



# **Report on KTH's overall sustainability objectives 2019**

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## Foreword

KTH sustainable development policy determines that KTH shall be a leading technical university in sustainable development and have an identity and brand associated with sustainable development. KTH sustainable development work is guided by our sustainability policy, our sustainability objectives and our climate objectives which apply from 2020. There are clear links between the KTH sustainability objectives and the UN global sustainability goals. Thus, when KTH is working for its sustainability objectives we are also contributing to the global sustainability goals.

An important initiative during 2019 was the Climate Framework for Higher Education Institutions which was developed by Chalmers and KTH and which 37 of the Swedish higher education institutions committed to. The Climate Framework means that the higher education institutions undertake to contribute to national and international climate commitments and goals by working with climate issues within education, research and collaboration and by reducing emissions from their own activities so that they fall in line with the "1.5°C target". The initiative has attracted international attention and Chalmers and KTH were awarded the "International Sustainable Campus Network's Whole Systems Approach Award 2020" for their Climate Framework.

In December 2019, KTH decided on overall objectives and measures for the implementation of the Climate Framework at KTH. These include objectives for the period up until 2045 with interim targets for the years 2020, 2022, 2025, 2030 and 2040 within a number of different areas including education, research, collaboration, business travel, energy, buildings, procurement and food.

For the second year KTH participated in the THE impact rankings based on the 17 UN global goals for sustainable development. KTH was ranked 77th in the world out of a total of over 755 universities from 85 countries. This was a drop from last year's 7th place, caused partly by increased competition. In the 2015 ISO 14001 external audit of our environmental management system KTH once again received high credit for our engagement and knowledge about sustainability issues.

This report briefly describes our work towards the KTH sustainability objectives and how this relates to the UN global goals. The report contains brief versions of the objectives while the complete text of the objectives may be found on the [KTH website](#). There is also an indicator appendix to the report on the [website](#). In addition to the nine objectives reported on here, KTH also has sustainability objectives for the working environment.

Follow-ups show that we have achieved our sustainability objectives in part. Ongoing work aimed at achieving our objectives requires us to work systematically in several areas, which include:

- Continued integration and progression of sustainable development in the educational programmes.
- Strengthening of integration of sustainable development in the KTH research base.
- Increased initiatives to raise visibility of KTH sustainable development work.
- Implementation of the Campus Plan for 2018 – 2023 and continued work on improved energy efficiency.
- New measures being developed and implemented to reduce emissions from flights.
- Development work with criteria and working methods for the placement of fund capital.
- Ensuring that sustainability issues are more clearly integrated in, for example, the ordinary operational planning of the schools and budget preparation at the divisional and departmental level.

Stockholm, May 2020

Göran Finnveden, Vice-president for Sustainable Development  
Kristina von Oelreich, Sustainability Manager

## Education

### Key global goals for sustainable development

Our educational programmes are directly related to UN global target 4.7 which stipulates that all students should acquire the knowledge and skills needed about sustainable development, but above and beyond that, teaching at KTH relates to all the global sustainability goals.



Image 1. UN global goals for sustainable development

### KTH overall sustainability objectives 2016-2020

- KTH shall increase all employees' and students' knowledge of and involvement in issues relating to sustainable development.
- Sustainable development shall be integrated into all educational programmes at all levels so that students can contribute to the sustainable development of society after graduation.

The objectives have been achieved in part. The ongoing review of environmental and sustainability labelling of courses in the schools has led to an increase in labelling (see fig. 1). The 2019 interim report contained questions about the integration of sustainable development into the programmes. The answers to these questions show that there are opportunities for improvement in a number of the programmes. Sustainable development was not one of the focus areas of the Swedish Higher Education Authority quality inspection of KTH, but it was addressed in the report, nevertheless: “Our site visit confirmed that this was a priority area which had successfully been introduced into the design and implementation of the education programmes.”

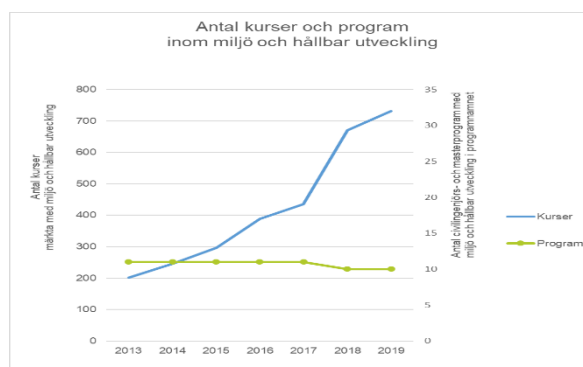


Figure 1. Number of environmental and sustainability labelled courses and programmes at KTH per year 2012 – 2019. The number of environmental and sustainability labelled courses increased from 671 to 731 between 2018 and 2019.

In order to achieve the objectives, continued systematic work is needed whereby every the schools and every programme works towards continued integration and progression of sustainable development in the educational programmes.

### Examples of what we have done

- Each programme reports on its work on integrating sustainable development in the obligatory programme analyses. Directors of First and Second Cycle Education (GA) / Programme Directors (PA) summarise this work in the school reports. A number of programmes have reviewed their teaching objectives and development. There are some recurring challenges such as differences in the advanced knowledge of master's students.
- Programmes at the undergraduate and graduate level have chosen 1-3 of the global goals and composed a text about what the students can do to contribute to sustainable development after graduation. This text is now included in the programme description on the website.

- Students applying for a KTH Scholarship must now provide an account of how study at KTH will help them contribute to the sustainable development of society.
- Course LH215V *Learning for Sustainable Development* (4.5 HEC [higher education credits]) is offered to teaching staff yearly. As well as in this course, sustainable development is included in the following higher education teaching courses; FLH3000 Basic Communication and Teaching (3 HEC), H217V Leading Educational Development (3 HEC), LH225V Gender Theory and Gender Equality in Technical Higher Education (4.5 HEC), LH233V Teaching and Learning for Challenge Driven Education in a Global Context (3 HEC), LH235V Global Competence for Teachers in Higher Education (3 HEC).
- Workshops and other meetings to support teachers in integrating sustainable development are run regularly.
- Funds have been given to three teaching-related projects, including a multi-school collaboration to develop teaching in circular economy at graduate level.
- Staff training in environment and sustainable development has been implemented.
- A senior lectureship in teaching for sustainable development has been advertised.
- In September 2019 KTH hosted the international conference "Accelerating the Implementation of Sustainable Development in the Curriculum".

## Research

### Key global goals for sustainable development

Research contributing to all of the 17 UN global sustainability goals is being carried out at KTH. According to a bibliometric analysis developed during 2019 the most addressed goals in publications between 2012-2018 were Goal 13 *Climate Action* and Goal 7 *Affordable and Clean Energy*. The analysis also showed that the number of publications increased yearly for most of the global goals.



Image 2 UN global goals for sustainable development.

### KTH overall sustainability objectives 2016-2020

- KTH's research for sustainable development shall increase.
- The integration of sustainable development in KTH's research base shall increase.

Within the framework of the Environmental Management System each school has an action programme for how research on environment and sustainable development should be expanded. KTH Sustainability Office (KTH SO) supports cross disciplinary research through, for example, network building and financial support for the writing of applications. The KTH sustainability objective that research for sustainable development shall increase was partly achieved by the measures implemented in 2019. During that year 35% of the faculty positions advertised were clearly linked to sustainable development, which is an increase of 11 percentage points over the year before.

During the period 2018/2019 KTH maintained its ranking in both the Academic Ranking of World

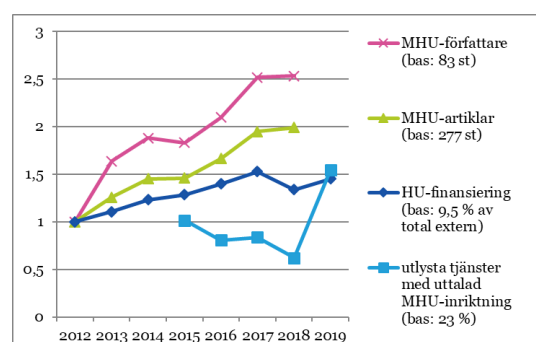


Figure 2. Normalised indicators for research into environment and sustainable development: the number of authors publishing within ESD, the proportion of external financing from the Swedish Environmental Protection Agency, Formas, the Swedish Foundation for Strategic Environmental Research and the Swedish Energy Agency as well as the proportion of advertised positions with ESD included in the job

Universities (placed 151-200 within Environmental Sciences and Engineering) and its QS-ranking (101-150 in the area Environmental Sciences). The proportion of research finance from four funders within environment and sustainable development (the Swedish Energy Agency, Formas, the Swedish Environmental Protection Agency, the Swedish Foundation for Strategic Environmental Research) rose from 13% (2018) to 14% (2019) of the total external research funding. The number of scholarly publications within sustainable development increased by 2%, and according to a bibliometric analysis in 2018 comprised 20% of the total number of publications (indicators are measured with one year lag).

In order for the objectives to be achieved, a strengthening of the integration of sustainable development in the KTH research base is needed. Sustainable development needs to be integrated in more subjects and in more departments. This requires more faculty positions, more university funding and more competence centres to have a clear link to sustainability.

### Examples of what we have done

- ESD provided financial support for 10 initiatives during the year, a number of which dealt with collaboration and network building within research.
- A number of information and networking gatherings were arranged prior to calls from the Swedish Foundation for Strategic Environmental Research and the Swedish Environmental Protection Agency.
- A number of workshops on the UN global sustainability goals were provided for researchers.
- A method has been developed for the measurement of research publications which contribute to the global goals, in collaboration between KTH SO and KTH Library.
- As a service to KTH researchers, KTH SO has also provided information about current research calls.
- The KTH action plans for 2019 and 2020 allocate strategic investment for teacher recruitment of SEK 17 million and SEK 10 million per year respectively for four years wherein investments into sustainable development are to be prioritised.

## Collaboration

### Key global goals for sustainable development

Collaboration at KTH concerns all global sustainability goals.

### KTH overall sustainability objectives 2016-2020

- In collaboration with new and existing partners, stakeholders and students, KTH shall work to contribute to sustainable development of society.
- A stronger picture of KTH as a leading technical university in sustainable development shall be conveyed through communication, dialogue and interaction with the surrounding community.



Image 3. UN global goals for sustainable development.

The objective that, in collaboration with new and existing partners, stakeholders and students, KTH shall work to contribute to sustainable development of society has been fully achieved by means of measures implemented in 2019. KTH arranged a large number of different kinds of external and internal gatherings, including: the annual KTH Sustainability Research Day, with its focus on strategic partnership for sustainable development; a conference on sustainable water use in conjunction with the IVL Swedish Environmental Research Institute AB; Hållbarhetstorget in conjunction with Stockholm Municipality and Akademiska Hus at the KTH Campus Fair. Over 1,000 people took part in these gatherings during the year. Student organisations arranged a number of events linked to sustainable development and climate issues during the year, including Green Week, collaboration with the People's

Climate Parliament, the Global Climate Strike as well as seminars on different themes. The partnerships with the IVL Swedish Environmental Research Institute AB and the Stockholm Environment Institute SEI have developed into strategic partnerships, which emphasises how sustainability is a strategic issue at KTH.

Regarding the objective stipulating that a stronger picture of KTH as a leading technical university in sustainable development shall be conveyed through communication, dialogue and interaction with the surrounding community, it is difficult to assess the extent to which the objective was achieved with the measures implemented in 2019. Student recruitment in 2019 strengthened the links between the education programmes and the global goals for sustainable development in the programme prospectuses, on the website and via social media campaigns. KTH Innovation analyses ideas received from researchers which provide help to researchers, students and other employees based on the global sustainability goals. In this way KTH is working to support innovations and the global sustainability goals. Of the approximately 300 ideas which are received each year, about 70% contribute to at least one of the goals. During 2019 KTH was mentioned in approximately 4,600 national and international editorial media outlets in connection with sustainable development – an increase from approximately 3,200 in 2018. 36% of KTH's total media exposure in 2019 was related to sustainable development, an increase from 27% in 2018. The increase was mostly due to an increase in international recognition. 18 press releases were issued in Swedish, which is down on 2018, and seven in English. This is an increase on 2018.

In order to achieve the sustainability objectives there is a need for increased efforts to raise visibility of KTH work linked to sustainable development and for sustainable development to be integrated in KTH collaboration with partners at an earlier stage.

### Examples of what we have done

- A project funded by Vinnova focused on how strategic partnerships at KTH can strengthen their sustainable development profile.
- Financial support for collaboration and student projects at KTH.
- KTH participated in many sustainable development networks, including SDSN-NE, the Nordic network NUAS and the international network ISCN for sustainable campuses, the network for sustainable business and the Fossil Free Sweden initiative.
- Researchers from KTH are part of the Swedish Circular Development Delegation, the National Innovation Council, the Swedish Climate Policy Council and the Agenda 2030 delegation.
- Further development of collaboration agreements with a focus on ESD with SEI, IVL and Akademiska Hus.
- In order to disseminate information to interested parties, internal and external newsletters are issued and a blog written by the Vice-president for Sustainable Development is published.

## KTH campuses

### Key global goals for sustainable development

The objectives for KTH campuses reflect a number of the global sustainability goals, including Goal 7 on energy efficiency, Goal 11 on sustainable cities and communities and Goal 12 on responsible consumption and production.



Image 4 UN global goals for sustainable development, goals 7, 11 and 12

### KTH overall sustainability objectives 2016-2020

- KTH's campuses shall be sustainably developed and managed. Ecological and social values shall be preserved and strengthened.



- The highest environmental performance must be sought when constructing or renovating facilities and buildings.
- KTH's energy consumption shall be reduced by 10 % (electricity, district heating and cooling) per full-time employee equivalent, per full-time student equivalent and per square metre.
- The use of sustainable means of travel and transport to, from and between our campuses shall increase.
- KTH shall increase the knowledge of and have a safe and effective management of hazardous waste.
- Appropriate conditions for sorting all relevant waste fractions should be fully available at KTH, the amount of waste per person shall decrease and the sorted waste shall increase.
- KTH's campuses shall be used in education, research and collaboration for sustainable development.

The objective of reduced energy use was not achieved. In 2019 measures were implemented, however, in conjunction with Akademiska Hus and energy savings have been estimated at 1,142,900 kWh. This cannot be seen in the figure on the right, since information for 2018 was not available for one of the KTH campuses, which means that energy use appears higher than in 2018. Examples of measures which combined to produce a saving are a switch to float glass in windows, new management and control systems, change of heat recycling batteries and lighting measures.

During 2019 verification of a building on KTH Campus went through with Green Building (Miljöbyggnad) Gold certification and another building on Campus Flemingsberg went through with Green Building Silver certification.

KTH has followed the campus plan (2018-2023). Environmental and sustainability aspects were included in every project in 2019. A project report was compiled for each project showing which of the UN global goals and the KTH sustainability objectives the project related to. For example, the Albano project is strongly based on the KTH Campus Plan.

There was collaboration with landlords regarding increased energy efficiency. Agreements were signed with Stockholm Exergi and Akademiska Hus regarding the purchase of a small amount of district heating from a pilot project which produced negative greenhouse gas emissions. A new agreement has been signed with Akademiska Hus regarding recycling of surplus heating from KTH.

Projects for improved sorting at source at KTH have been running, for example sorting of waste food and packaging has taken place at a number of schools. Refurbishment of sorting at source receptacles, uniform signage and refurbishment of waste areas. Collection of waste statistics has been improved.

### Examples of what we have done

- There are four beehives on KTH Campus which produced a 130 kg of honey in 2019.
- There are twelve garden boxes available for employees on KTH Campus KTH Flemingsberg. Six of the boxes were used during the winter by ABE School for teaching about soil improvement.
- Two recycling days for students and employees, spring and autumn, were arranged in collaboration with Stockholm Municipality.
- A bicycle day was arranged on KTH campus.
- Support for uniform, full-scale sorting at source.
- Beginning to introduce food waste into operations.

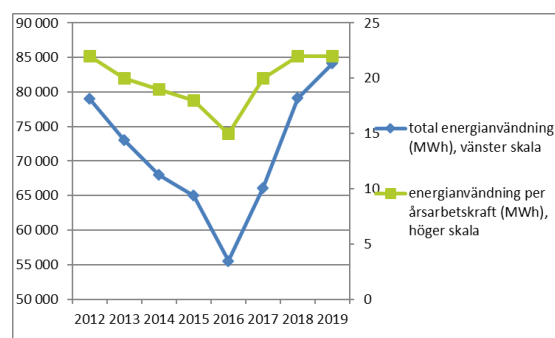


Figure 3. Total KTH energy use (blue line, left axis) and per full-time employee per year (green line, right axis) 2012 – 2019.

- Inventory and identification of future sorting at source at KTH Library.

## Travel

### Key global goals for sustainable development

The KTH sustainability objective regarding travel is directly related to UN Global Goal 13, Climate Action.



Image 5. UN global goals for sustainable development, goal 13

### KTH overall sustainability objectives 2016-2020

- Achieve a 20% percent reduction in carbon emissions resulting from business travel per full-time employee equivalent.
- KTH shall increase knowledge of and create conditions for IT solutions for travel free meetings.

The target of achieving a reduction in carbon emissions has not been achieved, though emissions did fall between 2018 and 2019. There is a large amount of travel at KTH, which is impacted by variations in research projects and collaboration and so on. However, in 2019 emissions fell by 420 tonnes compared with 2018, which is the equivalent of a reduction of 12% per full-time employee equivalent per year. This reduction is a break in the trend of carbon dioxide emissions from business journeys which had increased yearly from 2015 to 2018. Air travel of over 500 km is the main cause of emissions. The measured number of digital meetings between 2018 and 2019 rose from 8,285 to 13,055, an increase of 58%.

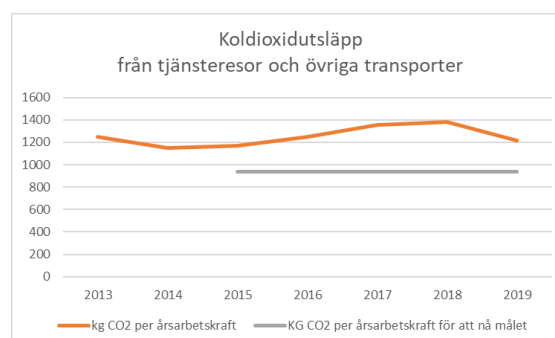


Figure 4. Total carbon dioxide emissions from KTH business travel in kilograms per full-time employee equivalent per year, 2012 – 2019, compared with emissions to achieve target values.

Business trips with the employee's own car and with rental cars fell, both in Sweden and abroad. The total number of train journeys increased by over 1,000, a 19% increase over 2018. Emissions from flights shorter than 500 km show a reduction, which calculated per full-time employee equivalent per year represents a reduction of 5% and flights over 500 km fell per full-time employee equivalent by 10% from 2018.

### Examples of what we have done

- There has been increased collaboration with the KTH travel office and with KTH researchers which has resulted in improved statistics and reporting on emissions from business travel.
- Staff have received training about digital meeting technology which has resulted in a more than 58% increase in the use of digital meetings.
- A central management programme for reduced emissions from travel has been decided upon by the president.
- A climate fund has been implemented where funds from respective schools' basic grants are earmarked for projects which reduce emissions and contribute to the KTH sustainability objectives. The size of the climate fund allocated to each school is based on what travel the school does.
- A large travel project, CERO, *Climate and Economic Research in Organisations*, which includes both business travel and commuting was continued in conjunction with a researcher and expanded with representatives from the schools.
- KTH participated in the REMM project.
- In offering a tender for a new travel bureau, KTH set new sustainability requirements, for example improving the opportunities for booking train travel in Europe.



## Purchasing and procurement

### Key global goals for sustainable development

The KTH objective for purchasing a procurement is directly linked to target

12.7 to promote public procurement practices that are sustainable and relates to all the UN global goals.



Image 6. UN global goals for sustainable development, Goal 12.

### Sustainability objectives 2016-2020

- Sustainability requirements shall be stipulated in all procurements, calls and purchases, where possible. Sustainability requirements shall be continuously evaluated and developed.

The objective has been achieved in part. Procedures and working practices are being developed and new environmental requirements have been created. The proportion of procurements stipulating environmental requirements has fallen, however, (see figure 5). Based on financial value, environmental requirements were placed on 45% of the procurements in 2019, compared with 51% in 2018. The number of agreements in the agreement database has probably increased to a greater extent where it is stated whether or not environmental requirements were stipulated (in a number of cases a *yes* or *no* was not given to this question), which may be a reason why the figures fell to an extent in 2019 compared with previous years.

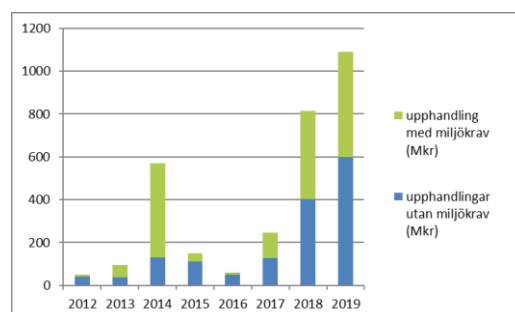


Figure 5. Proportion of procurements respectively with and without environmental requirements (million SEK) per year 2012 – 2019.

### Examples of what we have done

- A central assessment of which planned procurements for 2019 it would be relevant to impose environmental requirements on has been carried out.
- There has been collaboration with the schools and the administration regarding the implementation and monitoring of environmental requirements in procurements.

## Management of chemicals

### Key global goals for sustainable development

The KTH objective for management of chemicals is linked to global goal 3 concerning health and target 12.4 concerning environmentally sound management of chemicals.



Image 7. UN global goals for sustainable development goals 3, and 12

### KTH overall sustainability objectives 2016-2020

- KTH shall increase knowledge of and create conditions for an effective management of chemicals from safety, environmental and health perspectives.

The objective has been achieved in part. The development of combined organisational structure for management of chemicals at KTH was carried out during the year but was not completed. The schools have now harmonised action plans for the sustainability objectives, including the management of chemicals objective, whereby common general measures have been developed. More detailed measures are required. Many targets for the period are in progress or will begin and finish in 2020.

## Examples of what we have done

- The procedure for administration of environmental legislation was updated to improve and harmonise administration throughout KTH.
- Eight administrators were given training in the chemical management system KLARA.
- 27 employees were given training in risk assessment.
- Two members of staff were given clearance to carry out quality audits in the chemical management system KLARA.
- Ten training courses were carried out under the auspices of CBH School, whereby the staff received knowledge about how the system functions, what it is possible to do with it, how to inventory chemicals in a good manner and how to carry out risk assessments.
- The CBH School (Chemistry, Biology and Health) contributed help and knowledge about KLARA and the barcode application for the introduction of the barcode application in other schools at KTH.
- Continued work on phasing out CMR substances.
- In the planning for the renovation of the chemicals laboratories, issues of safety, environment and health were stressed.
- The KTH lab safety network was set up by the CBH School, where KTH staff can share knowledge and experience so that it is disseminated through the institution.
- A combined introduction to lab work for new staff was introduced in the CBH School in order to increase awareness of lab safety.

## Donation and foundation management

### Key global goals for sustainable development

This objective may potentially be linked to all the global sustainability goals.

### KTH overall sustainability objectives 2016-2020

- Funds of KTH's affiliated foundations and donations shall be invested so that they contribute to sustainable development.

The objective has been achieved in part.

Monitoring of the sustainability objective shows

that the capital which is managed on behalf of KTH has no links to fossil fuel investments, with the exception of 0.54%. This is approximately the same level as the previous year when the percentage was 0.56%. In order to achieve the objective development work must be carried out with criteria and working methods.

## Examples of what we have done

- There was collaboration with the asset managers to exclude companies who work with the extraction of fossil fuels.
- KTH participated in the arrangements for sustainable investments and fund placements.



Image 8. UN global goals for sustainable development

## Organisation and management

### Key global goals for sustainable development

The global goal which is primarily related to this area is goal 17 "partnerships for the goals". This KTH goal relates indirectly to the other 16 global goals. It is important for the implementation of all 17 global goals that there be an organisation and management with the will to contribute to sustainable development.



Image 9. UN global goals for sustainable development

### KTH overall sustainability objectives 2016-2020

- Environmental and sustainability issues shall be integrated into regular activities and operations and be included in all relevant processes, plans and decisions.

The objective has been achieved in part. During 2019 a survey was carried out of steering documents at KTH to identify to what extent environment and sustainable development are present in them and how and where environment and sustainable development should be integrated. In order to achieve that objective it is necessary that sustainability issues be more clearly integrated in, for example, the ordinary operational planning and budget preparation of the schools and university administration.

### Examples of what we have done

- In the schools and the university administration there has been an updating of ESD management functions. This was based on a clearer indication of where in the chain of command responsibility lies. Sustainability is not a project, but something which should be integrated into daily work.
- An audit of KTH sustainability policy has been carried out.
- An overview has been carried out of the administration's environmental management systems, based on the reorganisation carried out in 2019.
- The central ESD work was strengthened leading to a more efficient and standardised support for the schools and university administrators.
- Within the framework of the KTH planning and budget procedure, the schools established action plans with measures to achieve the sustainability objectives.
- Together with the updating of the KTH rules of procedure and decision making, responsibilities for environmental work have been clarified.
- Work on integrating environmental and sustainability work in various steering documents, such as the schools' programme analyses and school reports has continued.

Images 1 -9

I assume we will use the original images and text from the UN as below.



The original text is as follows: (Please note I have used these throughout and not translations from the Swedish. In some cases there is a significant difference between the Swedish version and the English version)

GOAL 1: No Poverty

GOAL 2: Zero Hunger

GOAL 3: Good Health and Well-being

GOAL 4: Quality Education

GOAL 5: Gender Equality

GOAL 6: Clean Water and Sanitation

GOAL 7: Affordable and Clean Energy

GOAL 8: Decent Work and Economic Growth

GOAL 9: Industry, Innovation and Infrastructure

GOAL 10: Reduced inequalities

GOAL 11: Sustainable Cities and Communities

GOAL 12: Responsible Consumption and Production

GOAL 13: Climate Action

GOAL 14: Life Below Water

GOAL 15: Life on Land

GOAL 16: Peace, Justice and Strong Institutions

GOAL 17: Partnerships for the Goals