INNOVATION AND LEARNING

- Progress by innovation means harnessing new ideas and technologies to improve industrial processes and products. It encourages moving beyond traditional solutions and regulatory approaches, fostering a culture of continuous innovation to address emerging challenges and seize new opportunities.

- Piloting and demonstration means testing new solutions through targeted projects that serve as models for broader adoption. UNIDO promotes the scaling and replication of proven practices through local partners, while ensuring pilots are well-funded, evaluated and carefully documented.

- Learning, knowledge and results measurement means that UNIDO projects are not only delivered effectively but also that learning and best practices are documented and shared for broader public use, with results measured and evaluated against tangible results indicators.

OWNERSHIP AND ALIGNMENT

- National and regional ownership means empowering national stakeholders to lead industrial development in alignment with local priorities, as well as helping to build institutional capacities needed to promote long-term self-reliance in industrial transformation.

- Subsidiarity means aligning UNIDO's projects with the development priorities, policies and programmes of its Member States. It ensures ownership and relevance at every level by tailoring support to national, regional and sectoral needs.

- Demand- and market-driven means aligning industrial development with real economic needs and market dynamics. This includes designing interventions based on actual demand, strengthening local value chains, and ensuring the relevance and sustainability of UNIDO's support in diverse national contexts.

- Focus on home-grown solutions and local value addition means leveraging local strengths and resources to support local innovation, entrepreneurship, and value chain development as a means to long-term sustainable growth, job creation and economic resilience.

PARTNERSHIP AND ACCOUNTABILITY

- Engagement with the private sector and strong public-private dialogue means collaborating with business to facilitate strong public-private partnerships that can mobilize investment and drive innovation, scaling industrial impact through collaboration.
- Collaboration with the UN means working closely with the UN system and other UN agencies at the global, regional and country levels wherever possible, ensuring that mandates align and that efforts are synergized.
- Meeting regulatory standards means that UNIDO's operations are conducted in strict compliance with all internal and international standards and frameworks to ensure effective functioning, accountability, and the delivery of high-quality services.

6.2 UNIDO's FUNCTIONS

UNIDO provides industrial development assistance to its Member States through five modes of service delivery, each representing distinct functions:

a) RESEARCH AND POLICY ADVISORY SERVICES

UNIDO provides cutting-edge research and analysis to guide evidence-based industrial policy in Member States. Through in-depth studies on global and local economic growth, trade and industrial trends, the Organization delivers critical insights via technical reports and flagship publications like the Industrial Development Report, empowering governments to make informed decisions on advancing sustainable industrial development.

We deliver tailored policy advice, meticulously customized to each country's unique context and specific development challenges. Through detailed national assessments and active stakeholder engagement—including training and collaborative analysis—UNIDO provides bespoke policy measures. These measures help governments shape effective industrial strategies and, crucially, build the sustainable local capacity for analytical and research needed for long-term, self-reliant policymaking.

As a core global authority, UNIDO is the custodian of vital industrial data for the SDGs. Serving as custodian for six SDG 9 indicators, we collect, harmonize, analyze and publish essential global industrial statistics, providing open access to reliable, up-to-date data that ensures industrial strategies are grounded in solid evidence.

b) TECHNICAL COOPERATION

UNIDO's core mission is to help countries build industrial capacity across all sectors, providing inclusive support to industries, MSMEs and the informal sector. Our assistance ranges from introducing innovative technologies and improving supply management and product design to enhancing marketing and organizational efficiency. We are committed to raising productivity and accelerating industrial transformation by fostering innovation and applying global best practices.

UNIDO promotes efficiency and competitiveness by developing industrial zones and key business enablers. Through support for eco-industrial parks, SEZs, clusters and incubators, we help cultivate efficient and competitive businesses. A critical part of this effort is facilitating their access to financing, enabling them to modernize, grow sustainably and develop into bankable industrial enterprises.

Many of our initiatives begin as carefully analyzed pilot projects, tailored to the specific needs of industrial sectors in developing countries. We test industrial solutions in partnership with national and regional institutions, ensuring that successful models can be scaled up and replicated across industries and broader regions by local actors. This strategy provides more Member States with access to effective, evidence-based industrial development options.

UNIDO shares the results and lessons from these initiatives through guidelines, best practices, manuals and capacity-building courses. This dissemination of knowledge is vital for helping countries take ownership of their industrial development, ultimately strengthening national capacity and empowering local enterprises for long-term success.

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c) NORMATIVE FUNCTION AND STANDARDS-RELATED ACTIVITIES

UNIDO assists governments in institutionalizing sustainability by integrating global standards into national policy and legislation. We support Member States in developing, implementing and monitoring industry practices that promote balanced and sustainable industrial development. This includes providing access to international best practices, guiding the creation of policies and norms aligned with global benchmarks, and fostering dialogue to embed these principles into national programmes.

The Organization is a pivotal actor in shaping the international standards that define modern industrial practice. Our work is central to the formulation, dissemination and implementation of international standards and recommendations, particularly for industrial statistics, definitions and methodologies. UNIDO plays a key role in developing norms and technical regulations across critical sectors—from industrial production and quality control to energy systems—and has been instrumental in the creation of ISO standards for energy management, innovation management, hydrogen, laboratory design and the circular economy.

UNIDO translates global standards into practical compliance for industries, with a dedicated focus on empowering MSMEs. We help enterprises, especially MSMEs, adopt these standards to enhance their access to sustainable supply chains. This involves direct support for complying with quality and regulatory

requirements, building necessary skills and developing the national quality infrastructure—including testing, inspection, metrology and accreditation services—that builds market confidence in local industries.

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d) CONVENING FUNCTION

UNIDO drives the global conversation on sustainable industry by actively convening and participating in major events, conferences and forums. These platforms are essential for promoting multilateral dialogue, sharing cutting-edge knowledge and exchanging best practices among a diverse range of global stakeholders in industrial development.

Through targeted events like workshops, exhibitions and seminars, we raise awareness and catalyze concrete partnerships. UNIDO organizes and participates in these gatherings to highlight critical industrial development issues and directly foster new business relationships, investment opportunities and technology transfers between key actors.

Our conferences provide a critical space for in-depth expert discussion on the most pressing industrial topics. These meetings facilitate a vital exchange of information and ideas by providing stakeholders with a platform for substantive dialogue on a range of foundational issues, from designing effective industrial policies and managing the energy transition to advancing climate adaptation strategies.

At the highest level, UNIDO shapes global policy by engaging leaders at major forums to address systemic challenges. In these settings, we engage with high-level representatives from governments, international bodies and the private sector to confront overarching industrial development challenges and help steer the global discourse on transformative issues like digitalization and the future of work.

Flagship forums under the UNIDO banner have a proven track record of influencing national industrial strategies. Major initiatives like our Multilateral Industrial Policy Forum (MIPF), the Vienna Energy Forum, the World Circular Economy Forum (WCEF), and the World Without Hunger Conference have directly shaped the formulation and implementation of industrial policy in numerous countries around the world.

e) PARTNERSHIP DEVELOPMENT

UNIDO champions SDG 17 "Partnerships for the Goals" by placing multi-stakeholder partnerships at the core of its strategy for achieving the 2030 Agenda. We recognize that international cooperation is vital to securing the SDGs, requiring a transformative approach that integrates economic, social and environmental goals through collaboration across governments, the private sector, academia and civil society.

To deliver systemic solutions, we forge strategic alliances that mobilize innovation, expertise and resources in line with and beyond ODA. Recognizing that traditional aid is insufficient, UNIDO proactively builds partnerships with a diverse range of actors, including development agencies, the public and private sectors, financial institutions, academia and research entities, to support sustainable industrial development in developing countries.

Our "Progress through Innovative Partnerships" framework is designed to maximize impact, scale collaboration and uphold the highest standards of integrity. This strategic framework guides us to strengthen institutional capacity, scale up collaborative efforts and safeguard the Organization's reputation, ensuring every partnership is effective and accountable.

We leverage cutting-edge tools to ensure our partnerships are efficient, transparent and driven by results. By incorporating new technologies, data-driven approaches and innovative financing models, we enhance the efficiency of our partnerships, enable real-time monitoring and create continuous opportunities for learning and adaptation.

UNIDO's partnerships include:

- **Country partnerships:** UNIDO anchors its support at the national level through the Programme for Country Partnership (PCP), which is aligned with the UN Sustainable Development Cooperation Framework (UNSDCF). This model provides the foundation for our country-level programming, enabling us to strengthen alliances, coalesce projects into a unified national strategy, and ensure all efforts directly reflect national priorities. By expanding our local presence, decentralizing technical cooperation, and empowering our field network, we deliver demand-driven services that achieve greater, more sustainable impact.

- **North-South and South-South partnerships:** We facilitate vital economic and knowledge bridges between industries in the Global North and Global South to enable mutual development. UNIDO brokers the transfer of critical knowledge, technology, equipment, finance and investment between countries. We provide technical cooperation services and leverage our extensive global network—including field offices, country programmes and ITPOs—to effectively broker these exchanges and foster international industrial cooperation.

- **UN partnerships:** UNIDO strengthens the UN system by collaborating closely with sister agencies to deliver coherent and integrated support to Member States. Our collaboration operates at all levels: we work within UN Country Teams under the leadership of the Resident Coordinator and align with the UNSDCF on the ground, while also engaging in strategic-level coordination through the Chief Executive Board (CEB). Through joint programming and implementation, such as via the UN Multi-Partner Trust Fund, we ensure industrial development is a central pillar of collective UN efforts for sustainable development.

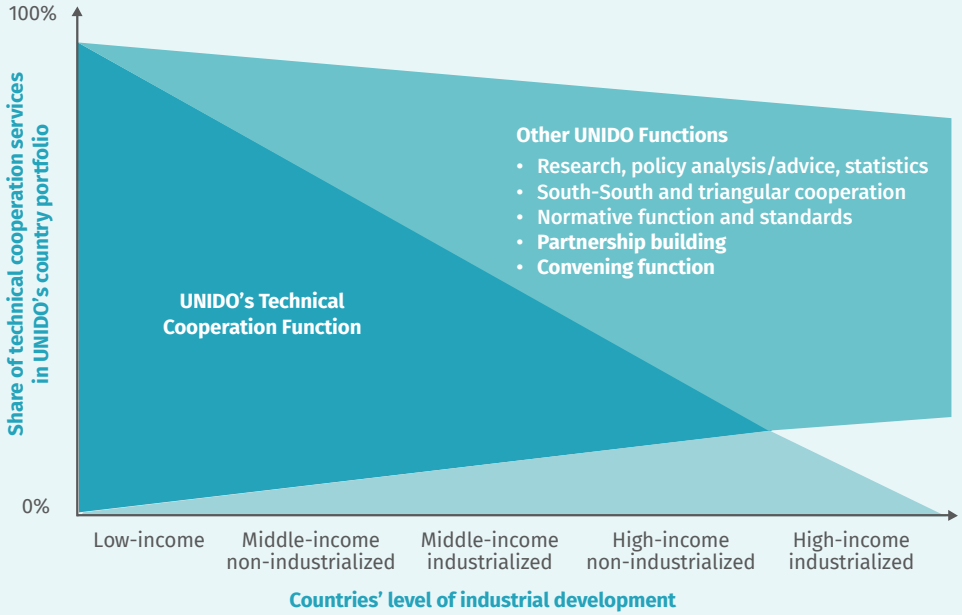
- **Business partnerships:** We harness the private sector's resources, expertise and innovation to address complex industrial development challenges. Acting as an impartial convener, UNIDO fosters productive collaboration between public and private actors. Through multi-stakeholder platforms and PPPs, we combine strengths and resources to advance sustainable industrial development and engage Member States and their industries in the pursuit of shared goals.

- **Finance partnerships:** UNIDO acts as an essential bridge between industrial projects and the capital required to scale them, de-risking investments and unlocking funding. We collaborate with International Financial Institutions (IFIs), impact investors and other key financial organizations to expand funding for technical cooperation in emerging markets. Our role involves identifying high-potential investments, channelling funds toward critical industries, and using technical assistance to de-risk projects, thereby improving private sector access to finance. We leverage our mandate and expertise to serve as a strategic technical partner to development banks, sovereign wealth funds, pension funds and insurers.

- **Social Investment partnerships:** We complement industrial growth with targeted social development by partnering with philanthropic organizations and social venture funds. These strategic collaborations direct patient capital and grants to industrial actors and communities most in need of support. Crucially, this financial support is accompanied by UNIDO's essential technical assistance, ensuring that investments not only provide capital but also promote inclusive and sustainable growth.

TAILORED SERVICE PORTFOLIO FOR MEMBER STATES

UNIDO's service portfolio is strategically tailored to address the unique needs and priorities of each Member State. We customize our support based on critical factors such as a country's level of industrial development, the scale of its beneficiary population, and its priority industrial sectors. This differentiated approach ensures the precise and appropriate allocation of our resources and expertise. Technical cooperation is intentionally concentrated in less industrially developed countries, ensuring that nations with the greatest need receive intensified, hands-on support. While UNIDO offers a broad spectrum of services available to all Member States, we maintain a clear and strategic emphasis on LDCs. Our focus is sharpest where the potential for transformative industrial impact is greatest. This targeted, context-driven strategy ensures we maximize the effectiveness and sustainable impact of our efforts across the diverse global landscape.



6.3 UNIDO's REGIONAL FOCUS

Beyond its thematic and cross-cutting priorities, UNIDO employs specific regional strategies tailored to the diverse economic, social and environmental contexts of each area. These strategies address the diverse needs of different country groups, including LDCs, LICs, MICs and SIDS.

a) AFRICA: ADVANCING RESOURCE-BASED INDUSTRIALIZATION, JOB CREATION AND REGIONAL INTEGRATION

Africa holds vast natural resources and a young, growing population, yet it remains one of the least industrialized regions globally. Manufacturing accounts for less than 12 per cent of GDP, and reliance on raw commodity exports continues to limit job creation and economic diversification. But progress is emerging in resource-based and labour-intensive sectors such as textiles, automotive, agro-processing and electronics. The continent's abundant natural and renewable energy resources, including minerals, oil and agricultural products, offer significant opportunities to accelerate industrialization, promote value addition, diversify exports and create jobs.

UNIDO's strategy for Africa aims to build capacity, promote prosperity, foster collaboration and drive sustainable industrial development in line with the African Union's Agenda 2063 and the 2030 Agenda.

Key actions in this region will include:

- **Investing in people:** Develop skills to meet evolving industry demands, focusing on human security, gender equality and rural-urban linkages.
- **Enhancing productivity:** Diversify into high-value industries like agro-processing, digital economies and pharmaceuticals, while supporting the development of industrial parks and clusters and facilitating access to innovative financing and investments.
- **AfCFTA implementation:** Streamline policies and trade standards and enhance regional integration to target larger markets and attract more investment.
- **Clean energy and just transition:** Promote renewable energy and energy efficiency to drive industrialization.
- **Climate action:** Implement circular economy practices and climate adaptation solutions.

b) ASIA AND THE PACIFIC: DRIVING HIGHER-VALUE INDUSTRIES AND DIGITAL TRANSFORMATION

Asia and the Pacific, the world's largest and most populous region, is made up of economies at widely different stages of industrialization. Some are technologically advanced while others contend with entrenched problems such as environmental degradation and growing inequality. UNIDO aims to address these divisions by promoting innovation, supporting digital transformation and fostering climate-neutral industries as engines of growth.

Key actions in this region will include:

- **Innovation and digitalization:** Support AI integration and automation for enhanced productivity.
- **Climate-neutral industries:** Promote renewable energy and circular economy practices.
- **Inclusive growth:** Foster equitable opportunities, focusing on marginalized groups.
- **Regional partnerships:** Collaborate with regional bodies and relevant mechanisms to enhance regional integration, such as the Association of Southeast Asian nations (ASEAN).

c) ARAB REGION: BUILDING RESILIENCE THROUGH TECHNOLOGY TRANSFER AND SUSTAINABILITY

The diverse and growing Arab region faces a broad range of economic and environmental challenges, including overreliance on fossil fuels, high youth unemployment, growing debt levels, rising water scarcity and desertification. UNIDO provides support for countries to tackle these issues through capacity-building and technical assistance programmes that foster inclusive industrial development and economic diversification.

Key actions in this region will include:

- **Industrial diversification:** Develop competitive, sustainable industries to reduce dependence on limited sectors.
- **Energy transition:** Promote renewable energy technologies and clean energy systems.
- **Food security:** Strengthen local agricultural production and reduce post-harvest losses.
- **Support for vulnerable groups:** Enhance employment and skills development for youth and women.

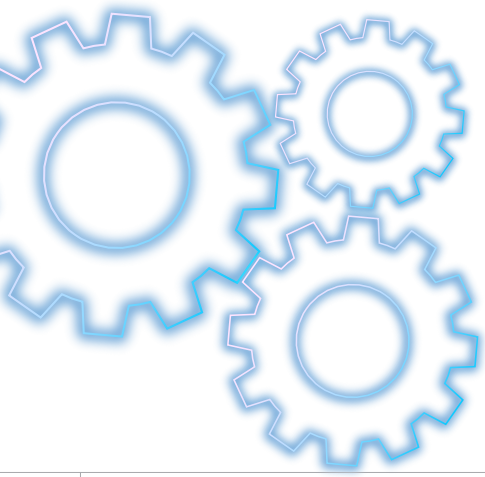
d) EUROPE AND CENTRAL ASIA: MODERNIZATION, CLEAN INDUSTRIES AND ECONOMIC RESILIENCE

This region boasts a skilled workforce and industrial potential but faces challenges such as reliance on resource extraction and growing environmental risks. UNIDO's strategy for Europe and Central Asia focuses on fostering human-centred, green growth and sustainable industrialization.

Key actions in this region will include:

- **Job creation:** Enable high-value industries to generate quality employment.
- **Sustainability:** Promote circular economy, renewable energy and resource-efficient practices.
- **Support for MSMEs:** Enhance competitiveness, export capacities and supply chain linkages.
- **Innovation ecosystems:** Build green and digital economies through targeted support.

By implementing these tailored strategies, UNIDO ensures its global priorities are translated into impactful regional actions, fostering sustainable industrial development worldwide.



e) LATIN AMERICA AND THE CARIBBEAN: ADVANCING INDUSTRIAL COMPETITIVENESS, THE CIRCULAR ECONOMY AND RENEWABLE ENERGY

Latin America and the Caribbean (LAC) is one of the most biodiverse regions in the world and holds immense renewable energy potential. Yet due to slow economic growth, inequality, widespread informal employment and growing impacts from climate-induced extreme weather events, it faces significant challenges in harnessing these resources.

UNIDO's regional programme seeks to advance sustainable industrial development while promoting inclusivity, strengthening economic resilience and protecting the environment. To achieve these aims, the Organization will deepen its collaboration with LAC countries through stronger partnerships with governments, the private sector and international organizations; the application of innovative business models and funding mechanisms tailored to middle- and high-income countries; better developed communication, policy advisory and knowledge-sharing platforms; and rigorous monitoring and evaluation to ensure alignment with national and regional goals.

Key actions in this region will include:

- **Industrial policy:** Support gender-sensitive, data-driven policies to foster sustainable industrial development.
- **Decarbonization and resilience:** Promote low-carbon industries through eco-industrial parks and green hydrogen technologies.
- **Digitalization and AI:** Facilitate digital infrastructure upgrades and technical training.
- **Circular economy:** Provide technical support to integrate sustainable production and consumption patterns.
- **MSMEs and employment:** Strengthen value chains and promote training for emerging sectors with special emphasis on empowering young entrepreneurs and start-ups.
- **Renewable energy:** Facilitate renewable energy adoption and financing solutions.

f) LEAST DEVELOPED COUNTRIES (LDCS): STRENGTHENING RESILIENCE AND INCLUSIVE GROWTH

LDCs face persistent structural challenges including limited productive capacities, weak infrastructure, vulnerability to external shocks, and high exposure to climate change. Despite these constraints, they hold significant opportunities for industrial upgrading, regional trade, and innovation-driven development.

UNIDO's Operational Strategy for LDCs 2022–2031, aligned with the Doha Programme of Action, provides a framework to invest in people, strengthen institutions, and build resilience. The upcoming implementation plan, presented at the Eleventh LDC Ministerial Conference in 2025, will further guide concrete actions.

Key actions in this group will include:

- **Human capital development:** Promote skills training and entrepreneurship with attention to women and youth.
- **Science, technology and innovation:** Facilitate technology transfer and innovation ecosystems.
- **Structural transformation:** Support value addition in agriculture and resource-based sectors.
- **Trade and integration:** Enhance LDC participation in regional and global value chains.
- **Climate resilience:** Strengthen circular economy practices, renewable energy and climate adaptation.
- **Global partnerships:** Mobilize solidarity and innovative financing instruments.

g) LANDLOCKED DEVELOPING COUNTRIES (LLDCS): PROMOTING CONNECTIVITY AND VALUE CHAIN INTEGRATION

LLDCs struggle with geographical isolation, high trade costs, and limited access to global markets, which hinder industrial growth. Their vulnerability is further aggravated by infrastructure gaps and climate risks.

In line with the Awaza Programme of Action for LLDCs 2024–2034, UNIDO is preparing a dedicated operational strategy to foster industrial connectivity and competitiveness. By reducing transit costs, strengthening agribusiness, and bridging digital divides, LLDCs can better integrate into global value chains.

Key actions in this group will include:

- **Trade facilitation:** Support transit agreements, trade corridors, and logistics upgrades.
- **Digital inclusion:** Expand digital infrastructure and innovation hubs.
- **Agribusiness and SMEs:** Strengthen processing industries and empower small firms.
- **Climate-resilient industries:** Promote low-carbon technologies and climate adaptation.
- **Human capital:** Build technical and vocational skills for industrial upgrading.
- **Partnerships:** Convene governments, regional bodies, and the private sector to mobilize finance.

h) MIDDLE-INCOME COUNTRIES (MICS): LEVERAGING INDUSTRIALIZATION FOR SUSTAINABLE GROWTH

MICs account for 75 percent of the world population and 62 percent of the world's poor, with one third of global GDP. MICs are major engines of growth but face diverse challenges such as income inequality, uneven industrial development, and vulnerability to climate change. They are both providers and recipients of development cooperation, making them critical actors in global industrial transformation.

UNIDO's Strategic Framework for Partnering with MICs, adopted by the 18th General Conference, supports sustainable industrialization as a driver of growth, jobs, and innovation. Tailored interventions help MICs transition to higher-value industries while aligning with SDGs 8 and 9.

Key actions in this group will include:

- **Industrial upgrading:** Support technology adoption and digital transformation.
- **Green growth:** Facilitate renewable energy, circular economy and low-carbon industries.
- **Policy innovation:** Provide policy advice and strengthen institutional frameworks.
- **Partnerships:** Mobilize South–South and triangular cooperation.
- **Social inclusion:** Address inequality and promote decent work, especially for youth and women.
- **Impact measurement:** Monitor progress through evidence-based tools and evaluations.

i) SMALL ISLAND DEVELOPING STATES (SIDS): ENHANCING RESILIENCE THROUGH SUSTAINABLE INDUSTRIES

SIDS face unique challenges including geographic isolation, small domestic markets, reliance on imports, and high vulnerability to climate change and natural disasters. Despite these constraints, they hold potential in sectors such as blue economy, tourism, renewable energy, and niche manufacturing.

UNIDO's revised SIDS Strategy 2026–2034, aligned with the Antigua and Barbuda Agenda for SIDS, sets the course for resilient and sustainable industrial development in these economies. UNIDO works with SIDS to strengthen institutions, diversify economies, and enhance resilience to external shocks.

Key actions in this group will include:

- **Climate resilience:** Promote adaptation strategies and renewable energy solutions.
- **Food security:** Support agribusiness, food processing, and nutrition-sensitive value chains.
- **Blue economy:** Develop ocean-based industries and sustainable fisheries.
- **Trade and investment:** Enhance access to international markets and attract green finance.
- **Knowledge and institutions:** Build technical capacity and strengthen governance.
- **Inclusive development:** Foster employment and entrepreneurship, with a focus on women and youth.

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Progress by innovation

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