Climate & Digitization –The Path to successful Twin Transition

A global initiative for a climate-friendly digital transformation.

BACKGROUND

With the Paris Climate Agreement of 2015, the international community committed to limit global warming to well below two degrees and strengthen the capacity to adapt to climate change. Yet climate change is already hitting people in the poorest countries particularly hard, even though they have contributed the least. German development cooperation (DC) therefore wants to contribute to a **sustainable, climate-compatible socio-ecological transformation of society and the economy**.

Digitization can provide support here: Innovative technologies have the potential to drive climate protection and adaptation. However, 1.8 to 3.2% of global greenhouse gas (GHG) emissions in 2020 are attributable to information and communication technologies (ICT).

Political design therefore determines whether the digital transformation becomes an accelerant of ecological and social crises or a **tool for a sustainable future. If the potential of digitization for sustainable development** is exploited, global GHG emissions could decrease by up to 20%. For DC, this means promoting appropriate innovative solutions and implementing them in cooperation with European and international partners, civil society and the private sector to ensure **sustainable development and better adaptation to change** in our partner countries. We understand the green and digital transformation ("Twin Transition") as a change towards a socially and environmentally

sustainable future promoted by **climate-friendly, digital innovation.**

FIELDS OF ACTION

(1) **Shape digital transformation in a climate-friendly way**

To make the digital transformation climate-friendly, its **direct effects** must be reduced. This includes energy demand and GHG emissions from the production and use of digital devices and infrastructures. These must be powered by renewable energy, their useful life extended, and emissions in manufacturing reduced. In the partner countries, the development of sustainable infrastructure for information and communication technologies is central: On the one hand, many regions have good conditions for wind and solar energy. On the other hand, the demand for and supply of data centers is increasing there.

(2) **Exploit the potential of digital technologies to achieve climate targets**

Indirect effects of the digital transformation can contribute to achieving the climate targets if incentives and decision-making bases are created for this. They arise from changes in production and consumption patterns and can have either a positive or negative impact on the climate. Data play a central role in harnessing these effects for climate goals. They form the **basis for sustainable, evidence-based management of processes**. Data-driven solutions can contribute to **climate change**

adaptation by, for example, improving natural resource management and supporting agriculture. For example, algorithms can analyze satellite images of fields, make crop forecasts, and calculate specific fertilizer inputs so that nutrients reach the crop rather than groundwater. This improves crop yields and protects the environment.

For both fields of action, the following applies: a successful Twin Transition can only be implemented if policymakers work together with digital ecosystem[1] actors to put a **people-centric digital transformation at the service of sustainable development**.

GOALS AND IMPACTS

BMZ's Climate & Digital Initiative is actively shaping how digital solutions can support people in partner countries - with local innovations, digital infrastructures, economic incentives, standards development, and data-driven solutions.

→ **Reducing GHG emissions:** Green technologies can reduce GHG emissions. For example, data centers can be powered by renewable energy, becoming green data centers that are energy efficient and thus more climate friendly. Such green data centers can be a response to the increasing need for digital infrastructure in partner countries

→ **Integer and transparent digital infrastructures:** digital technologies such as blockchain offer the possibility, for example, to establish national greenhouse gas registers and information systems in a secure and transparent

manner. Or thanks to digital administrative services, citizens can save themselves travel and paper bureaucracy.

→ **Economic incentives and business models:** Embedded climate data and climate targets in platforms, applications and algorithms can support sustainable business models and incentives, which in turn form the basis for a sustainable circular economy. At the same time, strategic partnerships and investments help drive and scale local innovation.

→ **Real-time data and predictive analytics to make evidence-based decisions:** When data is seamlessly available, real-time information and ana-lyses can form the basis for better decision-making and prioritization. At the same time, this allows conclusions to be drawn about the effectiveness of measures. Earth observation data and satellite images in particular can support better adaptation to climate change.

→ **Collective action and participation:** Digital applications enable partner countries to quickly reach actors in the local digital ecosystem, build networks and implement measures for more climate protection together with these networks. At the same time, these networks can jointly find digital solutions in the fight against climate change. Politics, business and society must pull together for this to happen. Our initiative can provide support here: Promote innovation and the exchange of technical knowledge, and support the corresponding research and entrepreneurial spirit.

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[1] Digital ecosystem: informal, dynamic networks in which individuals, organizations, and institutions interact with each other to shape individual digital systems or the digital transformation as a whole.