United Nations Activities on Artificial Intelligence (AI)

2021

Executive Summary

Highlights

- *40 entities participated, 227 projects presented*
- *Strong focus on SDGs 3 (Good Health and Well-being), 9 (Industry, Innovation and Infrastructure), 10 (Reduced Inequalities), 13 (Responsible Consumption and Production) and 17 (Partnership for the Goals)*
- *More focus needed on SDGs 2 (Zero Hunger), 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 14 (Life Below Water) and 15 (Life on Land)*
- *Over 15% of the projects reported are working on COVID-19-related AI solutions or pandemic preparedness and response.*
- *Multi-stakeholder collaborations:*

    o *Almost two-thirds of projects featured collaborations with the UN, academia, civil society, or other international organizations*

    o *Almost one third of projects collaborated with private sector actors*

- *Datasets and software tools are the most common outputs of UN AI projects, which can be used to address challenges impeding progress on the SDGs*

Urgent action is needed to achieve the Sustainable Development Goals (SDGs) by 2030. With the potential to drive progress across all 17 SDGs, the use of Artificial Intelligence (AI) can help speed and scale interventions for this purpose.

Recognizing this, the different bodies, agencies, offices and departments of the UN system have been exploring ways to leverage the potential of AI to drive change and impact across their issue areas. In 2020, the UN System Chief Executives Board for Coordination (CEB) and its High-Level Committee on Programmes (HLCP) also decided to establish an interagency working group on AI (IAWG-AI), co-led by UNESCO and ITU, to bring together UN system expertise on AI in support of the CEB and HLCP workstreams on the ethics of AI (led by UNESCO) and the strategic approach and road map for supporting capacity development (led by ITU), and the related gap analysis effort carried out by ITU to identify the gaps in UN AI-related activities in order to help the UN system prioritize strategic actions.

This gap analysis has been complementary to and informed by the annual Compendium on UN Activities on AI. Since 2018, ITU, the UN's specialized agency on telecommunications/ICTs, has been coordinating the compilation of an annual up-to-date directory of all the AI-related projects, initiatives, events and processes within the UN system.

Methodology:

- Projects were submitted by each of the participating UN bodies and agencies using a standardized submission form.
- For 7 entities which were not able to provide updated inputs this year, projects from the 2020 edition have been incorporated in this Report.
- The compilation of submissions received this year has been harmonized and formatted for the purpose of reproduction in the Report.
- For the Executive Summary, select data points were extracted from the submissions to develop an analysis along 5 specific indicators: SDGs addressed, multi-stakeholder collaborations, types of projects, sectoral focus, and project status/duration.
- All inputs received by 18 November 2021 using the standardized submission form have been included in the Executive Summary analysis.
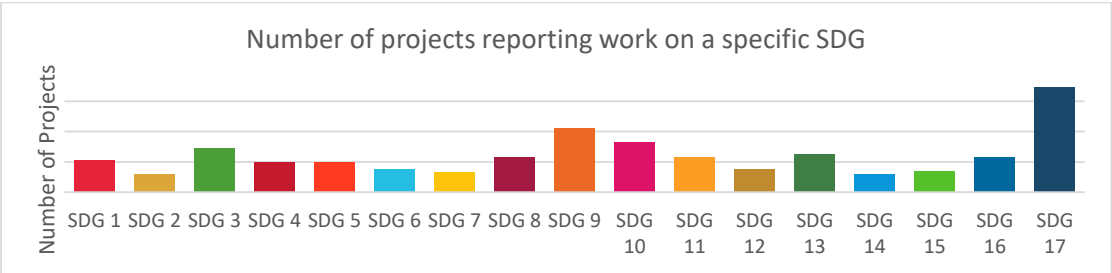
Now referred to as the 2021 UN Activities on Artificial Intelligence (AI) Report, this directory is a joint effort between ITU and 46 UN agencies and bodies, all partners of AI for Good or members of the UN Interagency Working Group on AI. The Report usually presents over 200 cases and projects run by the UN system, in areas covering all 17 SDGs and ranging from smart agriculture and food systems to transportation, financial services, healthcare and AI solutions to combat COVID-19. This Report is not intended to produce an exhaustive inventory of the UN system's work on AI. Rather, it is a tool to further collaboration and build common understanding around emerging AI technologies and solutions.

In this edition, 46 UN entities were contacted, 40 entities have participated, and 227 projects have been presented. A brief analysis of the key tracks and trends arising from the submissions are provided below with a view to help provide an overview of the extensive work that is taking place within the UN system as well as to assist UN bodies and agencies to identify the areas which could benefit from increased interventions as they develop future projects.

This Report is being released at the 7th AI for Good UN Partners Meeting on 16 December 2021. At the meeting, participants will discuss ongoing initiatives as well as opportunities to enhance the partnership for continued collaboration, cooperation, and coordination.
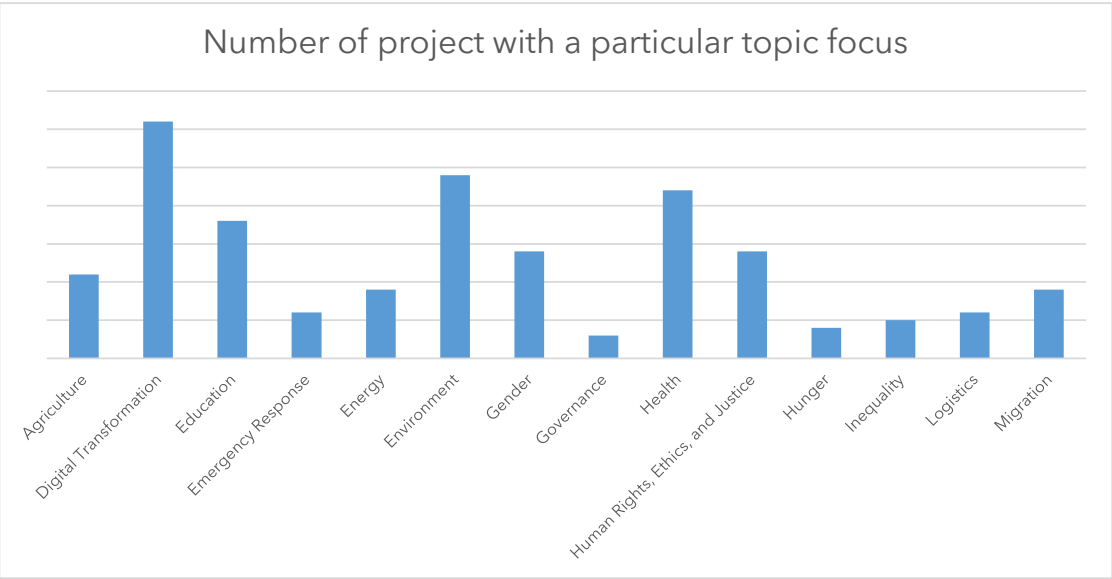
Key tracks and trends

1. SDG Mapping

Number of projects reporting work on a specific SDG

Number of Projects

SDG 1 · SDG 2 · SDG 3 · SDG 4 · SDG 5 · SDG 6 · SDG 7 · SDG 8 · SDG 9 · SDG 10 · SDG 11 · SDG 12 · SDG 13 · SDG 14 · SDG 15 · SDG 16 · SDG 17

The overwhelming majority of UN projects address more than one SDG, signaling holistic, multidimensional projects.
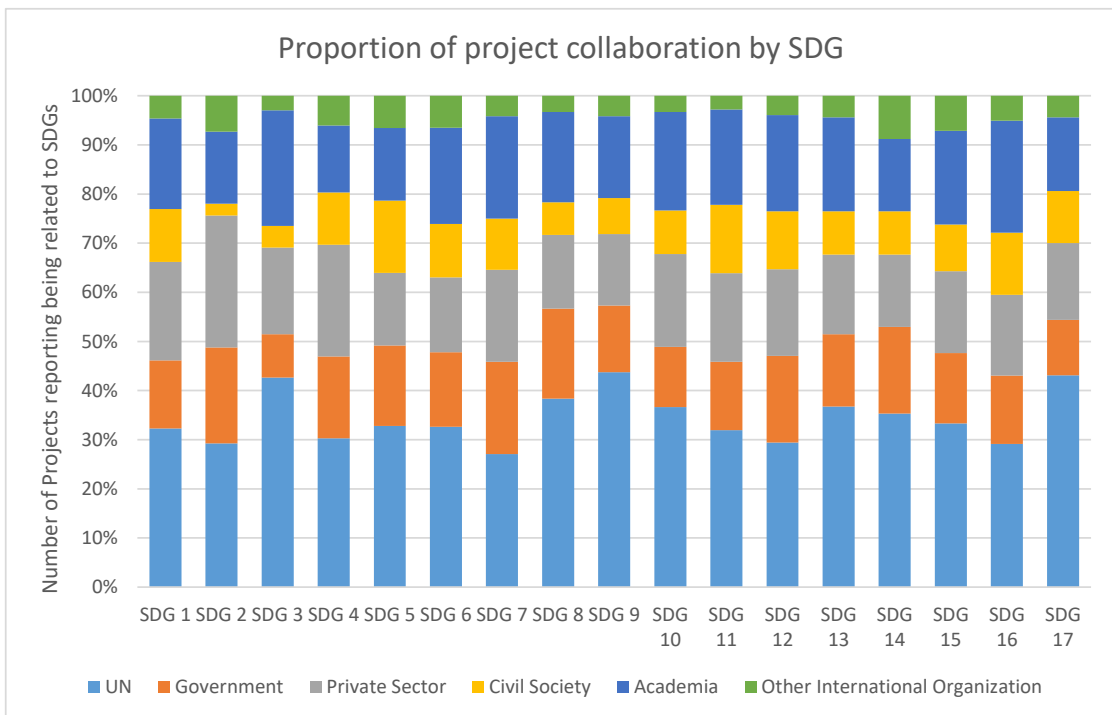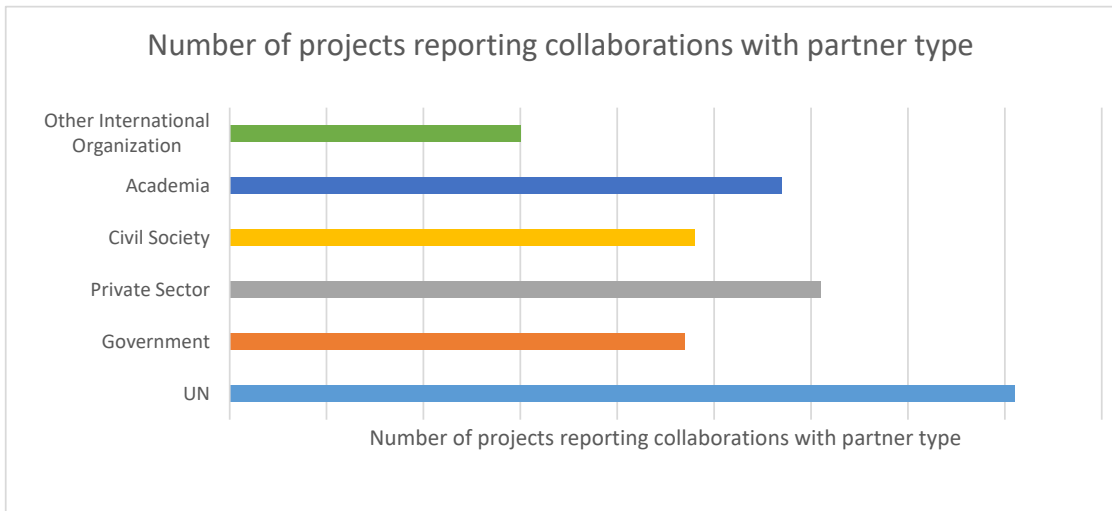
SDGs 3 (Good Health and Well-being), 9 (Industry, Innovation and Infrastructure), 10 (Reduced Inequalities), 13 (Responsible Consumption and Production) and 17 (Partnership for the Goals) are currently the top five most common SDGs addressed by the UN AI initiatives. There remains scope for more targeted action to be taken across SDGs 2 (Zero Hunger), 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 14 (Life Below Water) and 15 (Life on Land).

2. Project Subject Areas

Number of project with a particular topic focus

Agriculture · Digital Transformation · Education · Emergency Response · Energy · Environment · Gender · Governance · Health · Human Rights, Ethics, and Justice · Hunger · Inequality · Logistics · Migration

In addition to the SDG mapping related to the overall outcome of the project, participants have also set out some of the issue areas within which their AI projects are operating. In most cases, the projects are often reported as addressing multiple areas along with driving forward impact on multiple SDGs. "Digital Transformation" projects referred to in this chart include infrastructure and digitalization projects. Several health-related projects have also been reported for addressing the COVID-19 pandemic.
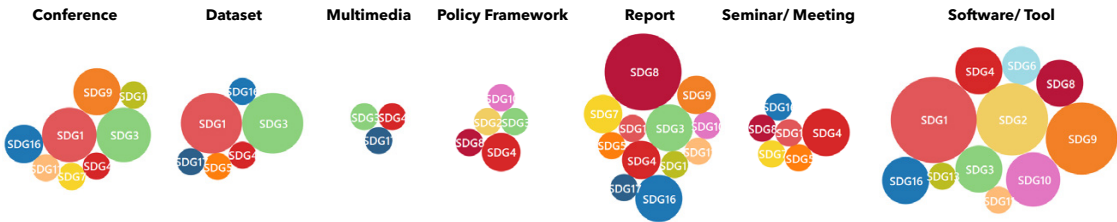
3. Driving Multi-stakeholder Collaboration

Number of projects reporting collaborations with partner type

Number of projects reporting collaborations with partner type

Proportion of project collaboration by SDG

Almost all the UN projects have reported collaborations within the UN system, the private sector, governments, civil society, academia, or with another international organization, demonstrating the UN's focus on maintaining strong partnership with internal and external stakeholders.

4. Concrete data and software tools to address challenges
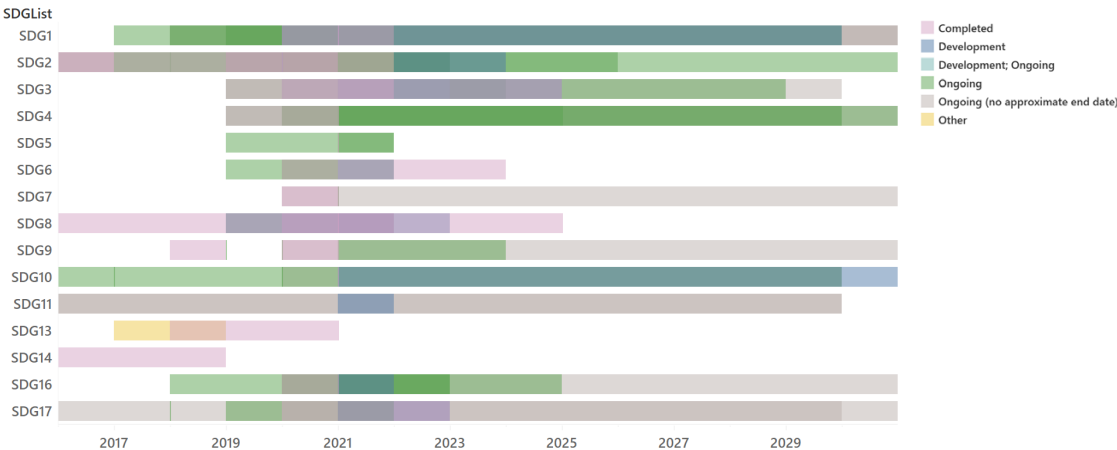
Project Outputs by SDGs

(bubble size = number of projects)

This year, a significant number of the UN projects have focused on outcome-driven products and deliverables such as reports or software tools.

As of now, many of the current reports produced by UN entities relate to AI and SDG 8 (Decent Work and Economic Growth), and software tools to AI and SDGs 1 (No Poverty), 2 (Zero Hunger), and 9 (Industry, Innovation, and Infrastructure).
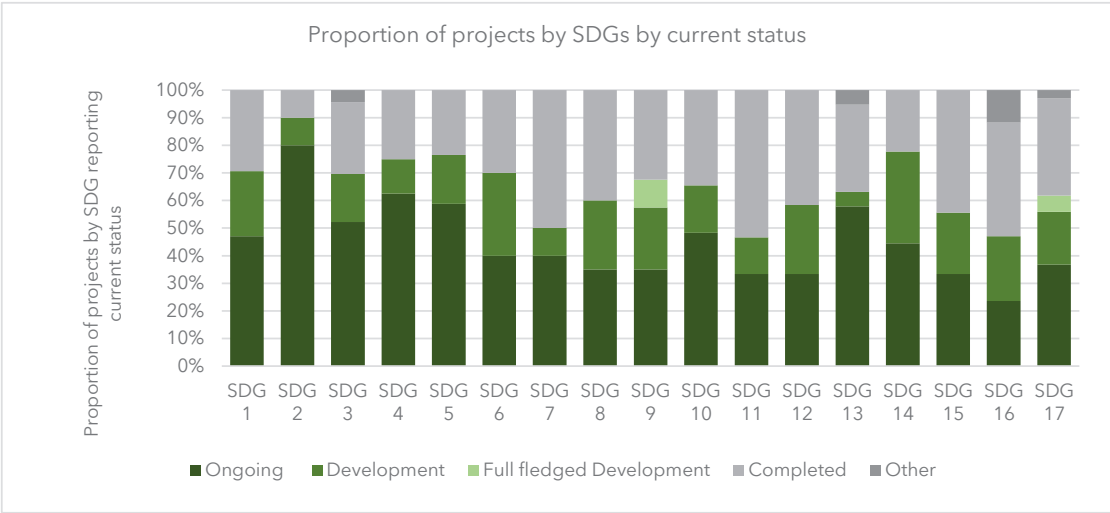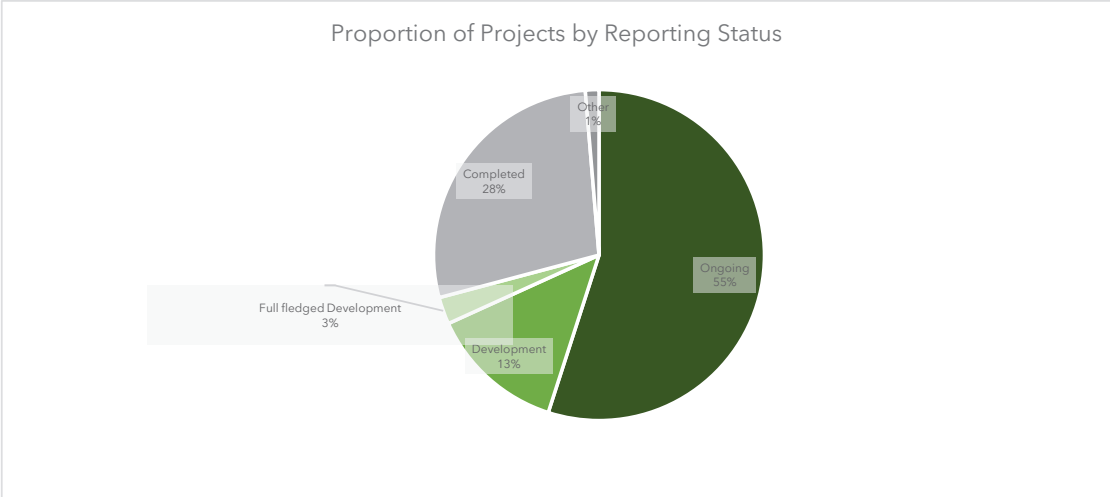
5. Looking forward to 2030

Project Status by SDG

A number of projects did not report specific end dates, or in some cases, the project duration.

Projects related to SDG 4 (Quality Education) seem to have reported the most defined timelines in the Report, whereas those related to SDG 7 (Affordable and Clean Energy) and SDG 17 (Partnership for the Goals) are underrepresented in terms of submissions that included timeline information.

Proportion of Projects by Reporting Status

Other 1%

Completed 28%

Ongoing 55%

Full fledged Development 3%

Development 13%

Proportion of projects by SDGs by current status

Proportion of projects by SDG reporting current status

■ Ongoing ■ Development ■ Full fledged Development ■ Completed ■ Other

In terms of status of the projects (in development, ongoing or completed), the majority of the reported UN AI projects are currently ongoing, with those related to SDG 7 (Affordable and Clean Energy) and SDG 11 (Sustainable Cities and Communities) reporting the most completed projects, often representing completed software tools, reports, and conferences.

Of the projects in development, the majority feature software tools, working on topics such as the future of work, sustainable development, health research, and access to information.

In 2020, the UN Activities on AI Report had presented around 260 projects whereas this year, despite the participation of more agencies, the Report presents about 227 projects. There could be several reasons for this change, including that UN agencies are experimenting with shorter term prototype initiatives/projects/cases as a way to test viability and impact prior to engaging in long term activities, or that many of the activities in the past were events/meetings/conferences designed to seek inputs from different stakeholders on AI-related activities. The nature and status of the UN AI activities merits further analysis that will be explored in future editions of the Report.