



2022  
Version 1.0

# DIGITAL TRANSFORMATION

BECOMING AN INNOVATIVE, AGILE AND COLLABORATIVE ORGANIZATION,  
FIT FOR PURPOSE IN THE DIGITAL AGE

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# Introduction

This document sets out the vision for the Digital Transformation of the organization over the next four years, responding to a changing digital development landscape and the evolving needs of our partners, including government, businesses, finance, and civil society.

Within UNEP's newly approved Medium-Term Strategy covering 2022-2025, UNEP will continually seek out and embrace existing and emerging digital technology in all aspects of its work to better serve its partners in their efforts to tackle the triple planetary crises of climate change, nature loss and pollution.

Through a process of scanning, testing and scaling relevant digital technologies, UNEP aims to become an increasingly data-driven, agile, transparent and effective partner.

UNEP's approach to Digital Transformation is not only about digitalizing our products and services, but also using them to drive transformation changes in five areas: environmental decision-making, economic incentives and business models, human behaviors, and environmental governance.



*Image credit: Getty Images Signature/Selman Keles*

# Digital Transformation Pathways

The approach outlined in this document is meant to be iterative and agile. As such, it will continue to evolve over the coming years as UNEP draws lessons through the implementation of the following two pathways:

## **Pathway 1: Digital Transformations Subprogramme: Accelerating and scaling environmental sustainability through digital transformation.**

This subprogramme looks outward at how UNEP divisions and regional offices can use digital technologies to improve the way they deliver products and services to member states and other stakeholders. The goal is to accelerate and scale action towards climate stability, living in harmony with nature and a pollution free planet.

The subprogramme will harness digital technologies to influence environmental decision-making, economic incentives and business models, as well as human behaviors, agency and environmental governance.

Working through strategic partnerships and by facilitating policy dialogue, this subprogramme will enhance environmental digital literacy and e-governance capacities of diverse stakeholders using an inclusive, gender-responsive and human-rights-based approach, with an emphasis on the global South. This subprogramme also considers how we can help assess and mitigate the impacts of digital technologies in terms of energy demand, e-waste, material supply chains and increased consumption.

A Digital Transformations Subprogramme Coordinator (DT-SPC) reporting to the Director of Policy and Programme Division is responsible for coordinating this pathway with substantive delivery by the divisions and regions. The Chief Digital Officer will provide strategic guidance to the implementation of this pathway.



## **Pathway 2: A Digitally Enabled UNEP: Digital transformation of UNEP's business processes and culture.**

This pathway will be directly implemented by the Chief Digital Officer (CDO) reporting to the Executive Director. Internally, the CDO focuses on both leading and catalyzing the change management process needed to digitally transform UNEP's business processes, policies, entrepreneurial culture, skills and projects, including digital integration in corporate policies and strategies.

This pathway aims to improve the quality, efficiency, delivery, and impact of UNEP's work through better data-driven decision making, project design, knowledge sharing, and digital literacy training.

The CDO will lead a Digital Accelerator Lab anchored in Nairobi that provides thought leadership, strategic direction, operational support and advisory services to UNEP project teams that are delivering outcomes using digital technologies in Pathway 1.

The CDO will also lead the Digital Accelerator Network consisting of staff from the regional offices and divisions. This internal pathway will be implemented in close cooperation and coordination with Enterprise Solutions reporting to the Director of Corporate Services division and the Digital Transformation Subprogramme Coordinator. The CDO will have a representational and advocacy role as well as to help mobilize funds and provide programme visibility.



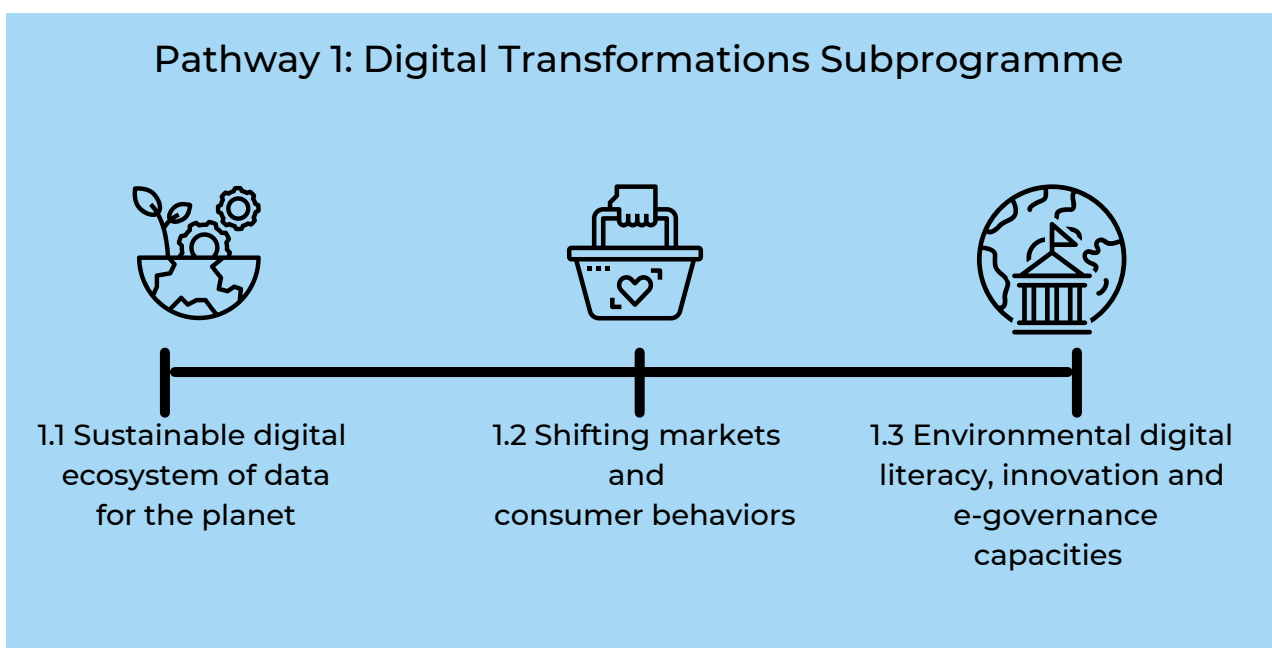
*Image credit: Getty Images Pro/ Everythingpossible*

# 1.0 Pathway 1: Digital Transformations Subprogramme

## Strategic Actions

The Digital Transformations subprogramme, as designed in the Medium-Term Strategy for 2022-2025, focuses on accelerating and scaling environmental sustainability by applying data, digital technologies and solutions in UNEP's key activities, products and services.

It is driven by the direct outcomes and indicators to deliver the climate, nature and pollution pillars adopted in UNEP's Programme of Work (POW) for 2022-2023. UNEP aims for innovation and collaboration with partners in building a digital ecosystem for the planet, shifting market incentives and consumer behaviors through digital channels, and enhancing e-governance including through inclusive policy development, digital literacy and stakeholder engagement. This subprogramme will be coordinated by a Digital Transformations Subprogramme Coordinator within the Division of Policy and Programme and consists of three main strategic actions:



## 1.1 Sustainable digital ecosystem for the planet

UNEP's goal is to support and scale up environmental change through an effectively governed and inclusive, data architecture and digital ecosystem for the planet.

UNEP will contribute technical expertise to the development and consolidation of an open and inclusive global digital ecosystem for the planet based on digital norms and governance frameworks that integrate datasets and analysis of climate change, biodiversity loss and pollution. Datasets from the public and private sectors will be used to produce actionable, real-time and predictive insights that will contribute to an automatic monitoring of global, national and local progress towards key climate, biodiversity and pollution indicators of priority SDGs and MEAs.

Environmental data and analytics will be digitally integrated into the emerging UN data ecosystem and into each UN country team as part of UN reform. The subprogramme will also engage closely with other relevant subprogrammes to provide analysis and guidance to help mitigate the direct environmental impacts of digital technology supply chains, energy requirements and e-waste, as well as addressing risks arising from misinformation on digital platforms.

This strategic action will be delivered in close coordination with the **Science-Policy foundational subprogramme** with a focus on addressing key data gaps in monitoring SDGs and MEAs progress using digital tools and non-traditional data sources, including earth observation, sensors, AI and citizen science. It will also contribute to global digital standards linked to environmental data, infrastructure and applications.

It will conduct horizon scanning on digital risks for the environment, use AI for strategic foresight and predictive analytics, and federate existing data and digital platforms into an internal and external digital ecosystem. Data on the gender-environment nexus will also be collected as gender equality and a rights-based approach are key for environmental sustainability and decision-making.

# 1.1 Sustainable digital ecosystem of data for the planet

## EXAMPLES OF UNEP'S WORK IN ACTION

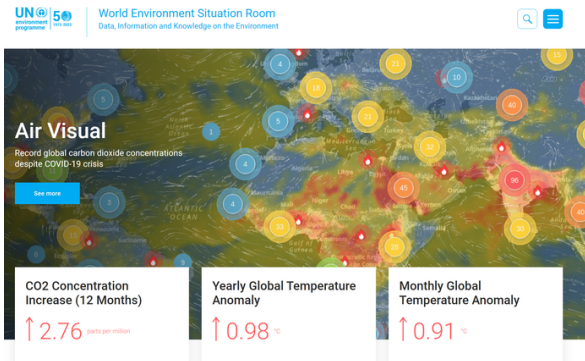


Image credit: wesr.unep.org

### World Environment Situation Room

This online platform developed and maintained by UNEP provides free and universal access to environmental data, information, and knowledge to keep the world's environment under review.

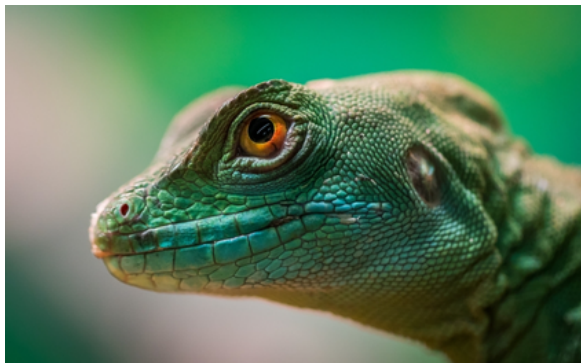


Image credit: Unsplash / Igor Kamelev

### UN Biodiversity Lab

This open-source platform features data and more than 400 maps highlighting the extent of nature, the effects of climate change, and the scale of human development. It is a powerful tool for spatial planning and prioritization.

## DIGITAL TRANSFORMATION

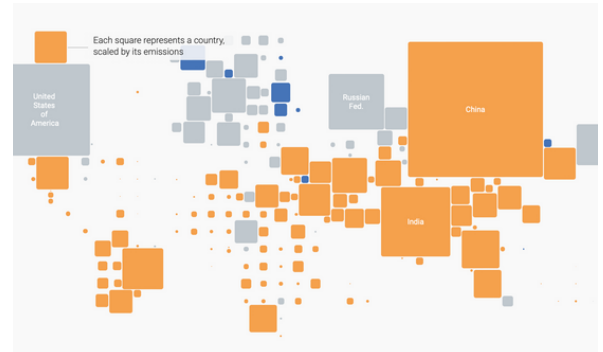


Image credit: Climate Action Note

### Climate Action Dashboard

Key information on the state of the climate and countries' progress towards the commitments under the Paris Agreement in an accessible way within a global dashboard.

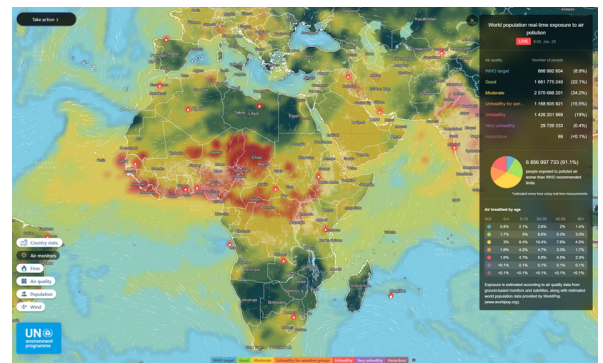


Image credit: UNEP and IQ AIR

### Global Environment Monitoring System for Air

The GEMS Air platform helps to scale up solutions to keep the world's air quality data under continuous review. It currently manages a network of 80,000 low cost air sensors that provide a global view of real time air quality. Over 50 million users accessed the platform in 2021.

## 1.2 Digital transformation partnerships for shifting market incentives and consumer behaviors

UNEP will aim to catalyze and inspire actions, investments and partnerships that use data and digital technologies to accelerate deeper structural transformations in markets, value chains, and consumer behaviors that shift incentives towards sustainability outcomes.

These measures will also aim to achieve greater efficiency, effectiveness and transparency in advancing internationally agreed climate, nature and pollution goals and targets. A range of digital technologies will be explored that can catalyze and amplify innovations in decarbonization, dematerialization and detoxification in the supply chains of products and services.

This strategic action will be delivered in close coordination with the **Finance and Economic Transformations enabling subprogramme** with a focus on influencing finance and consumer behaviors using fintech, e-commerce, social media platforms as well as their underlying algorithms and filters.

### EXAMPLES OF UNEP'S WORK IN ACTION



*Image credit: playing4theplanet.org*

#### Playing for the Planet Alliance

UNEP works with 30 of world's largest video game companies to insert green nudges and activations into video games reaching 1.2 billion monthly active users while also reducing their carbon footprint.



*Image credit: Getty Images / Metamorworks*

#### Coalition for Digital Environmental Sustainability (CODES)

An open multi-stakeholder community of change makers and practitioners collaborating to implement the "Action Plan for a Sustainable Planet in the Digital Age" through joint investments and actions.



## 1.3 Environmental digital literacy, innovation and e-governance capacities

This investment is a prerequisite for governments, stakeholders and UN Country Teams to effectively design and deploy digital technologies and related digital transformation policies and governance frameworks as a means of implementation to solve climate, biodiversity and pollution challenges.

UNEP will work through partnerships to enhance the environmental digital literacy, innovation and e-governance capacities of diverse stakeholders. This will include building inclusive, gender-responsive and human-rights-based digital capacity building programmes, facilitating policy dialogue, and enhancing education curricula.

UNEP will also seek to inspire and catalyze citizen science, open innovation and social collaboration through various digitally oriented challenges, hackathons, conferences, innovation labs, “moonshots” and other competitions. Specific emphasis will be placed on supporting Small and Medium Enterprises (SMEs), social entrepreneurs, women, indigenous peoples, youth and underrepresented stakeholders, in particular in the Global South.

This strategic action will be delivered in close coordination with the **Environmental Governance foundational subprogramme**, with a focus on helping governments implement and report on their SDG and MEA commitments in near real time using machine readable formats and harmonized data standards, automated digital monitoring of compliance with national environmental laws and increasing stakeholder engagement in digital policy development and decision making linked to environmental governance.



*Image credit: Unsplash/ Paige Weber*

## 1.3 Environmental digital literacy, innovation and e-governance capacities

### EXAMPLES OF UNEP'S WORK IN ACTION



Image credit: Getty Images Pro/Troyanphotos

#### Digital discovery sessions

On a monthly basis, UNEP places an innovative digital technology in the spotlight to learn how it is accelerating environmental sustainability.



Image credit: digital4sustainability.atngi.org

#### Digital4Climate

An interactive Learning Programme to explore the opportunities and risks for climate action from digital technologies and the enabling policy framework needed to accelerate investment and innovation.



Image credit: Getty Images Pro/Metamorworks

#### Climate Technology Center and Network

This network accelerates the transfer of technologies for low-carbon and climate resilient development at the request of developing countries. These technologies include Earth observation, AI, drones & sensors.

### DIGITAL TRANSFORMATION



# Priorities for 2022

Priority activities for 2022 will focus on establishing the new subprogramme and laying the foundation for programming priorities, monitoring and reporting as well as external communication.

**Priority 1: Delivery of lighthouse projects on digital transformation within each subprogramme.** Identify and deliver a series of high visibility “lighthouse” projects that can test out different digital transformation pathways, act as beacons of inspiration, help forge internal collaboration and contribute to increased impact according to relevant MTS direct outcomes (annex 3). This also involves working to position key digital transformation and environmental sustainability outcomes delivered by UNEP within the relevant UN policy processes and global digital governance frameworks. An indicative list of the 2022 digital transformation “lighthouse” priorities in each subprogramme include the following:

## **Climate Action:**

UNEP will focus on the delivery of three major platforms: a) build out the International Methane Emissions Observatory (IMEO); b) continue to pilot test the STRATA platform prototype on climate security; c) continue to assess use cases and new visualizations for the climate action dashboard. UNEP will increase engagement in multi-stakeholder coalitions working on standards for carbon accounting and carbon life-cycle assessment (LCA) with a view to supporting the enhanced transparency mechanism of the UNFCCC. UNEP will increase the portfolio of work on the application of digital technologies for climate action delivered by the Climate Technology Center and Network (CTCN), the UNEP-DTU partnership and the Digital4Development Hub. UNEP will build a training programme in collaboration with the EU, GIZ and UNFCCC on digital technologies for climate action (digital4climate). UNEP will continue to integrate digital considerations on carbon accounting into the Task Force on Climate-related Financial Disclosures. UNEP will expand the partnership with Facebook on the Climate Science Center and explore further collaboration with other platforms. UNEP will also invest in the digitalization of the Emissions Gap Report – making the underlying data and analysis open and available on dashboards and Application Programming Interfaces (APIs).

# Priorities for 2022

## **Nature Action:**

UNEP will focus on the delivery of three major platforms: a) continue to invest in the UN Biodiversity Lab and position it as a key data source and spatial planning and prioritization tool for the post 2030 Biodiversity Framework; b) continue to build out the SDG 6.6.1 platform on freshwater, improving analytical functions and the ability to conduct integrated risk analysis; c) continue to build out the Ocean Watch platform and invest in the digital twin of the ocean initiative. UNEP will integrate digital considerations on environmental spatial analytics into the work of the Task Force on Nature-related Finance Disclosures. UNEP will identify opportunities to enhance the scope of the work conducted by the Playing for the Planet Alliance, including branching into music platforms and e-commerce platforms. UNEP will continue to develop the digital analysis capabilities of Nexus Environmental Assessment Tool (NEAT) for use in humanitarian settings.

## **Chemicals and Pollution Action:**

UNEP will focus on the delivery of four flagship platforms: a) continuing to build out the IQ Air platform including new functionalities and enhancing the sensor network as well as the data management backend; b) pilot testing the new chemicals observatory and One Health Intelligence Hub; c) building the SDG 14.1.1 on marine litter; d) the global mine tailings portal. UNEP will continue to engage in the E-waste coalition and in the E-waste monitor, with a focus on standards needed for tracking and tracing ICT components and environmental risks. UNEP will explore opportunities to scale the Countermeasures II programme and assess opportunities for conducting automated waste monitoring with AI and earth observation.



# Priorities for 2022

## Science-Policy:

UNEP will develop a vision, communication narrative, strategy, stakeholder engagement process and business development plan for the World Environment Situation Room (WESR) and the Global Environmental Data Strategy (GEDS). This will include defining and testing specific use cases and communities of practice together with key performance indicators and methods for digital delivery to UN country teams. UNEP will also continue to co-champion the Coalition for Digital Environmental Sustainability (CODES) as part of the Secretary General's Digital Cooperation Roadmap, including an Action Plan and policy-relevant briefing notes. UNEP will also continue to emphasize digital opportunities for environmental sustainability within the UN Science Policy Business Forum.

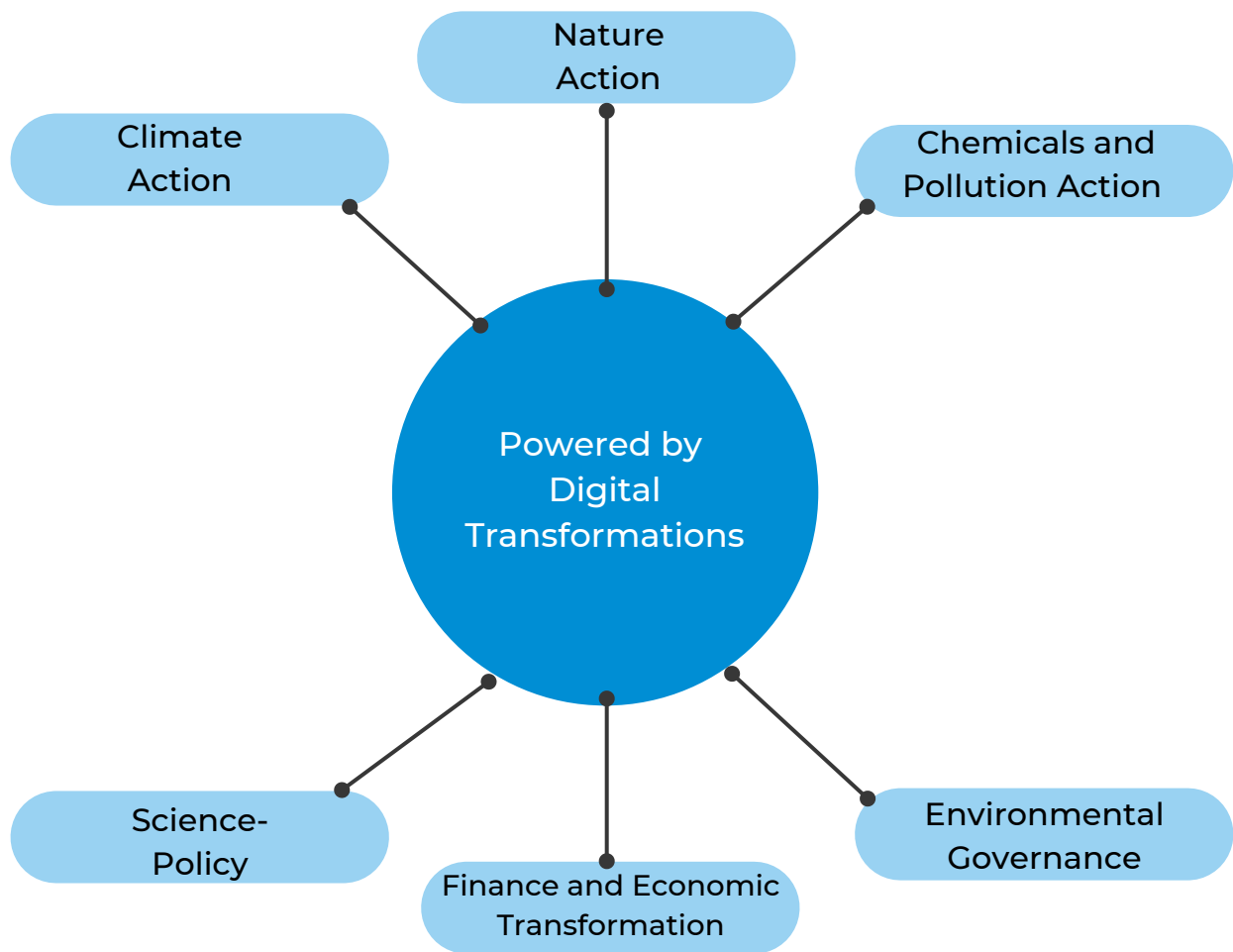
## Environmental Governance:

UNEP will focus on the delivery of three main platforms: a) Continue to develop the INFORMA and DART platforms, including standards and taxonomy for harmonized reporting and analysis; b) advance the development of the Collective Intelligence Portfolio for Environmental Governance; c) continue to development Judicial Portal and ECOLEX. UNEP will also include digital transformation as a key enabler within the annual Environmental Rule of Law Report and establish dialogue processes with member states on environmental governance and digital transformation.

## Finance and Economic Transformations:

UNEP's priority is to integrate a digital transformation perspective into the work of UNEP Finance Initiative and to increase collaboration with the Green Digital Finance Alliance, including the workstreams on the Every Action Counts Coalition and the Green Fintech Taxonomy. UNEP will also continue to invest in guidelines for sustainable in e-commerce platforms, on sustainable ICT procurement and on digital ecolabelling, including technical contributions to the design of the digital product passport and environmental standards for a circular economy. UNEP will begin informing the work of the International Resource Panel towards the opportunities and risks of digital technologies for a circular economy.





Digital transformations will use data and digital technologies to accelerate and scale action in addressing UNEP's climate, nature, chemicals and pollution goals. Digital Transformations will also be the digital bridge across other subprogrammes including Science-Policy, Environmental Governance, and Finance and Economic Transformations.

# Performance assessment

UNEP's delivery of the MTS using digital transformation pathways will be measured by the indicators listed in Annex 2. The performance assessment of the Digital Transformations subprogramme's enabling contribution to the three strategic objectives will seek to measure UNEP's direct, enabling and influencing contribution to the following kinds of systemic shifts:

**Realtime data and predictive analytics that drive decisions:** Digital technologies are used to address key data gaps at global and national levels, generate realtime information and predictive analytics that lead to better integrated decision making and prioritization as well as feedback on policy effectiveness. Data sets and analyses become more accessible, inter-operable and trusted through global data standards and can flow more easily into digital applications to have immediate influence on the economy. Environmental data sets will also be underpinned by considerations for gender equality, human rights and socio-economic development.



*Image credit: Pixabay/Sumanley*

**Economic incentives and business models:** Digital transformation embeds environmental data, analytics, and goals into the platforms, applications, algorithms and filters of the digital economy in a manner that shifts economic incentives and business models towards full cost accounting, transparency, environmental sustainability and a circular economy.

# Performance assessment

**Human behaviors and agency:** Digital transformation uses tools such as product comparability, nudging and gamification to shift human behaviors towards environmentally sustainable products and services as well as lifestyles and livelihoods. Digital tools enhance individual human agency to contribute to local, national and global sustainability and measure individual impact through automated dashboards and individual footprints.



*Image credit: Unsplash/Jason Blackeye*

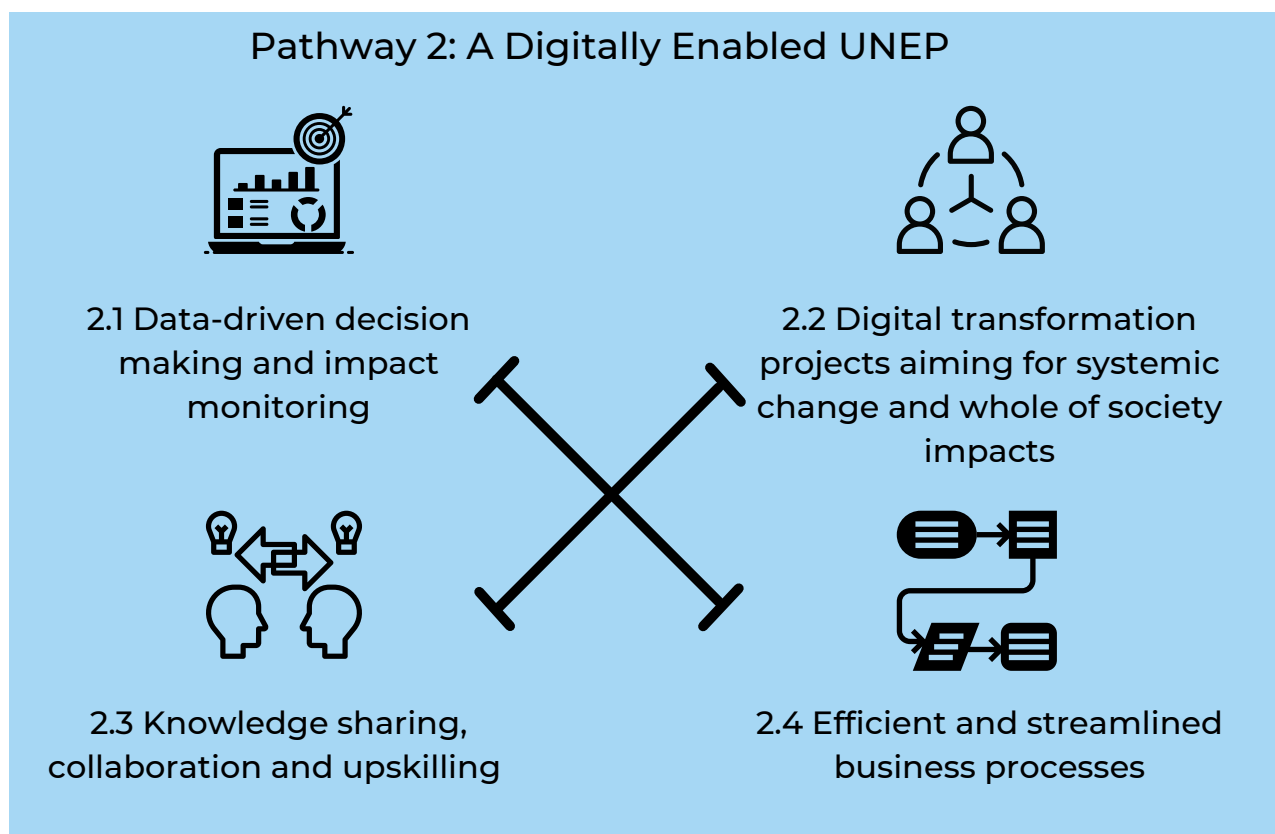
**Automating environmental governance and collective action:** Digital tools, standards and safeguards enhance the ability of governments and stakeholders to automate and embed global environmental governance goals and national commitments into the algorithms of digital platforms. This includes efforts to help stakeholders coordinate efforts, innovate, build trust and take collective actions towards national and global environmental targets. To the extent possible, human rights and gender aspects including disaggregation, equality and bias will be integrated into UNEP's technology and data portfolios, with gaps in regulations, rules and policies being assessed alongside oversight mechanisms and processes. The degree that environmental needs for digital transformation are successfully integrated into relevant national and global policy frameworks will also be considered.



# 2.0 Pathway 2: A Digitally Enabled UNEP

## Strategic Actions

A Digitally Enabled UNEP focuses on using digital technologies to improve the quality and impact of UNEP's work, while also improving the efficiency of its operational systems and internal processes. Here UNEP aims for improved data-driven decision making, knowledge sharing, collaboration and upskilling together with greater efficiency in business processes. This internal Pathway is ultimately about digitally transforming UNEP for the entire delivery of its mandate making it more agile and fit for purpose in the digital age. It will be led by a Chief Digital Officer position reporting to the Executive Director together with a new Digital Accelerator Lab and Network (see section 3). It will pursue the following four strategic actions:





## 2.1 Data-driven decision making and impact monitoring

UNEP will strive to become a “digital first” organization that treats data as a strategic asset that can drive insights, innovations and impact, including through better project design, implementation, and impact evaluation. Programme reporting will be digitalized and monitored through dashboards and Integrated Planning, Management and Reporting (IPMR) as well as aligned to the needs of International Aid Transparency Initiative (IATI). A data warehouse will also be built to consolidate environmental data streams and support flagship data platforms including the World Environment Situation Room (WESR). This will include an emphasis on human-centered design, digital inclusion and the publication of open digital public goods. This track will also ensure programmes have access to data and analytics that can support key cross-cutting issues including gender, youth and disasters and conflicts. The work will be aligned to the Data Strategy of the Secretary-General as well as to the internal Environmental Data and Statistics Roadmap and the UNEP Global Environmental Data Strategy.

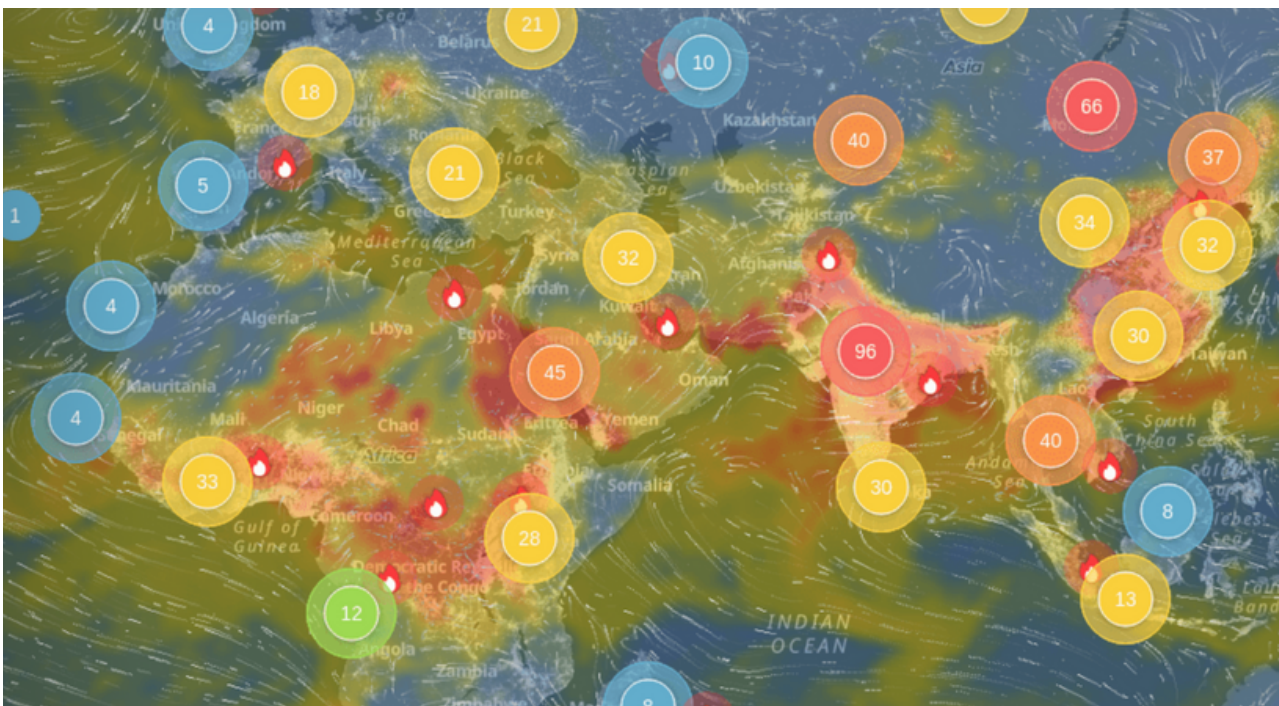


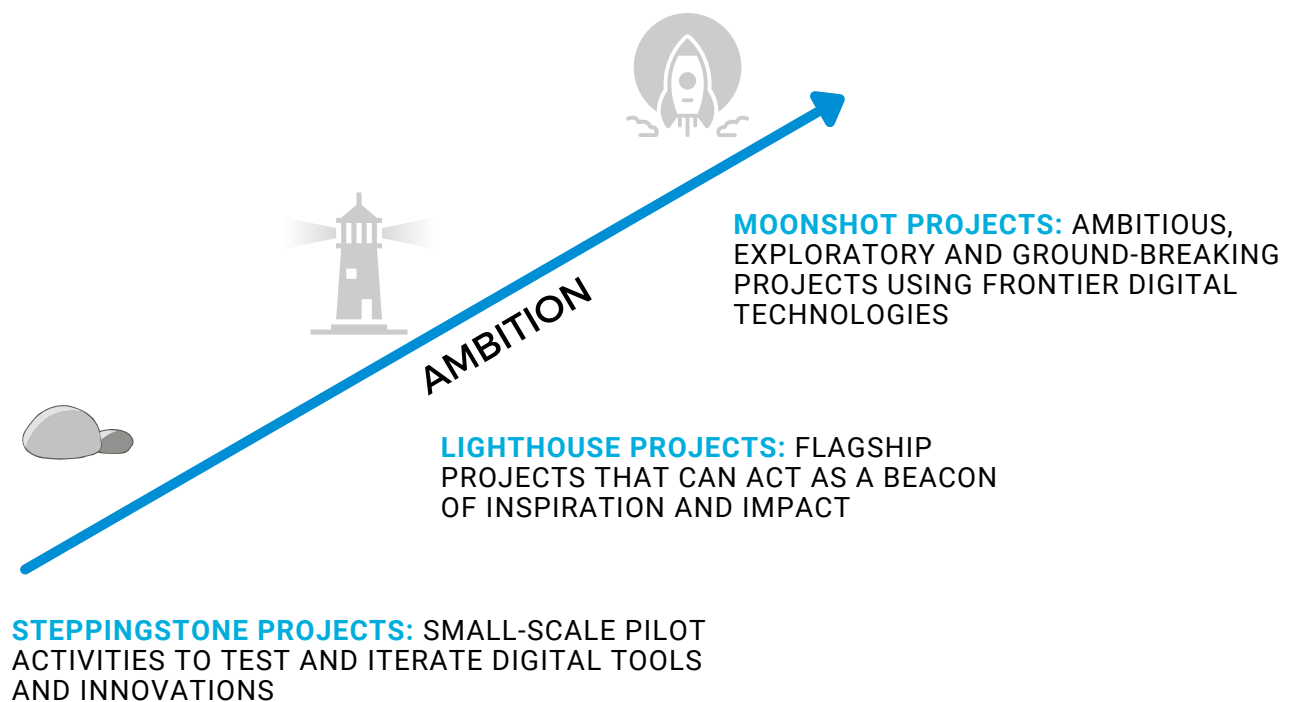
Image credit: wesr.unep.org

## 2.2 Digital transformation projects aiming for systemic change and whole of society impacts

One of the core outcomes of this pathway is to help design, test and scale projects that harness digital technologies to help transform sectors or systems in different ways.

This about shifting away from “business as usual”, to projects and delivery mindsets that can achieve exponential purpose, impact and collaboration using digital technologies. Such projects focus on achieving systemic change and “whole of society” impacts, including through digital disruption. The Chief Digital Officer and the Digital Acceleration Lab will help self-selected project teams identify and adopt digital transformation outputs and outcomes based on their level of digital expertise, experience and confidence. A progressive approach will be adopted whereby project teams select a digital transformation activity based on three levels of difficulty: a) steppingstone; b) lighthouse; and c) moonshot.

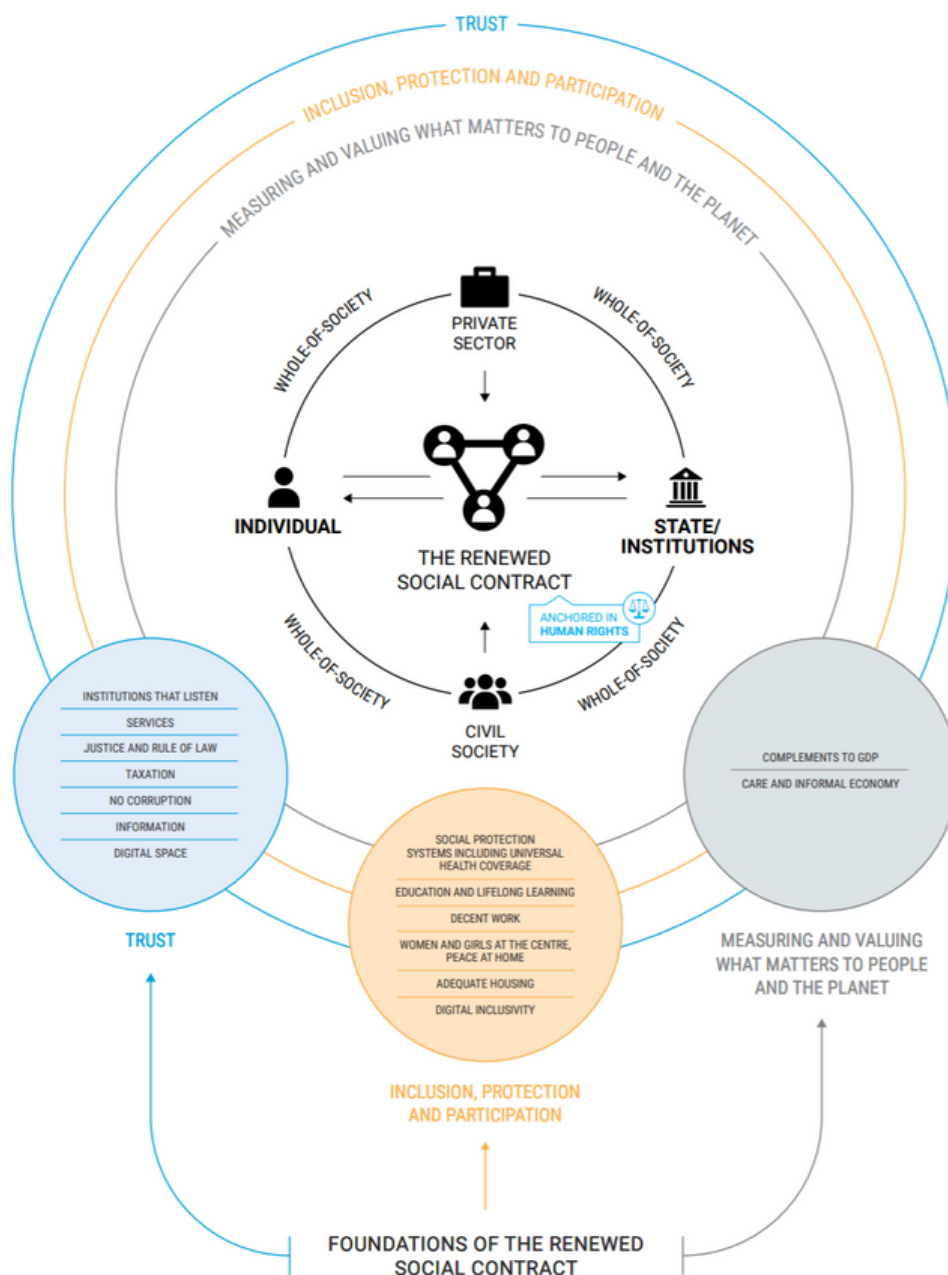
Digital transformation activities will be implemented by divisions in close collaboration with the Digital Accelerator Lab when requested. Projects that demonstrate traction and “product-market” fit will be prioritized for further scale-up support from the Digital Acceleration Lab.



## 2.3 Knowledge sharing, collaboration and upskilling

Use digital technologies to develop and connect knowledge inside the organization and throughout its networks by organising information and sharing lessons learned and best practices. This goes hand in hand with progressive training on the application of different digital technologies and data science to accelerate environmental sustainability and whole of society transformations and the renewed social contract.

### THE RENEWED SOCIAL CONTRACT



Source: Report of the Secretary-General "Our Common Agenda"

## 2.4 Efficient and streamlined business processes

Improve the quality and cost effectiveness of providing management services within UNEP via means such as a “digital core”, a digital enterprise architecture, a decentralized “environmental data warehouse”, self-service, automation, IPMR, UMOJA and other technologies. This also involves solving specific digital pain points that UNEP personnel are experiencing to streamline and simplify workflows and approvals.

### Digital Enterprise Architecture - the UNEP Digital Core

UNEP will continue to implement a unified digital enterprise architecture based on cloud services, a data and digital governance structure and a cost recovery model for digital services.

### UMOJA

Umoja, which means 'unity' in Kiswahili, is the United Nations' administrative reform initiative, which involves a complete re-work of the way the organization manages its administration, in both business processes and Information Technology solutions. Umoja is a single, global solution that is enabling efficient and transparent management of the United Nation's financial, human and physical resources and improving programmatic delivery. Umoja is one of the cornerstones for digital transformation within UNEP and across the UN secretariat.

### Integrated Project Monitoring and Reporting (IPMR)

The intent is that IPMR will be the UN-wide standard implementation for managing and monitoring of projects. It is built around Umoja and therefore tightly integrated to the other core features provided by Umoja including contributions, grants, project spending, procurements, and disbursements.

# Priorities for 2022

Priority activities for 2022 will focus on consolidating UNEP's "digital core" and empowering UNEP personnel to increase their digital capabilities and confidence.

## **Priority 1: Consolidate the UNEP Digital Core: a "digital core" is an essential data and digital architecture foundation for any digital transformation programme.**

Enterprise solutions will implement the following priorities for 2022 in close coordination with the Chief Digital Officer.

### **Digital Enterprise Architecture:**

UNEP will continue to implement a unified and centralized digital enterprise architecture, governance structure and cost recovery model for digital services.

### **Environmental data warehouse:**

Consolidate UNEP environmental data into an internal environmental data warehouse in close cooperation with Science Division. Federate the externally facing environmental data platforms into a digital ecosystem as part of the World Environment Situation Room (WESR). This includes adopting internal standards, taxonomies, validation procedures, partnership safeguards and Application Programming Interfaces (APIs).

### **Digitalizing project document approval process:**

This includes the workflow for project design, review, approval, and monitoring and the connection to IPMR. This workstream will also focus on solving existing pain points in existing digital workflows including UMOJA, IPMR, procurement, and digital licences.

### **One stop shop to access corporate digital licenses:**

All of UNEP's existing digital licences will be made available through a streamlined "one stop shop" to simplify access. Procedures and workflows to procure additional licences will also be clarified.

# Priorities for 2022

**Priority 2. Empower and inspire UNEP personnel and collaborating centres to increase their digital capabilities and confidence:** this involves up-skilling and establishing incentives for UNEP personnel and collaborating centres to progressively experiment and embed digital technologies across their project portfolios.



## **Foster innovation and collaboration:**

A transparent digital innovation process will be instituted and embedded within UNEP's ongoing innovation efforts. Avenues that may be explored include internal "shark tank" competitions for resource allocation, delegation of budgets and decision rights to foster bottom-up innovation, internal collaboration and faster and more risk-informed decisions. Digital transformation and collaboration opportunities will also be identified with key collaborating centers including UNEP-World Conservation Monitoring Center, GRID-Arendal, GRID-Geneva, UNEP-DTU Partnership, the Climate Technology Centre and Network (CTCN) and the Green Digital Finance Alliance.

## **Digital literacy and upskilling:**

A capability assessment will be undertaken to identify focus areas for future competencies and existing internal digital skill demands with an emphasis on data science. A learning curriculum, including internal trainings and external webinars will support staff learning needs. The goal is to create a unified language and common understanding of digital concepts and capabilities across all of UNEP, with due consideration for eliminating biases and embedding human rights and gender equality principles. Capabilities of UNEP colleagues will also be built through the cross-functional teams established around different initiatives, which will create spaces for testing, designing, and learning by doing. This will go hand in hand with improving access to UNEP digital architecture to outposted staff, consultants and partners.



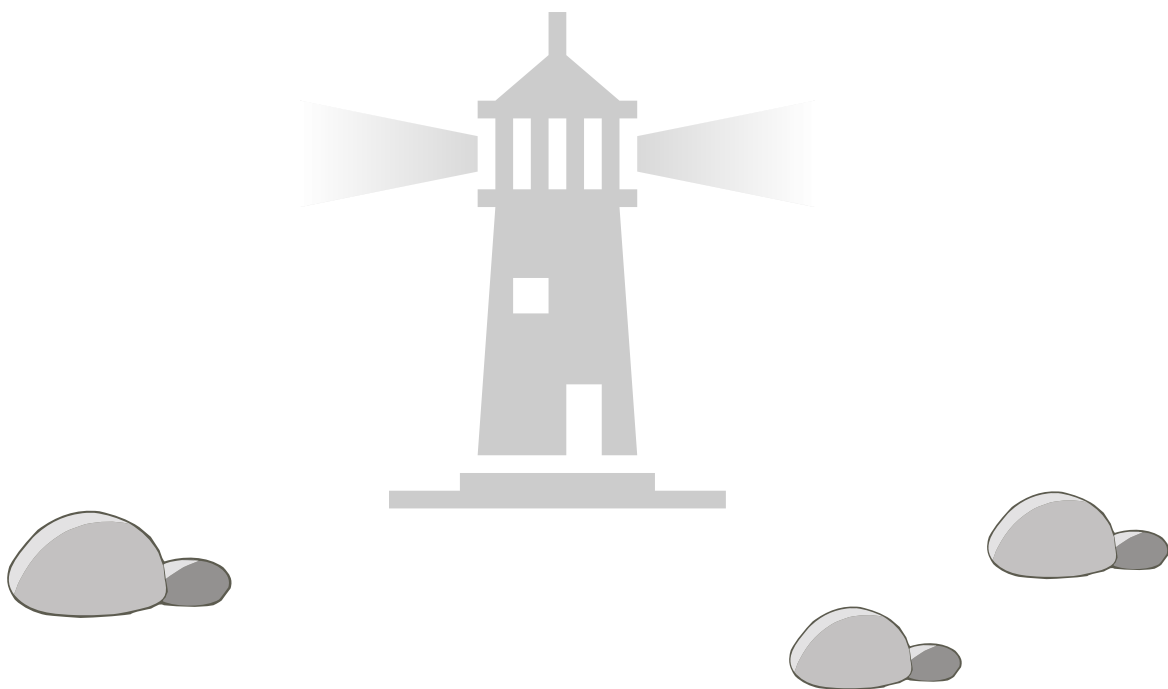
# Priorities for 2022

## **Accelerate procurement process:**

Rapid procurement of digital products and services represents the single largest barrier and risk to the success of the digital transformation process. A range of policy measures coupled with training of procurement officers to address and unblock key pinpoints in the procurement process. This needs to be coupled with a simplified one stop shop to discover and contract digital service providers and corporate LTA that can service multiple projects.

## **Selection of Digital “Steppingstone” and “Lighthouse” initiatives:**

A series of digital “Stepping Stone” and “Lighthouse” initiatives will be selected on a competitive basis and undertaken as short-term projects with demonstrable impact that contribute to one or more of the digital objectives within the transformation pathways. The initiatives will serve as both testing grounds and role models to inspire and inform the organization on the potential power of digital technologies. The Digital “Steppingstone” and “Lighthouse” initiatives will be prioritized, selected and successfully executed based on agile management principles. They will be delivered by divisions in close collaboration with the Digital Transformation Accelerator Lab.





# Priorities for 2022

## **Priority 3. Digital communication and outreach:**

Co-develop and promote a unified digital branding and common narrative that guides how UNEP presents our digital priorities and impacts to our partners and member states. The CDO will work in close cooperation with the Communications Division on the following four actions:



### **Accelerate the adoption of data and visualization in live communication products:**

Progressively redesign the functionalities of UNEP's website and communications strategy to ensure that they can leverage environmental data visualizations and dynamic dashboards to underpin outreach and influence campaigns. There must be an increased emphasis on human-centered design, user journeys, impact metrics and best practice in user interface / user experience (UI/UX). Environmental data and analytics will be increasingly integrated in external communication products and shared via Application Programming Interfaces (APIs). The user experience for UNEP.org and data.unep.org must also be streamlined and unified.

### **Digital publication process:**

UNEP will digitalize the workflow for publications, including design, review, approval and impact monitoring. This process will continue the work already started by the Office of the Chief Scientist as well as the of internal and external publication dashboards developed by the Communications Division, including the use of Altimetrics. Advanced analytics will be conducted on the impact of uptake of key communications products and campaigns to understand specific policy or behavioral influence, including through AI, natural language processing (NLP) and semantic analysis. For flagship and spotlight publications, key messages will be identified and amplified through social media and digital pathways.

# Priorities for 2022

## Digitalize key publications:

Identify at least three annual or series spotlight publications that can benefit from the adoption of digital technologies for data analysis, modelling, stakeholder engagement and dissemination. Work to digitalize a component of the value chain for the selected priority publications and monitor impact of the benefits obtained. Key priority reports for digitalization support include the Global Environment Outlook, the Emissions Gap Report, and the Global Chemicals Outlook.

## Outreach:

Identify and deliver at least three outreach events where UNEP's digital transformations portfolio can be highlighted, and stakeholders can be engaged for feedback about the relevance and impact of UNEP's digital products and services. This should include a strategic presence at the UN Environmental Assembly (UNEA).



Image credit: Pixabay/PhotoMIX-Company

# Performance assessment

Success in digitally enabling UNEP will be measured by the indicators listed in Annex 4. The performance assessment of this pathway will seek to measure the following kinds of internal systemic shifts:

**Digital by design:** all UNEP projects will assess opportunities to harnesses digital technologies from the outset of the design process with a mindset towards systemic change and exponential purpose, impact and collaboration. Every project delivery team includes digital transformation pathways and experts as needed as well as adopts a digital transformation mindset.



**Data-driven decisions and foresight:** UNEP projects conduct human-centered design, data-driven decision making, foresight analysis and impact measurement. Projects create timely feedback loops that enable agile project management and rapid adaptation to changing needs and conditions.



# Performance assessment

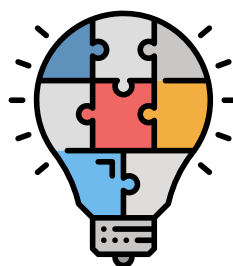
**Efficiency and effectiveness:** UNEP projects achieve more impact for less money using digital tools to enhance efficiency and effectiveness. UNEP delivers products and services that are easier, better, faster and cheaper compared to business-as-usual methods.



**Reach and influence:** UNEP improves the reach and influence of our products and services beyond the echo chambers of the “converted” to new segments and constituencies. Technology will be leveraged for greater inclusion across countries and eradicating gender gaps in accessibility. UNEP systematically collects metrics that showcase uptake and impact at the policy or behavioral level.

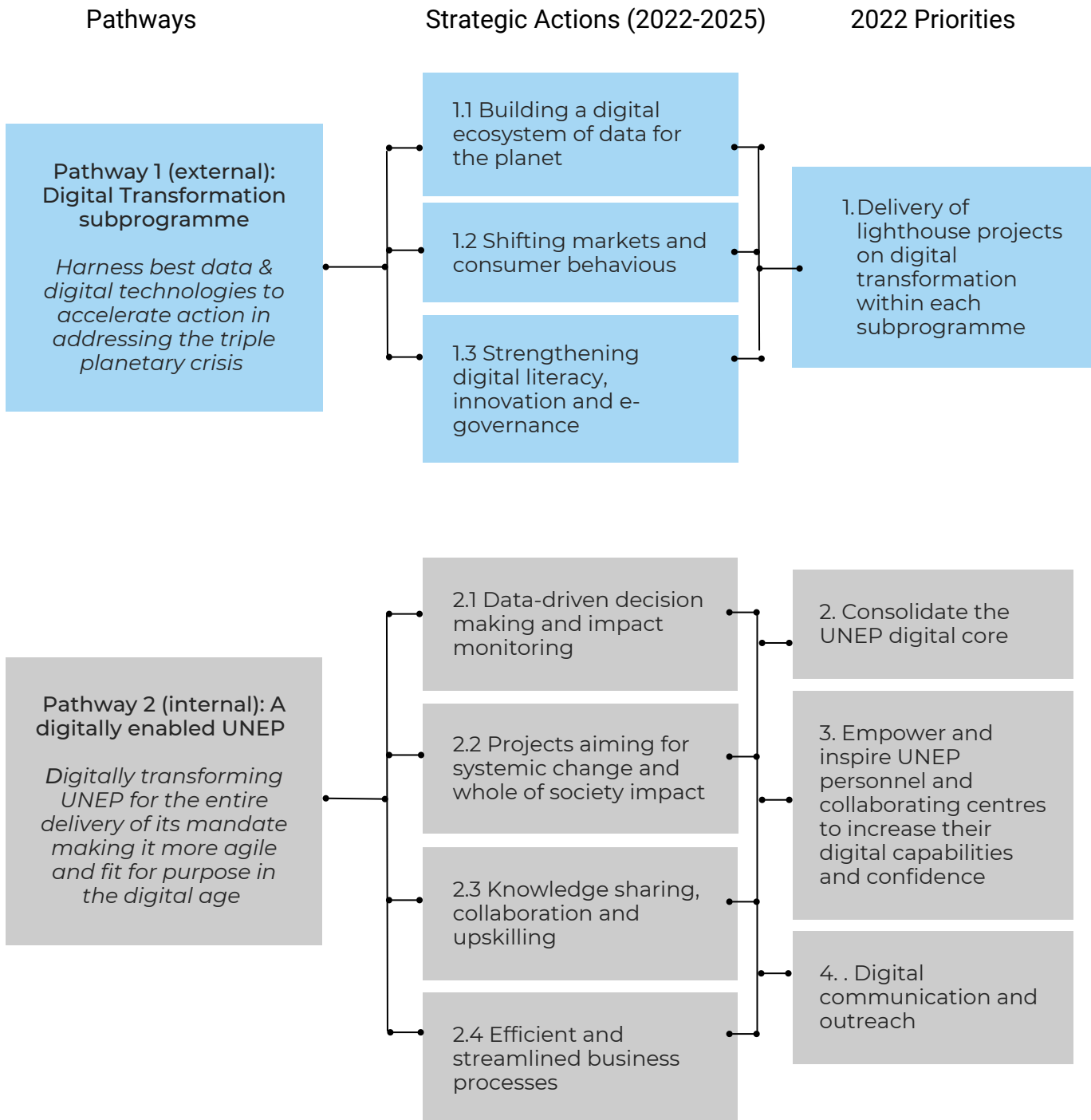


**Innovation, collaboration and risk-taking:** UNEP personnel accelerate the pace of innovation, calculated risk-taking and ability to collaborate and adapt to changing needs as part of a digital ecosystem of agile actors.



# Summary of the two digital transformation pathways

## Digital transformation delivery and institutional structure



# 3.0 Institutional Structure

Digital Transformation will have a singular institutional structure, with an integrated administration for Pathways 1 and 2, for consistent development, messaging and delivery

## Pathway 1: Digital Transformations Subprogramme Management

**Digital Transformations Subprogramme Coordinator (DT-SPC)**, is approved in the POW and funded from the Regular Budget and functions as other subprogramme coordinators consistent with the Terms of Reference for the global SPCs: 1) strategic planning; 2) coordinating, monitoring and reporting on performance against results planned; 3) advising on where adaptive management is necessary and recommending where resource allocations would best deliver the results in the subprogramme; 4) developing an impact narrative for the subprogramme on how different digital transformation outputs and outcomes have contributed to whole of society shifts and impacts. The DT-SPC focuses on digital technologies that can be embedded into the design of existing and new projects to accelerate and scale action, internal collaboration and impact.

## Pathway 1: Digital Transformation Subprogramme Management

**Regional Subprogramme Coordinators (RSPCs):** These are converted Regular Budget positions and their role is similar to that of other RSPCs to: 1) identify and implement thematic digital transformation priorities within the region; 2) support project design to increase adoption of data and digital technologies; 3) help regional staff, UNCTs and governments access and share data & analytics; 4) liaise with digital stakeholders to receive feedback on UNEP digital products and services; 5) contribute to the UNEP digital ecosystem and to the application of WESR in regions and countries; 6) deliver regional training and support innovation events.

**Digital Transformations staff within Divisions:** The Digital Transformations staff members within each division will work to implement, catalyse or support key digital transformation priorities. This will consist of 1) managing the delivery of a key digital transformation lighthouse projects within divisional workplans; 2) encourage the testing and adoption of digital technologies and impact measurement framework by relevant projects in each division; 3) advocate for the division-wide application of data, analytics, standards and safeguards; 4) provide internal coordination channels within and across divisions for the design of steppingstone, lighthouse or moonshot digital projects and related digital value chains; 5) help divisional staff and partners access and share environmental data & analytics; 6) capture key lessons learned on the application of digital technology for systems transformation; 7) liaise with digital stakeholders and communities of practice to exchange needs, priorities and lessons learned; 8) engage in the Digital Accelerator Network.

**Digital Accelerator Network:** This network includes all of the UNEP staff funded by the Digital Transformations subprogramme within the Regional Offices, the Divisions and in Enterprise Solutions, including a secondary reporting line to the CDO to ensure strategic coordination across the programme of work. The idea is to consolidate core digital expertise under a common network – which allows pooled expertise and strategic deployment to meet different corporate needs.



## Pathway 2: A Digitally Enabled UNEP

**UNEP Chief Digital Officer (CDO)** is a new D1-level position that “drives” the vision, thought leadership and change management process for a “digitally enabled UNEP”. The CDO heads the Digital Accelerator Lab as well as the Digital Accelerator Network (See Figure 1). The CDO will be a member of the UNEP Senior Management Team and is the vice-chair of the Data Governance Group together with the Science Division director. The CDO will work closely with the lead of UNEP’s Enterprise Solutions to ensure effective translation of business needs into an ICT infrastructure, set of digital services, and a digital governance framework. The CDO will work in close coordination with the Digital Transformations Subprogramme Coordinator to ensure UNEP has the internal capacities, expertise and roster of delivery partners to achieve the digital transformation aspirations and goals of the MTS. The CDO has an internal operational orientation and focuses on “how” to deliver technical support to UNEP divisions and regions that have substantive digital transformation components. The CDO also has an external orientation focusing on external representation, fund mobilization and advocacy. The CDO role may become obsolete after digital is embedded throughout the organization and implementation capabilities are strengthened.

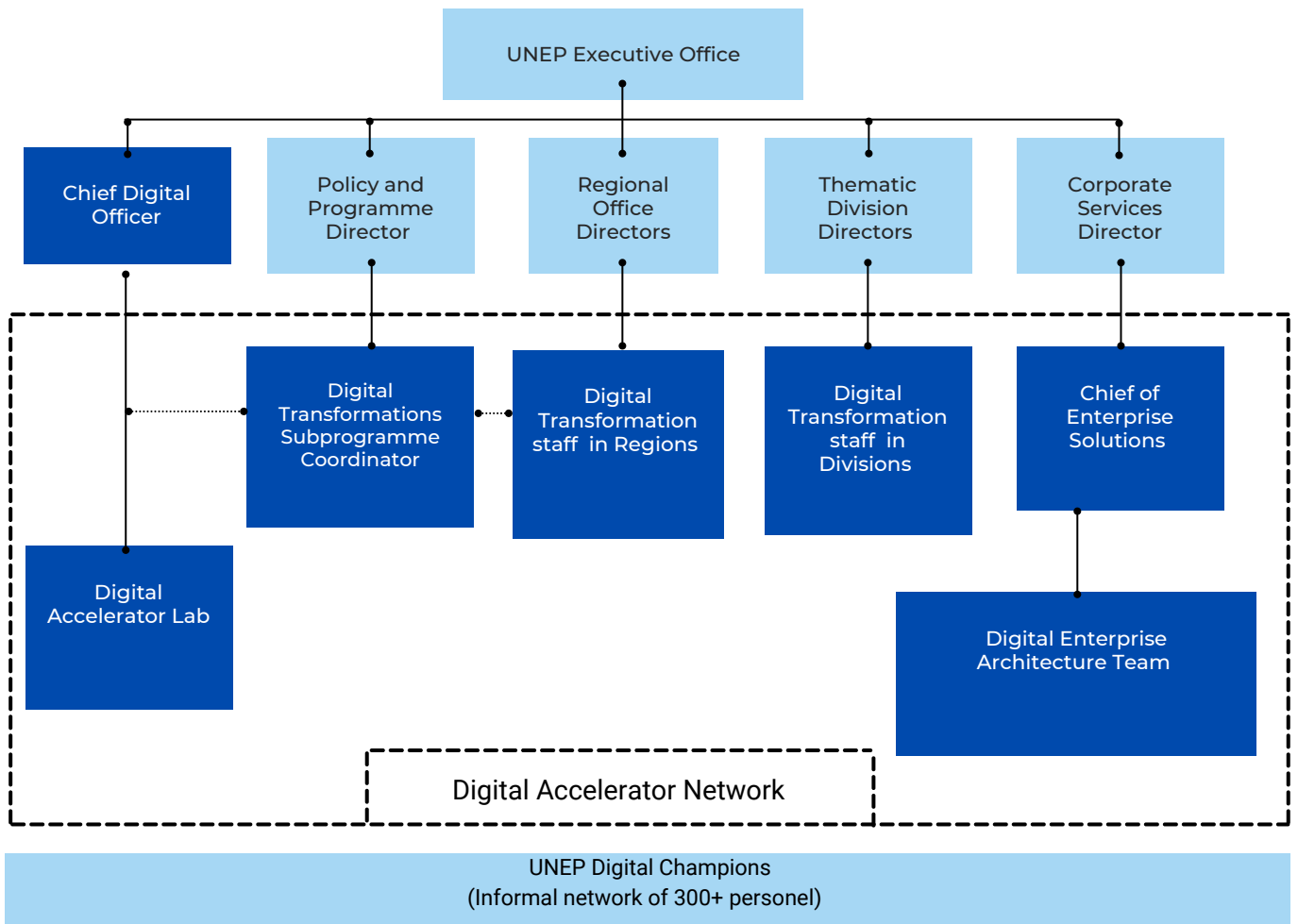
**Digital Accelerator Lab:** The CDO will manage a team of digital experts in a Digital Accelerator Lab. The Lab will act as a center of excellence to: 1) deliver rapid “on-demand” digital expertise, training and advisory services to any substantive division or region; 2) manage a roster of external experts and delivery partners; 3) act as a knowledge hub for best practices, knowledge sharing and key digital standards; 4) catalyse innovation competitions and funding allocations on the basis of ambitious digital transformation pathways; 5) help coordinate the delivery of: “stepping stone” activity (small pilot activities to test digital tools and innovations), “lighthouse” (small-scale, but big picture) and “moonshot” (ambitious, exploratory and ground-breaking projects using frontier digital technologies) projects across divisions and regions including the delivery of minimum viable products for discrete tasks.

## Pathway 2: A Digitally Enabled UNEP

**Chief of Enterprise Solutions:** Existing position that focuses on the digitalization of business processes and the management of corporate ICT tools, infrastructure and data warehouses. The key digital transformation priority for Enterprise Solutions is to build and operationalize a digital enterprise architecture to support the implementation of the digital transformation strategy embracing a multidimensional approach covering digitization, data management, analytics, AI and automation. The relationship between Enterprise Solutions and the CDO will be reviewed and further consolidated in Q3-Q4 of 2022. An additional set of positions will be eventually established as part of a new Digital Enterprise Architecture Team. This team will manage digital enterprise architecture, manage internal data warehouse & problem-solve pain points in digital business processes.

**UNEP Digital Champions:** The Digital Champions is an informal group of 300+ UNEP personnel committing to driving forward the digital transformation vision. They are the voices of change that reinforce UNEP's digital transformation aspiration and new digital culture. They will help identify internal digital needs as well as promote digital capabilities, mindset shifts and initiatives in their units, branches and divisions/regions.

# Digital Transformation Organizational Structure



The structure for the delivery of Pathway 1 and Pathway 2 will be adaptive and iterative based on evolving needs and capacities. This organogram represents a starting point for the programme – but will likely be expanded or refined over time. The organogram will be implemented in a phased approach starting with the Digital Acceleration Lab and progressively building out the Digital Accelerator Network.

# Annex 1: Digital Transformations Priorities

## 1.1 A Digital Ecosystem of Data for the Planet

Climate Stability	Living In Harmony with Nature	Towards a Pollution-free Planet
<ul style="list-style-type: none"> <li>• Improve realtime monitoring, accounting and reporting of carbon and methane emissions</li> <li>• Support the enhanced transparency framework of the Paris Agreement</li> <li>• Access online downscaled climate change projections, impact/risk assessments and geo-spatial analysis at national and subnational levels.</li> <li>• Digitally enable calculation of GHG scopes 1,2, 3</li> <li>• Assess GHG emissions from digital sector</li> </ul>	<ul style="list-style-type: none"> <li>• Catalyze the adoption of biodiversity data standards and digital public good licences</li> <li>• Improve realtime monitoring and reporting of biodiversity targets (blending earth observation with in-situ monitoring) for the post 2020 biodiversity framework</li> <li>• Accelerate natural capital accounting through earth observation and AI</li> <li>• Systemically integrate biodiversity data and analysis into UN CCA</li> <li>• Assess supply chain impact on nature and biodiversity from digital sector and ICT equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Improve automation of global chemicals and pollution inventory</li> <li>• Manage global databases on mine tailings and marine litter</li> <li>• Assess e-waste impacts from digital sector</li> </ul>

- Progressive adoption of global digital ecosystem standards and API for Earth Framework

# Annex 1: Digital Transformations Priorities

## 1.2 Shifting markets & consumer behaviors

Climate Stability	Living In Harmony with Nature	Towards a Pollution-free Planet
<ul style="list-style-type: none"> <li>• TCFD disclosures and ESG standards become inter-operable and trusted</li> <li>• Inform and nudge consumers on low-carbon products and behaviours</li> <li>• Verification of climate losses within insurance sector</li> <li>• Limit the spread of fake news on climate in social media</li> </ul>	<ul style="list-style-type: none"> <li>• TNFD disclosure and ESG standards become inter-operable and trusted</li> <li>• Use digital technologies to enhance payment for ecosystem services schemes</li> </ul>	<ul style="list-style-type: none"> <li>• Apply digital technologies and circular design to reduce waste and pollution across supply chains</li> <li>• Develop standards and use cases for digital product passport / tracking and tracing of e-waste</li> </ul>

- Integrate environmental priorities within the SG's Digital Cooperation Roadmap and the Global Digital Compact through the Coalition for Digital Environmental Sustainability
- Offer guidance to national and local governments as well as private sector on how digital technologies and standards can underpin a circular economy and circular business models

# Annex 1: Digital Transformations Priorities

## 1.3 Environmental digital literacy, innovation and e-governance capacities

Climate Stability	Living In Harmony with Nature	Towards a Pollution-free Planet
<ul style="list-style-type: none"> <li>• Identify best practices on digital transformation and climate action (knowledge products)</li> <li>• Offer e-training on climate action and digital transformation for public sector actors</li> <li>• Support practical action on digital transformation for climate action</li> </ul>	<ul style="list-style-type: none"> <li>• Identify best practices on digital transformation and nature action (knowledge products)</li> <li>• Offer e-training on nature action and digital transformation for public sector actors</li> <li>• Support practical action on digital transformation for nature action</li> </ul>	<ul style="list-style-type: none"> <li>• Identify best practices on digital transformation and pollution action (knowledge products)</li> <li>• Offer e-training on pollution action and digital transformation for public sector actors</li> <li>• Support practical action on digital transformation for pollution action</li> </ul>

- Support to hackathons, global grand challenges, and green technology competitions
- Inter-governmental dialogues on enabling policies for digital transformation and environmental sustainability



# Annex 2: Digital Transformations Subprogramme Indicators

## Pathway 1 – Digital Transformations Subprogramme Indicators in the Programme of Work

	2025 Outcomes and Direct Outcomes Action				
	Target by 2022	Target by 2023	Climate Action	Nature Action	Chemicals and Pollution Action
<p><b>Indicator 1.1 Sustainable digital ecosystem for the planet.</b> Number of digital platforms deployed as a result of UNEP support for automatically monitoring global progress against climate, nature and chemicals and pollution targets to support transparency, predictive analytics and risk identification.</p>	+4	+2	1C  1.1	2B  2.7	3A  3.13
<p><b>Indicator 1.2 Digital transformation partnerships for shifting markets and consumer behaviors:</b> Number of business alliances partnerships and networks leveraging environmental data and digital transformation approaches to incentivize environmental sustainability and a circular economy within financial markets.</p>	+3	+2	1B  1.5, 1.6, 1.8	2A  2.2, 2.10, 2.15	3C  3.11, 3.12
<p><b>Indicator 1.3 Environmental digital literacy and e-governance capacities:</b> Number of digital applications and engagement platforms created with UNEP support to support e-governance and enhance public participation in environmental monitoring, consensus-building, decision-making and digital transformation, including the reduction of environmental digital technology inequalities in impact chains, consumer behaviors and policymaking.</p>	+4	+2	1A  1.3, 1.7	2C  2.1, 2.9, 2.14	3A  3.4

# Annex 3: Digital Transformations Projects

The following list of projects in this annex is indicative and will continue to evolve as the Digital Transformations subprogramme matures.

## 1.1 A Digital Ecosystem of Data for the Planet

Climate Stability	Living In Harmony with Nature	Towards a Pollution-free Planet
<p>7 Platforms</p> <ul style="list-style-type: none"> <li>• Climate action dashboard</li> <li>• International Methane Emissions Observatory</li> <li>• STRATA Analytics Platform on Climate Security</li> <li>• Climate change vulnerability and risk mapping tool</li> <li>• ALivE – Adaptation, Livelihoods &amp; Ecosystems Planning Tool</li> <li>• Early Warning Systems</li> <li>• Digitalization of Emissions Gap Report</li> </ul>	<p>9 Platforms</p> <ul style="list-style-type: none"> <li>• UN Biodiversity Lab</li> <li>• ENCORE database (NCC)</li> <li>• GEMS Water (6.6.1)</li> <li>• Digital Hub for Decade for Ecosystem Restoration</li> <li>• Ocean Watch</li> <li>• One Health Intelligence Hub</li> <li>• Global Peatlands Atlas</li> <li>• CITES trade database and visualization</li> <li>• Food sustainability and ICT standards</li> </ul>	<p>7 Platforms</p> <ul style="list-style-type: none"> <li>• GEMS AIR</li> <li>• Global mine tailings portal</li> <li>• Nexus Environmental Assessment Tool (NEAT)</li> <li>• Plastic Pollution Action Dashboard</li> <li>• Global Partnership on Marine Litter – SDG 14.1.1.b platform</li> <li>• Regional Chemicals Observatory</li> <li>• Planet Gold – ASGM monitoring</li> </ul>
<p>3 Crosscutting Platforms:</p> <ul style="list-style-type: none"> <li>• Sustainable Consumption &amp; Production Hotspot Analysis Tool (SCP-HAT)</li> <li>• ARIES for SEEA Explorer</li> <li>• World Environment Situation Room (WESR)</li> </ul>		

# Annex 3: Digital Transformations Projects

## 1.2 Shifting markets & consumer behaviors

Climate Stability	Living In Harmony with Nature	Towards a Pollution-free Planet
<p>4 Alliances</p> <ul style="list-style-type: none"> <li>• Net-Zero Advertising Alliance</li> <li>• Carbon Mark</li> <li>• Building Passports</li> <li>• Green fintech Taxonomy</li> </ul>	<p>3 Alliances</p> <ul style="list-style-type: none"> <li>• Runtastic</li> <li>• Playing for the Planet Alliance</li> <li>• Planet+ coalition</li> </ul>	<p>2 Alliances</p> <ul style="list-style-type: none"> <li>• UN E-Waste Alliance</li> <li>• Digital product passport</li> </ul>

### 8 Crosscutting Alliances:

- GO4SDGs
- UNEP Finance Initiative
- Green Digital Finance Alliance
- Life-cycle Initiative
- Sustainable Public Procurement
- Consumer information and eco-labelling guidelines
- Coalition for Digital Environmental Sustainability
- Global Environmental Data Strategy

# Annex 3: Digital Transformations Projects

## 1.3 Environmental digital literacy, innovation and e-governance capacities

Climate Stability	Living In Harmony with Nature	Towards a Pollution-free Planet
<p>6 Initiatives</p> <ul style="list-style-type: none"> <li>• Policy brief series: Sustainable Data Centres and Information and Communication Technologies</li> <li>• Climate Technology Centre and Network</li> <li>• Digitalization for Flexible and Resilient Energy Systems</li> <li>• Best practices and lessons learned on digital transformation and climate action</li> <li>• Digital transformation training on climate action</li> <li>• Practical application programme: digital transformation for climate action</li> </ul>	<p>6 Initiatives</p> <ul style="list-style-type: none"> <li>• Peatlands Knowledge Hub</li> <li>• Reducing Consumer Food Waste Using Green and Digital Technologies</li> <li>• Report: Frontier technologies for environmental peacebuilding</li> <li>• Best practices and lessons learned on digital transformation and nature action</li> <li>• Digital transformation training on nature action</li> <li>• Practical application programme: digital transformation for nature action</li> </ul>	<p>5 Initiatives</p> <ul style="list-style-type: none"> <li>• Countermeasures II</li> <li>• Best practices and lessons learned on digital transformation and chemicals and pollution action</li> <li>• Digital transformation training on chemicals and pollution</li> <li>• Practical application programme: digital transformation for chemicals and pollution action</li> <li>• Support governments to introduce digitalization policies and tools into urban transport systems</li> </ul>
<p>8 Crosscutting Initiatives:</p> <ul style="list-style-type: none"> <li>• Earthshot Prize</li> <li>• INFORMEA /DART</li> <li>• Book of Green Nudges</li> <li>• Global Learning and Observations to Benefit the Environment (GLOBE)</li> <li>• Collective Intelligence Portfolio for Environmental Governance</li> <li>• Judicial Portal</li> <li>• Inter-governmental dialogues and decisions on enabling policies to accelerate environmental sustainability with digital technology</li> <li>• Support to the Digital4Development Hub</li> </ul>		

# Annex 4: Incentives

Given that Digital Transformations is a new subprogramme, several corporate incentives may be needed for colleagues to “lean in” to this area of work. These could include:

- **Financial:** a series of digital transformation and innovation criteria will be considered in the allocation of funds from all the new partnership agreements. There will also be a progressing ramping of the total allocation for digitally-enabled projects, starting with 25% in 2022 and moving to 100% by 2025.
- **Digital first policy:** all projects will need to demonstrate adherence to core digital transformation goals and processes by default. Projects that do not use digital best practices or plan for any digital outputs in their operations will be asked for justification.
- **Competitions and hackathons:** Digital transformation subprogramme will organize internal competitions and hackathons as a way for collective ideation and competitive selection for resource allocation.
- **Awards and internal recognition:** a new internal awards programme will recognize innovations in the use of digital technologies to achieve exponential impact in target sectors or systems. Awards will be given in three categories: Steppingstone, Lighthouse and Moonshot projects.
- **Training:** all UNEP colleagues will have access to digital transformation training opportunities and be offered the opportunity to engage in peer-to-peer learning through regular digital discovery session. The process will be transparent and based on merit, promoting gender parity and diversity.
- **Inspira measures:** an additional set of key performance indicators linked to the uptake and experimentation of digital technologies will be included within annual staff performance evaluations.
- **SMT performance indicators:** members of the SMT will also adopt top level digital transformation goals within the annual SMT workplan as well as within regional and divisional performance targets.

# Glossary

## **Digitalization**

Using digital technologies to turn products and services into a digital format to drive efficiency and innovation.

## **Digital core**

Digital core is the technology platforms and applications that allow organizations to transform into digital entities and meet the new needs of the digital economy. The digital core includes next-generation technologies like advanced analytics, IoT, AI, and machine learning that are not generally suited to run on legacy IT infrastructure. Instead, they require flexible, scalable platforms that are integrated in the cloud.

## **Digital enterprise architecture**

Digital organization require a digital enterprise architecture that is guided by its intended business outcome and which can inform strategy embracing a multidimensional approach covering digitization, data management, analytics, AI and automation.

## **Digital transformation**

Systems-level restructuring of economies, institutions and society from digital products, services and business models.

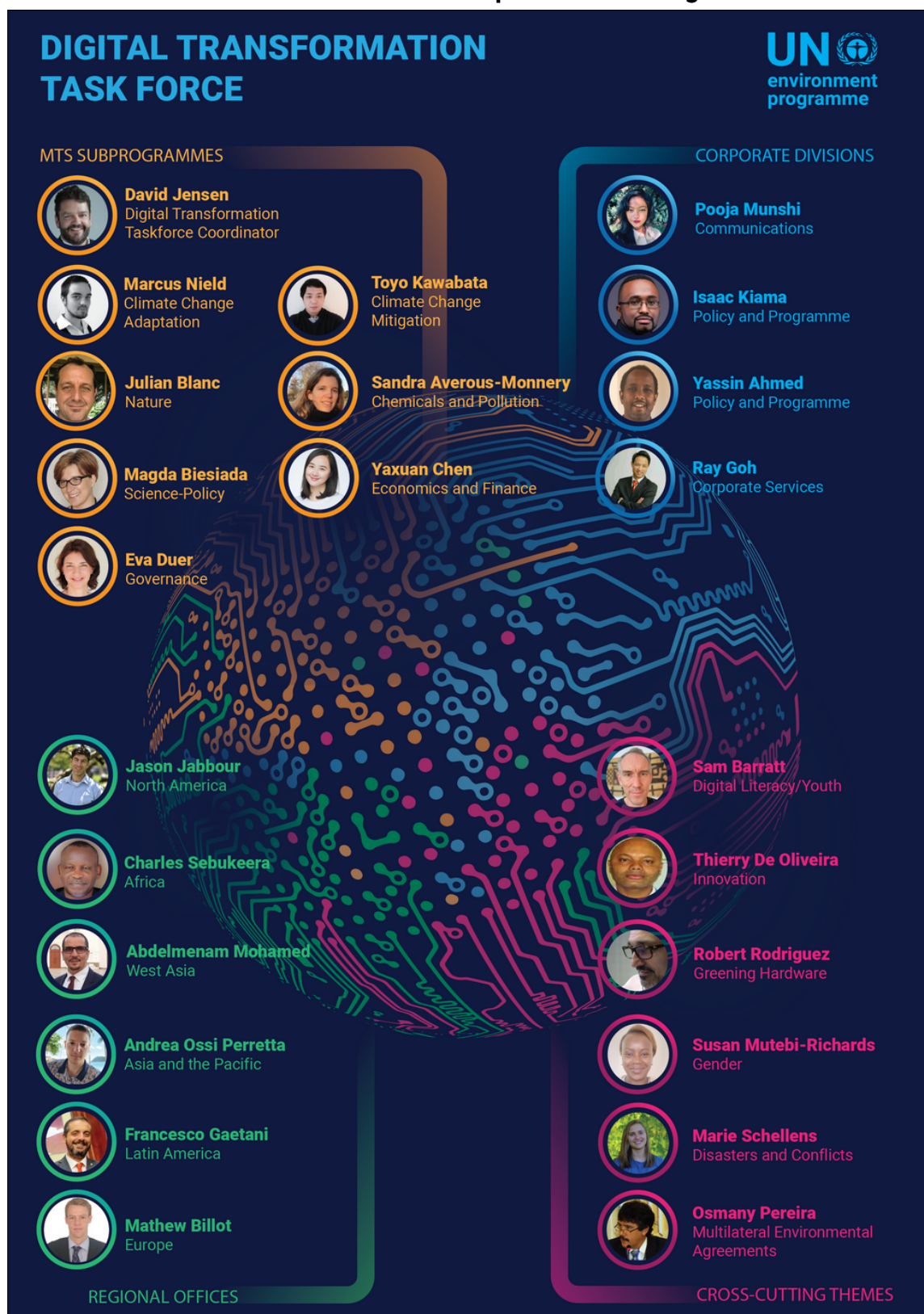
## **Decentralized environmental data warehouse**

A large store of data accumulated from a wide range of sources within an organization and used to guide management decisions as well as project prioritization and design.



# Digital Transformation Task Force

This document was coordinated by UNEP's Digital Transformation Task Force (V2.0)\* based on an inclusive internal consultation process involving all divisions and regions.



\*Technical advise was provided by Shivam Kishore, UNEP digital transformation advisor. Coordination of the UNEP Digital Champions network was conducted by Polina Koroleva.

# UNEP'S DIGITAL TRANSFORMATIONS

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[unep.org/digital-transformation](https://unep.org/digital-transformation)

Digital Transformation Sharepoint

Join the Coalition for Digital Environmental Sustainability (CODES)

