

Mapping Faculty Research to SDGs: Experiences, Challenges, and Recommendations


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**Carnegie
Mellon
University
Qatar**

**ECO
CAMPUS**

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ABAAE



ESELx, Campus do IPL, Benfica

Carnegie Mellon University in Qatar



Branch campus of
CMU-Pittsburgh

Member of Qatar
Foundation

Established in 2004

Offers 4
undergraduate
degrees

450+ students
enrolled

70+ faculty members

200+ staff members

EcoCampus at CMU-Q

The EcoCampus committee was launched in September 2020 and aims at implementing the United Nations' Sustainable Development Goals (SDGs) on campus by hosting various informative events centered around sustainability.

The EcoCampus **Sustainability Charter** was signed by CMU-Q Dean, Professor Micheal Trick, on **Earth Day 2024**, recognizing the value of such initiative and its role in raising awareness around sustainability on local and regional levels.

One of the EcoCampus initiatives is the SDG mapping for faculty members research and teaching activities.



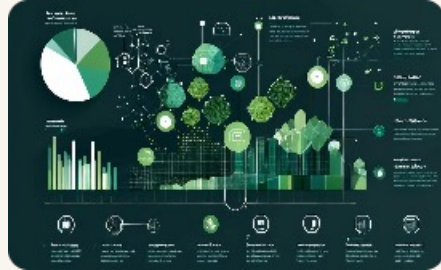


HEIs and SDGs

Higher education institutions are central to the SDG movement ([Blessinger et al., 2018](#); [El-Jardali et al., 2018](#); [Purcell et al., 2019](#)), yet they are still grappling with the adoption of the SDG goals and implementation within their campuses.

According to the FEE EcoCampus Handbook 2.0 (2020), "it is essential that an HEI in the FEE EcoCampus program is working to engrain principles of sustainability and the SDGs into the curriculum, research targets and external communication alike" (p. 24).

The Mapping Process



I. Mapping Faculty Research Outputs

SDG coordinators collect, verify, and consolidate faculty publications using the library databases.

Data is collected for each faculty member and records are cleaned using pre-defined criteria.



II. Create Dashboard for Visualization

EcoCampus collaborates with IS department to integrate the SDG mapping project into a course 67-373 where students develop a dashboard using Tableau to create a visualization platform.



III. Mapping Faculty Syllabi for Teaching

SDG coordinators analyze faculty syllabi to identify themes related to SDGs.

SDG coordinators interview faculty members to verify course outcomes and how they contribute to EcoCampus mission.



IV. Update Dashboard to Include Teaching

EcoCampus collaborates with IS department to work on building on the previous dashboard by creating another component that represents faculty teaching activities using the same visualization techniques.

Databases Used for Mapping Faculty Research



Why Mapping Faculty Research to UN SDGs?



Conversation Starter

- Determine what type of research faculty are undertaking
- Identify how these research interests contribute to SDGs
- Allow students to engage with their faculty



Increased Visibility

- Disseminate faculty research externally
- Emphasize the university's commitment to sustainability
- Encourage national, regional, and international collaborations

Interactive Dashboard Design and Implementation

1

Data Collection and Curation

The first step in creating the dashboard was to gather relevant data, ensuring accuracy and completeness.

This involves collaborating with faculty members from the library to introduce the needed databases to accomplish data harvesting.

2

User Interface Development

Once the data is collected, the next phase involves designing the visual representation and user interface of the dashboard.

This step is crucial for ensuring that the information is presented in a clear, accessible, and visually appealing manner.

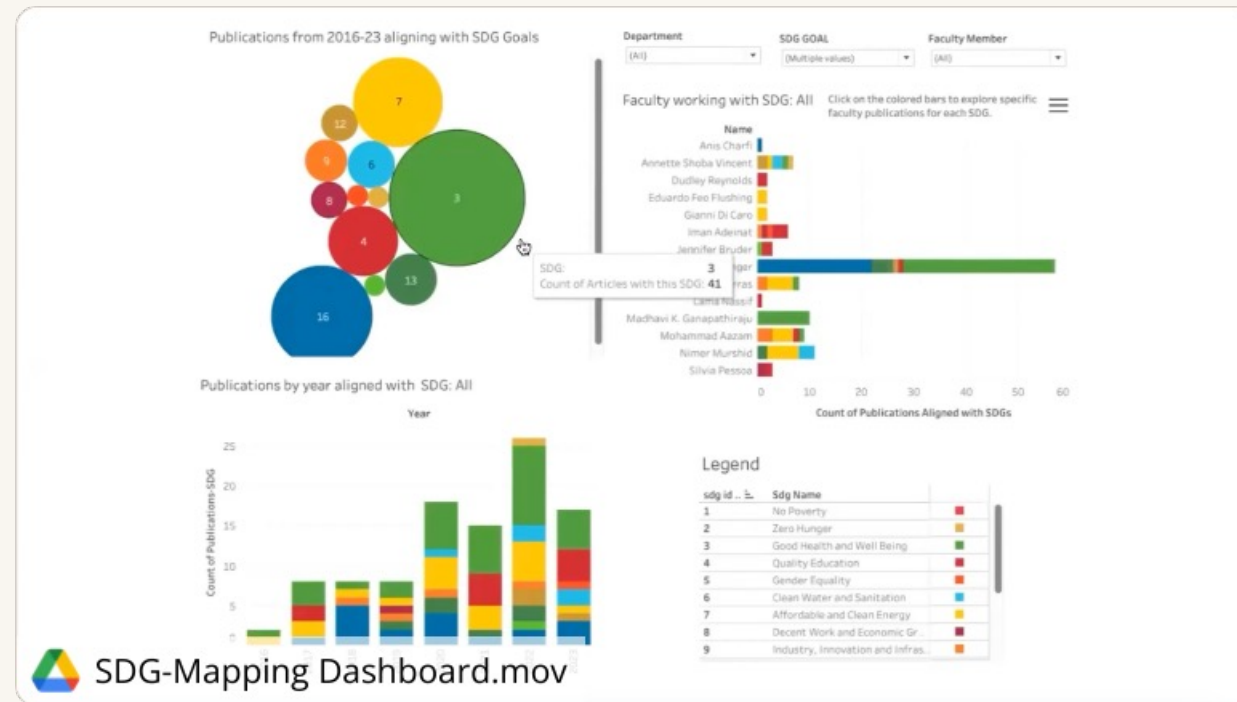
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Feedback and Iteration

After the initial dashboard design, feedback from EcoCampus members is essential for refining and improving the interface.

This iterative process ensures that the dashboard meets the needs and expectations of EcoCampus.

Dashboard Demo



Summary of Dashboard Design, Functionality, and Usability

- The visualization consisted of bubble charts, graphs, and links to faculty publications between 2016 and 2023 and their corresponding SDG.
- Filters allow users to search for publications by departments, SDGs, and faculty members.
- Additional features using articles' DOI allow users to access the full-text of a specific publication.
- The colors used for each SDG correspond to the official color palette of the [United Nations SDG Color Wheel](#).

Challenges, Opportunities, and Recommendations

3

Challenges

- Databases inconsistently index SDGs
- Manual verification and cleaning of the data
- Maintenance of the dashboard

3

Opportunities

- Promote connections between diverse university stakeholders
- Raise awareness of SDGs in research
- Visibility promotes and inspires others to engage

3

Recommendations

- Run user tests
- Leadership support is critical
- Ensure technical support

What is Next?

Complete Phases I and II by:

- Adding publications prior to 2016
- Applying manual verifications of publications that are not indexed under SDGs by databases

Start Phases III by:

- Mapping faculty teaching activity through analyzing their syllabi

Share the results of the SDG mapping with CMU-Q community by:

- Engaging in regular communication around faculty courses and SDG implementation
- Encouraging faculty to see how their research and teaching activities connect to SDG and the ultimate goals of EcoCampus.

Questions?

Thank you!



References

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