NAVIGATING UM'S NETWORK OF SUSTAINABLE ACTORS

A social network analysis on the role of the university in achieving the UN SDGs

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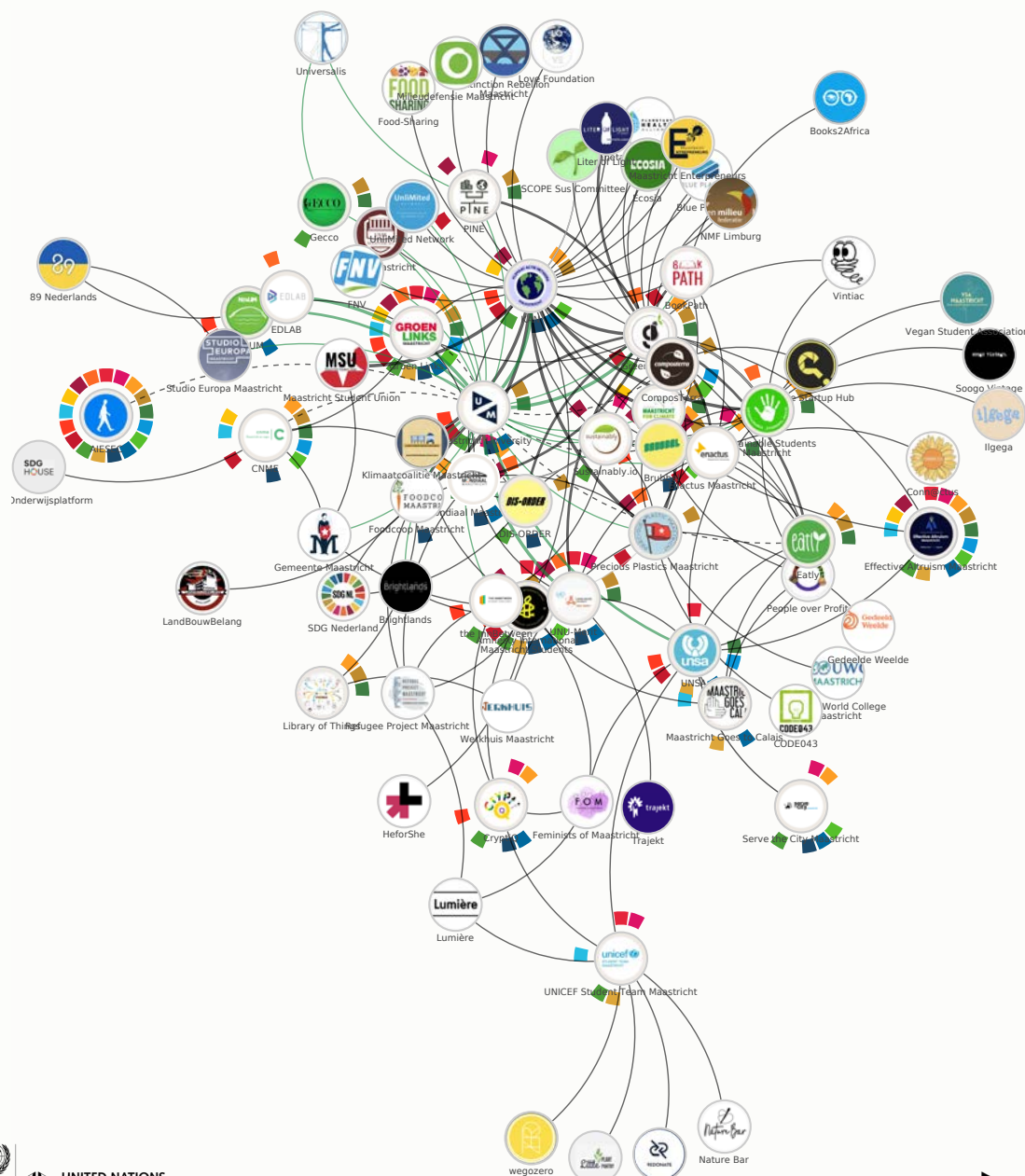
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Executive Summary

This MaRBLe research team was commissioned by the Climate Innovation Hub (CIH) based at the Lab of the United Nations University MERIT to investigate Maastricht University's (UM) role in the network of sustainable actors in achieving the UN SDGs in a local context. More specifically, the researchers were asked to examine how UM improves overall sustainability and how a Social Network Analysis (SNA) can contribute to understanding the needs for effective collaboration among sustainable actors in Maastricht.

In response to these questions, literature on universities' role in sustainable development was reviewed, a survey was spread, and interviews were conducted. Ultimately, the researchers could map out Maastricht's sustainability network, with UM, the Green Office, and KAN Party being the main hubs. In total, the network map includes 77 sustainability actors, most of whom are present in Maastricht. This network map is publicly accessible and allows filtering for SDGs tackled and finding the most relevant information about the network's sustainable actors. Thereby, the researchers intend to facilitate collaboration among sustainability actors and provide an overview of the organisations present in the network. Furthermore, the network is dynamic; therefore, it is possible to update it as its geography changes.

The SNA revealed that at this moment in time, UM has 31 ties to sustainable organisations in Maastricht, the average strength of partnership being indicated as strong (>60/100).[1] Thereby UM plays a central role in Maastricht's sustainability network. The university promotes and advances sustainability in Maastricht by producing knowledge, integrating sustainability in its structure, and supporting local organisations with various types of capital. Examples of this are applying a new sustainability policy and vision at UM, SUM2030 (Sustainable UM 2030), implementing the UM-wide minor on sustainability, opening the Sustainability Hub, and creating research funds for research on sustainability.

Hence, UM has highly invested in sustainability in its internal structure. Nevertheless, actors in the local network find that UM still lacks sufficient dedication to making a robust and concrete transition to reach its targets by 2030 (Lehnard & Leppert, 2022). This is also reflected in obstacles perceived by sustainable actors in partnerships with UM. For instance,

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[1] Based on the subjective perception of the interviewees and survey participants

collaboration with UM could be more effective if more resources were provided in terms of staff, time, and funds. In other words, sustainability should be a central priority in UM's operations. To tackle these obstacles, recommendations provided to UM have been brought forward by the research participants. The recommendations aim to offer UM suggestions on how to tackle these obstacles. Improved partnerships and collaboration will ultimately improve performance on sustainability and achieve the UN SDGs in a local context.

Keywords

Sustainable Development Goals, Sustainability Network, Maastricht University, Social Network Analysis

Abbreviations

UN = United Nations

SDGs = Sustainable Development Goals

SNA = Social Network Analysis

UM = Maastricht University

SUM2030 = Sustainable UM 2030

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Accessible network map: https://rb.gy/emi2cf

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1. Introduction

The discourse on sustainability and environmental protection has become increasingly important over the last decade. In that context, the United Nations Member States adopted an Agenda for Sustainable Development in force until 2030 (UN, n.d.). At the heart of the agenda are 17 universal Sustainable Development Goals (hereafter: SDGs). They present an urgent call for action to counteract existential global threats humanity is already experiencing: a changing climate, a polluted environment, and humanitarian crises arising from unresolved conflicts, poverty, and inequality (IPCC, 2021). The guiding principle of the 2030 Agenda is to enable a dignified life worldwide while simultaneously preserving the natural foundations of life in the long term: this encompasses economic, ecological, and social aspects. However, the sustainable transformation of lifestyles requires a process of social reorientation in which new structures, technologies, and environmental consciousness must be established. To bring about such progress, actors at all levels should take joint responsibility (Kapsalis & Kapsalis, 2020). In this pursuit, collaborations must be seen as a central tool and ultimately a driver for responsible, inclusive, and sustainable transitions.

Here, universities play a strategic role. They have always exerted considerable influence on shaping the visions of future societies and are places with the potential to raise awareness for socially relevant issues, generate technical innovations, and lay the foundation for the networking of interdisciplinary knowledge. The first steps towards sustainable societies are already reflected in the recent developments at universities: new boards are being created with sustainable and environmental orientation, and courses of study are increasingly anchoring the subject matter in their teaching content.

At Maastricht University (hereafter: UM), the responsibility and potential to bring about sustainable change have been recognised. Consequently, the university has decided to integrate the UN SDGs into the DNA of the entire organisation by 2030. Four out of the 17 SDGs have been chosen to be in particular focus. These are SDGs 3 Good Health and Wellbeing, 4 Quality Education, 13 Climate Action, and 16 Peace Justice and Strong Institutions (SUM2030, 2020). Therefore, the research questions which frame this research project are (Table 1):

Q1	Which role does UM play in the network of local sustainable actors in achieving the UN SDGs in a local context?
Q2	How does UM improve overall performance on sustainability?
Q3	How does a Social Network Analysis (hereafter: SNA) contribute to understanding the needs for effective collaboration among sustainable actors in Maastricht?

Table 1: Research questions

The research questions framing this research are tackled using quantitative and qualitative methods. While quantitative data was collected through close-ended survey questions, qualitative data was gathered through open-ended survey questions as well as interviews of key actors within the sustainability network. This mixed-methods approach provides insights into the network of sustainable actors in Maastricht and how they relate to UM. Building on this information, Maastricht's sustainability network and actors' connections with each other and UM are mapped. The result is a network of 77 sustainability actors, which is ultimately examined through a Social Network Analysis (hereafter: SNA).

The central claim following the network analysis is that UM plays a central role in promoting sustainability by producing knowledge, integrating sustainability into its structure, and supporting local initiatives by providing different types of capital. As part of its efforts to meet these goals, UM has created the Sustainable UM2030 Taskforce, which includes researchers, teachers, faculty liaisons, and policymakers (Maastricht University, a, n.d.). To increase its impact on society, UM aims to develop cross-sector partnerships. For this reason, UM is a significant hub in Maastricht's sustainability network. Nevertheless, the analysis of the data also reveals that overall performance on sustainability can still be improved by making sustainability the primary pillar of UM's activities.

1.1. Social and Academic Relevance

The academic relevance of this research lies in the provision of a duplicatable methodological approach to map a local sustainability network with a focus on university partnerships. Moreover, the SNA conducted for this report is relevant in that it helps to understand how

collaboration, particularly a university's ties with local sustainability actors, can effectively increase performance on sustainability overall. Consequently, this research contributes to the body of knowledge of universities role in sustainable development, as exemplified by UM. For UM, this research's results further serve as a guide to increase sustainability through collaboration and what it needs to change as an institution to have more effective ties in the network. Ultimately, the recommendations offered can help UM improve its position as a sustainable university.

The social relevance lies in the accessibility of the network map. Via the following link: [https://rb.gy/emi2cf], organisations and individuals can access information about Maastricht's sustainability network and its actors. This enables individuals to find meaningful opportunities to get engaged and organisations to connect amongst themselves. For instance, actors can look at the map and filter for relevant SDGs. As a result, they will find all actors working towards the selected SDG. The use lies in the ability to filter for potential partners in the network and conclusively enter purposeful partnerships, enhancing the impact and performance towards tackling various SDGs. Creating this map aims to increase overall sustainability performance in Maastricht by facilitating closer and more effective collaboration.

2. Key Concepts

2.1. Sustainable Development

Sustainable development today describes a way to keep the world in balance. It implies that countries, states, or regions develop in ways which serve the needs of current generations without endangering the opportunities and resources of future generations (Brundtland Report, 1987). Sustainable development aligns with the three pillars of sustainability, namely economic, social, and environmental aspects (Purvis et al., 2018). These three components are explicitly embedded in the formulation of the SDGs and should all be tackled equally to bring about sustainable change (UN, 2012).
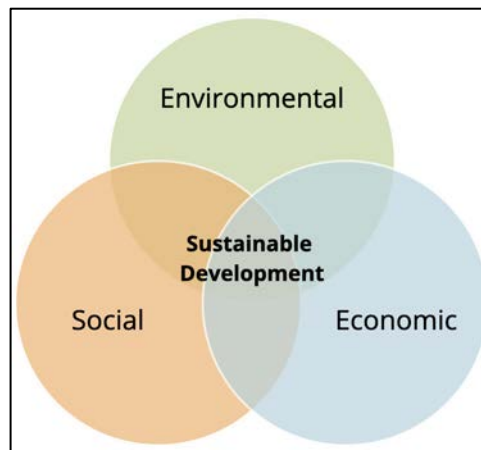
Figure 1: Sustainability as three intersecting circles (in accordance with Purvis et al., 2018)

This is crucial because the consequences of human behaviour pose serious environmental challenges, including climate change and ocean overfishing, but also social and economic dilemmas such as hunger, poverty, and inequality. Particularly concerning the environment, everyone is involved due to making more or less use of the earth's limited resources. Thus, the concept of sustainability affects everyone and all areas of everyday life. Accordingly, sustainable transitions become the task of society as a whole. Sustainable development must be a top priority on all levels, from individuals incorporating it into their daily lives to governments considering it in their decision-making. Overall, the development of countries and societies must be ecologically compatible, socially just, and economically efficient. Since sustainable development is an international issue, 17 goals were adopted in 2015 as part of the United Nations' 2030 Agenda. The so-called 'Sustainable Development Goals' (hereafter: SDGs) came into force on January 1, 2016 (UN, n.d.)

2.2. Sustainable Development Goals (SDGs)

The 2030 Agenda includes 17 sustainable development goals aiming to transform the world positively and sustainably. These were decided on by the United Nations in 2015 after years of research and intend to enable a dignified life worldwide while at the same time preserving

the natural basis of life in the long term (UN, n.d.). The 2030 Agenda was drafted as part of the development processes of the Millennium Development Goals (hereafter: MDGs). In contrast to the MDGs, which only referred to developing countries, the SDGs include the participation of all countries. They are aimed at states, civil society, businesses, sciences, and all citizens.

In total, there are 169 sub-goals for these 17 goals, which specify the implementation of the 17 SDGs. The goals notably intend to ensure economic growth in the participating countries and secure peace. Corruption is to be fought, and disparities in living standards are to be reduced. In addition, equal opportunities should be created for all people across national borders. The protection of human rights is also a central component. Sustainable development, therefore, aims to enable economic prosperity, ensure social balance, and preserve the natural basis of life for future generations. Universities are centres for innovation and training of future decision-makers. Therefore, they play a central role in implementing the UN Sustainable Development Goals (SDGs).

Figure 2: Overview of UN SDGs

Part III: Theoretical Framework

3. Theoretical Framework

The research concerns itself with the place and role of UM within Maastricht in terms of improving performance on sustainability and achieving the SDGs. It seeks to understand the extent to which it is possible to assess university activities for partnerships with respect to achieving the SDGs in a local context. For this, various theoretical approaches are combined namely the Quintuple Helix (Carayanis, Barth & Campbell, 2012), the Social Tipping Points (Otto et al., 2020), the Civic University (Goddard, Kempton & Vallance 2012), and building networks for partnerships and collaborations with the theory of Social Capital (Lin, 2001).

3.1. The Quintuple Helix Framework

The *Quintuple Helix* framework shines light on the role of knowledge and know-how circulation through five sub-systems of society (education, economic, natural environment, media and culture based public, and political system). These affect one another, trigger innovations, and can improve overall performance on sustainability in society (Carayanis, Barth & Campbell, 2012). The framework builds upon previous theories namely the *Triple Helix* which models the synergism between university, industry, and government relations (Leydesdorff & Etzkowitz, 1998). Through their interactions, the three institutions alter and reconstruct each other. They create a network of relations through which they become ever more dependent, creating a knowledge-based economy. A university-industry nexus is the breeding ground for technological innovations and niche developments. When combined with government actions and objectives to promote certain goals, sustainability, policies contextualise technological innovations to fulfil the specific objective (Leydesdorff & Etzkowitz, 1998). The synergy of university-industry-government activity creates mutual expectations for partnerships and collaborations thereby modifying their independent functioning.

The *Quadruple Helix* supplements the Triple Helix with a consideration for the public, specifically media-based and culture-based public. This encompasses creative industries and the system of norms and values (Carayanis & Campbell 2012). The new dimension highlights the role culture plays in supporting and disseminating innovations which stem from the university-industry-government synergy onto a larger societal stage. Culture and creativity coming from the media-based and culture-based public sub system also affect the university-

industry-government synergy: The mix of underlying values in a multicultural society need to be considered in policies contextualising the drives for innovation (Carayanis & Campbell, 2012). Innovations need to be socially accepted by the various and diverse groups present in society.

The *Quintuple Helix* framework builds upon the two previous frameworks by supplementing the natural environment subsystem in society's entire system. It illustrates the crucial role of knowledge (input) and know-how (output) through the various subsystems of society. Their combined development and alteration develop innovations in each subsystem. Joined, they have the potential of improving overall societal performance on sustainable development (Carayanis, Barth & Campbell, 2012).
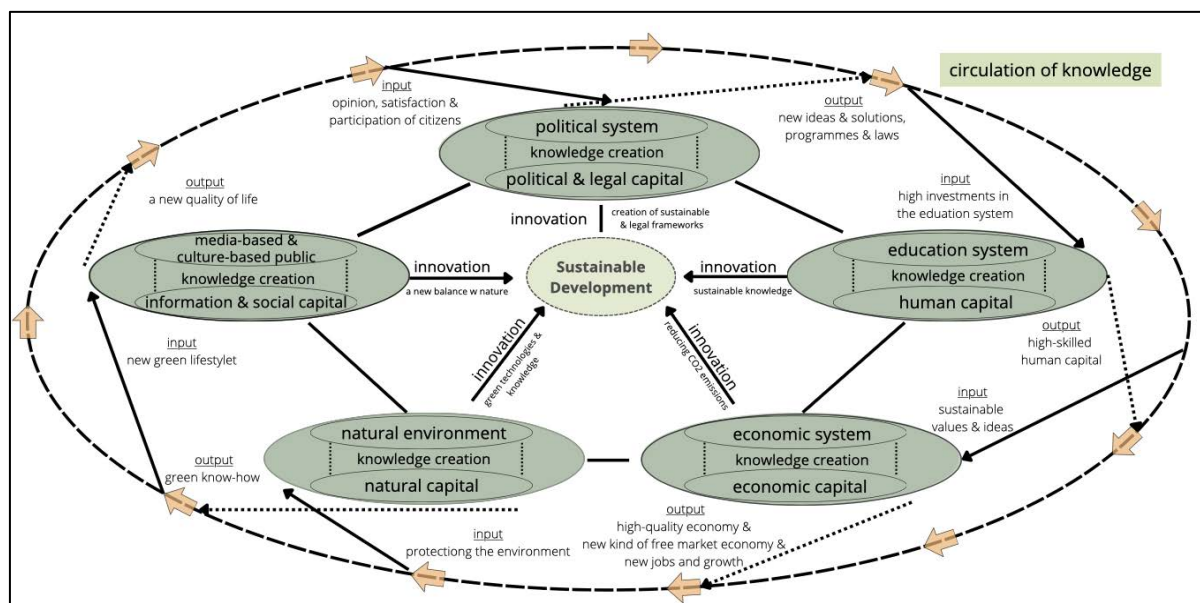
Figure 3: Functioning of the Quintuple Helix Framework (in accordance with Carayannis, Barth & Campbell, 2012)

The theory posits that an initial investment to promote sustainable development in the educational system will create a sustainable know-how. This know-how will ultimately be transferred to the following subsystem. First, the initial input in the knowledge creation activities of the principal actors of the education system, universities, through their knowledge creation activities (research and teaching), will produce an output. This output consists of science, research and technology innovations that inform the available human capital with sustainable know-how, skills, and practices (Carayannis, Barth & Campbell, 2012).

The sustainably informed human capital will enter the economic system and alter it by pushing it to encompass sustainable modes of production and consumption or *future*

sensitive modes of operation (Carayannis, Barth & Campbell, 2012). In other words, it paves the way for a 'greener economic growth', integrating corporate social responsibility practices and social and sustainable entrepreneurship principles. Ultimately, it creates new and more sustainable products and services.

Moreover, sustainable economic practices have a direct impact on the natural environment. The sustainable output of the economic system, namely future sensitive economic practices, and innovations, such as regenerative technologies, promotes the protection and preservation of the natural environment. This happens through sustainable forms of production and consumption, which are less environmentally harmful and green-house gas emitting. In turn, they enable the strengthening of natural capital, and in the best case, aid the mitigation and adaptation to climate change (Carayannis, Barth & Campbell, 2012).

Consequently, a strengthened natural capital or a *green know-how* is the input to the subsystem of media-based and culture-based public. The heightened awareness of environmental challenges, knowledge about natural processes, and the need to preserve them in the face of climate change can alter lifestyles. Lifestyles are prompted to follow future safe pathways. This is made possible through the pivotal role of media in providing mass information to the general public (Carayannis, Barth & Campbell, 2012). Subsequently, media strengthens a green consciousness and forms a sustainability-informed social capital.

This new social capital communicates its wishes, concerns, and needs to the following sub-system: the political subsystem (Carayannis, Barth & Campbell, 2012). Through a sustainable shift in lifestyles, essential debates on current practices and policies are sparked. These discussions stimulate knowledge creation as an input in the political system, which must be integrated in decision-making.

The embedding of sustainability within the political system creates a political and legal capital informed by sustainability as the output of the political subsystem in the Quintuple Helix (Carayannis, Barth & Campbell, 2012). Eventually, this output again acts as an input for the subsystem the helix started with, namely the education system incentivising additional investments in sustainability. These investments influence and alter through the circulation of knowledge and know-how in all other subsystems of society. The circulation stimulates

innovations and improves practices and performance for sustainability (Carayannis, Barth & Campbell, 2012).

3.2. Theory of Social Tipping Points

The idea of various subsystems within society brings this theoretical framework to *the Theory of Social Tipping Points* by Otto et al., (2020). The author follows Rockström et al., (2009) concept of Planetary Boundaries. Planetary boundaries are ecological boundaries of the earth, exceeding which endangers the stability of the ecosystem and the basis of human life. It also describes the thresholds which should not be crossed to maintain it. If the thresholds are crossed, they will reach a tipping point, after which the biophysical process will enter a new and unknown state. Moreover, crossing the threshold of one biophysical process increases the probability of crossing the threshold of another, further endangering the stability and viability of the earth's climate and ecosystem (Rockström et al., 2009).

Otto et al., (2020) apply this framework to a social setting to illustrate humanity's potential to achieve a worldwide transformation into carbon-neutral societies. This transformation would enable states to meet the Paris Agreement and to remain below 1.5°C of warming compared to pre-industrial times. Moreover, the authors identify social tipping interventions (STIs) which activate processes with the potential of spreading technologies, norms, and behaviour. The interventions reorganise various functional domains of society; the social tipping elements (STEs), which Carayannis et al., (2012) calls subsystems of society. However, Otto et al., (2020) conceptualise these as subdomains of the planetary socio-economic system currently acting harmfully towards the environment. These include financial markets, knowledge systems, values and norms, lifestyles, and human settlements.

Social tipping interventions occur when key actors, influencing a specific control parameter, sufficiently act on it to spark a social tipping element. Once reached, it will be illogical and likely impossible to revert the original and unsustainable state. Similar to what Röstrom (2009) found, crossing the tipping point for one subdomain of the planetary socio-economic system increases the likelihood of crossing another (Otto et al., 2020).

For instance, within the knowledge system, intellectual leaders, scientific community, and media are the key actors and are able to influence the control parameter. This is the

number of people having worldviews accounting for socio ecological complexities. The key actors have the ability to drive the knowledge system to its tipping point. This is the reconceptualisation of economic and valuation measures and the spread of knowledge relating to the gains provided by decarbonisation and indigenous approaches to nature. When the minority's worldviews have sufficiently spread to the majority of key actors, the tipping point will be crossed. Once crossed, it will be illogical and impossible to revert to the original state where socio ecological considerations and worldviews were not embedded within the knowledge system (Otto et al., 2020).

When the tipping point for the knowledge system is crossed, it increases the probability of other systems, such as the values and norms systems or lifestyles systems, to be crossed. Embedding sustainability within the knowledge system alters values and norms through having key actors (spiritual leaders, media, the young generation, and the middle class) perceive fossil fuels as immoral (control parameter). This creates a new set of moral and ethical codes which highlight the moral implications of fossil fuels and stigmatising their use (social tipping intervention). Ultimately, when the views from this minority spread to the majority, the tipping point is reached. In that case, sustainability forms a vital part of a society's system of values and norms, and it is impossible and illogical to revert to the original state where it does not (Figure 4).

Finally, a change in societal norms and values alters the system of lifestyles. If key actors within various carbon heavy industries, or writers, influencers of various types and the media choose to consume fossil-free products (control parameter), they may adhere to plant-based diets, and decrease their consumption (social tipping intervention). Again, views from the minority spread to the majority. Consequently, the change in functioning of societal processes alter and shift global society in a future safe direction (Otto et al., 2020). In this conception no societal system is isolated, they all act and have effects on one another. The key actors of each system have the potential of deeply altering currently unsustainable practices and processes.
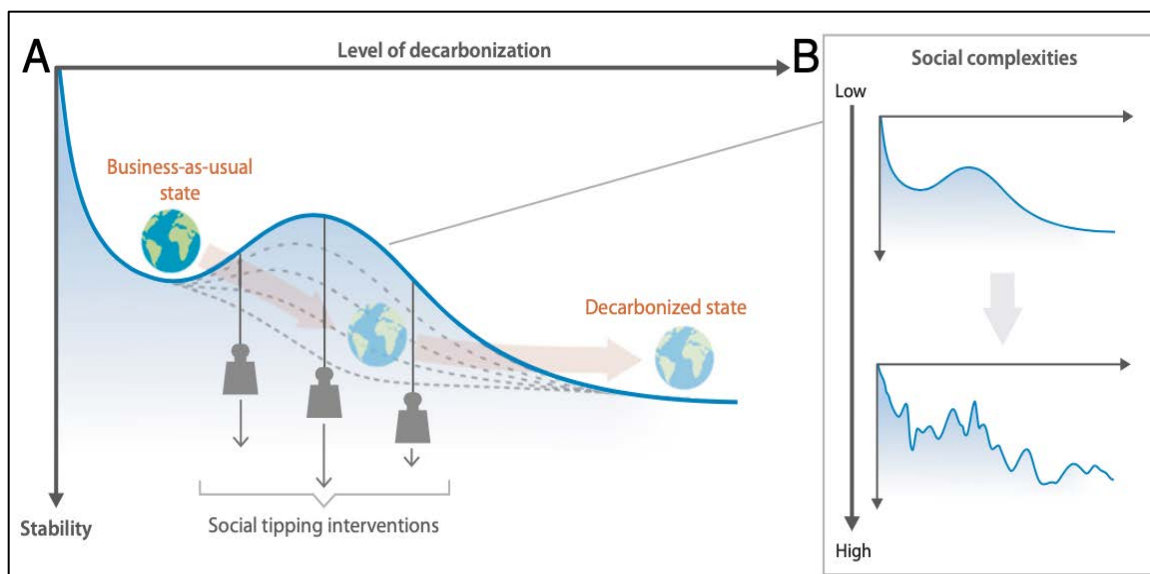
Figure 4: Theory of Social Tipping Points (Otto et al., 2020)

3.3. The Civic University

Similar to the various Helix theories, the *Civic University* as propounded by Goddard, Kempton and Vallance (2012), calls attention to the role universities play in the local contexts they are embedded into. Increasingly, universities *are part of* the cities they are located in and play important, although bounded, leadership roles. These ensure their global competitiveness and local relevance. In this context, universities form part of two separate knowledge communities: the city and the potential for regional development as well as the global institutional knowledge creation community. Both need to be effectively connected to enable the university to play an active role in solving crucial societal issues. One example is achieving the UN SDGs through integrating society and consideration for societal challenges into the academy and knowledge producing activities (Goddard, Hazelkorn, Kempton & Vallance, 2016).

Integrating society into the academy involves providing opportunities for the local society to engage in university activities and the university to wholly engage with its surroundings. It also entails partnering with other local universities and colleges and being managed in a manner which facilitates institutional-wide engagement with the city and local region. Finally, it requires the university to operate on a global scale while using its location to form its identity (Goddard, Kempton & Vallance, 2012).

A civic university combines its educational and research activities with social engagement through transformative, responsive, and demand-led action (Goddard, Hazelkorn, Kepton & Vallance, 2016). Furthermore, a civic university is only as strong as its ability to adapt its institutional structures to contemporary societal challenges and make use of relevant indicators such as the UN SDGs and targets (Goddard, 2018).
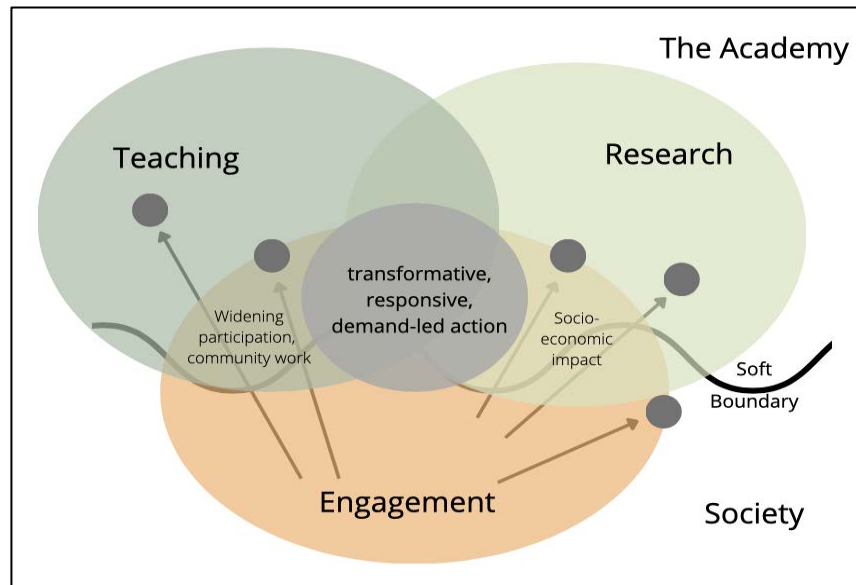
Figure 5: The Civic University (in accordance with Goddard, Hazelkorn, Kempton & Vallance, 2016)

Combining academia and society requires partnerships. Such partnerships most often take place through mutual investment. Investments may take diverse forms and encompass various types of capital: financial capital (economic resources), social capital (access to a network and networking opportunities), built capital (access to infrastructures), and intellectual and cultural capital (access to knowledge and understanding of meanings) (Lin, 2001). Investments of capital are not equal to each other; the various combinations and flows make for different natures and strengths of partnerships between actors. Social capital or the investment in social relations with expected returns, plays a central role in a social network of actors and can sometimes be as useful as financial capital (Lin, 2001). Flows of information take place from the more influential actor holding crucial and relevant information giving access to actors in need of the piece of information. The information is provided if there is a form of mutual recognition. Access to this information provides access to new actors and influential actors who can in turn provide more information or a different type of capital, for instance financial capital. Access to information or influential actors is considered as assets increasing the chances of an actor's survival in a social context. Interactions between actors does not need to be frequent or strong but sufficient to ensure that it remains long lasting (Lin, 2001).

The combination of these intertwining theoretical approaches provides the research with a robust theoretical framework. With it, it is possible to understand the actions and extent to which Maastricht University has and can continue its contribution through partnerships and investments of various natures to achieving the UN SDGs.

Part IV:
Methodology

4. Methodology

Organisations striving for more sustainability and efficiency increasingly rely on formal and informal network relationships. Through these networks, important work towards sustainable transitions is increasingly accomplished collaboratively. Systematic reviews of scientific studies demonstrate that effective networking helps organisations become more innovative and sustainable (Pulford, n.d.)

This research aims to understand Maastricht University's role in the network of local sustainable actors to achieve the UN SDGs in a local context. Specifically, it examines how UM improves its performance and promotes sustainability. Furthermore, it asks how a Social Network Analysis (hereafter: SNA) can provide information and knowledge for effective collaboration among sustainable actors in Maastricht. Subsequently, the research is exploratory. It aims to find the best possible practices for collaborations and partnerships and their potential barriers and difficulties. However, it is also descriptive as the mapping of Maastricht's local network of sustainable actors enables acquiring an overview and description of the network. This information makes it possible to distinguish the most influential actors and the strongest connections within the network.

4.1. Social Network Analysis

A network map is composed of nodes and connecting lines between these nodes. Nodes of the network, whose relationships are examined, are called actors. Actors are, for instance, student organisations, university institutions, corporations, governmental organisations, and civil society organisations. These actors are linked to each other via social relationships, which differ in content and strength. Relationships between actors can be described as strong or weak. The presence of frequent interaction and collaboration is a sign of a strong relationship (>60/100). Conversely, a weak relationship results from only little to occasional interaction (<60/100). Visualising the network provides information about the central actors and their partnerships.

For this research, Maastricht's sustainability network, specifically UM's, is examined, and a SNA is performed. SNA is a social science technique facilitating the identification of actors present in a network and the strength of ties between them. Furthermore, it also helps

understand the indicators for partnerships among network actors and the obstacles that inhibit them (Stokman, 2001).

A survey and semi-structured interviews were used. Interviews with selected key actors served to increase the quality of the data and the analysis by ensuring the correct interpretation of the results. Additionally, data was collected via public websites and actors' social media platforms. The repertoire of IT-based secondary sources provided valuable insights into the network analysis and significant background information to the researchers. With the collected data, relevant networks were visualised and described.

This research made use of mixed methods in a convergent parallel manner. Both qualitative and quantitative data were collected simultaneously. In addition, the entire dataset was analysed jointly. The theoretical framework highlights the possibility of using qualitative and quantitative methods to understand UM's activities in the local network of sustainable actors. Furthermore, the combined approach facilitates understanding how partnerships can improve overall performance on sustainability and achieve the UN SDGs.

Partnerships are composed of elements which can be measured quantitatively. These are the perceived strength of partnership measured by a Likert scale (0-100) or the number of partnerships and collaborations with other actors. Other elements are better accounted for with qualitative methods, namely the goals of partnerships, the best practices in terms of collaboration or difficulties and barriers to partnerships. The research project used qualitative methods rather present in the exploratory aspects of the research and quantitative methods rather present in the descriptive aspects of the research.

Using mixed methods helps objectively assess quantifiable metrics in partnerships and networks, providing a comprehensive overview of its geography. This information gives a better grasp of the network of sustainable actors in Maastricht and the role of UM. It also facilitates the acquisition of in-depth information through qualitative methods on aspects which could not be inferred from quantitative data alone. The mixed-methods approach is complementary and aims to overcome the shortcomings of using either methodology alone (Gray, 2004).

4.2. Research Procedure

4.2.1. Parameters and Network's Boundaries

SNA is composed of different phases. First, concrete indicators for partnerships and the potential for collaboration are identified. These are the exchange of capital between the actors. Data protection regulations were established in this phase, and the ethical approach was clarified. Participants had to be at least 18 years old. Moreover, following the General Data Protection Regulation (GDPR) and the fact that the survey was distributed online, the platform Qualtrics was used. Before starting the interview or the survey, participants were required to complete a consent form ensuring their willingness to share their data and were fully informed of the research's purpose. Participants could withdraw from filling out the survey or finishing the interview at any moment.

In the next phase, the target group and the network's geographic boundaries were decided upon. The network's boundaries are UM and local actors in Maastricht, except for certain outside actors. UM's boundary encompasses organisations or sustainable actors directly associated with the university, meaning they belong to a specific faculty, are managed by UM student employees, or are part of the university itself. Maastricht's boundary extends to actors operating at the local level, such as the municipality or civil society organisations and corporations. However, the ultimate network map includes outer boundary actors who were mentioned as being connected to inner boundary actors in interviews, survey responses and social media searches. This makes them relevant network connections: Ecosia, Blue Plastics, Planetary Health Alliance Club, Books2Africa, HeforShe, Wegozero, and Nature Bar. These external actors are particularly relevant in context with the Sustainability Week organised by KAN Party and the Green Office from the 19th to the 22nd of April 2022. However, they only present a punctual partnership and not one characterised by a continuous exchange of capital.

The network's boundaries have been set with a nominalist strategy, implying that the researchers imposed a conceptual framework for analytic purposes (Heath et al., 2009). The researchers focused on reaching out to organisations actively working towards achieving at least one SDG and having ties to a minimum of one other sustainability actor. Establishing the network's boundaries is crucial in identifying the relevant and influential actors.

4.2.2. Sampling Techniques

Due to this research's exploratory and qualitative nature, the research sampling method was non-probability sampling as it involves a non-random selection. The sample was generated using snowball sampling (Jain & Chetty, 2020). Snowball sampling is a technique in the social sciences used when statements about very small or difficult-to-reach groups of people must be made (Jain & Chetty, 2020). A person from an organisation takes part in a survey, passes the questionnaires on to other people in their network, or arranges participation in the survey by forwarding information of other actors to the researchers.
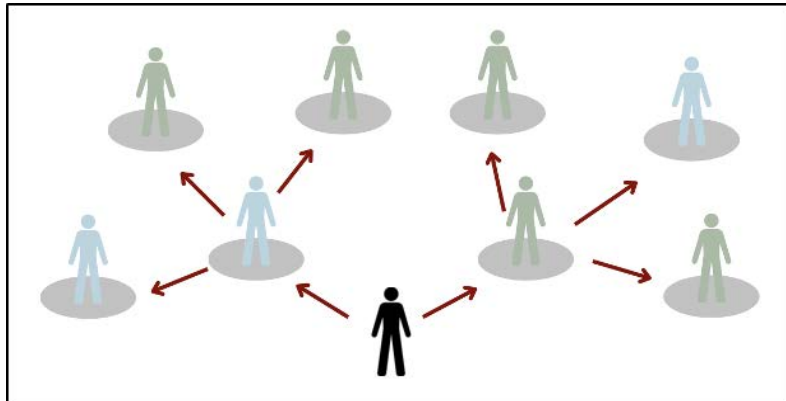
Figure 6: Illustration of Snowball Sampling Method (own figure)

In context with analysing the sustainability network in Maastricht, this technique proved useful as it allowed the researchers to find actors in a field, they themselves were not familiar with. Thus, the researchers first reached out to the sustainability actors present in the prior report (Beuerle & Moreira, 2019). In the survey, the participants were asked whether they had ties to other sustainability actors in Maastricht. Based on the answers, the researchers could identify a greater number of sustainability actors they subsequently contacted.

Lastly, the researchers also looked for suitable actors on social media and the web to provide the most accurate network possible. As a result, they could reach a sample size of 37 (survey participants) + five (interviews). However, the total number of actors present in the network is 77. This number results from actors being collaborating partners of survey and interview participants, as well as organisations found through additional research conducted on social media and actors' websites.

4.2.3. Data Collection

Next, suitable analysis methods and tools were selected. For efficiency reasons, data was collected using an online questionnaire, answerable in 20 to 30 minutes. Five semi-structured interviews with key sustainability actors in Maastricht were conducted. Moreover, data sources such as blogs, Instagram posts, and websites were systematically analysed. Participant bias is avoided by providing open-ended questions. This requires participants to provide comprehensive answers rather than merely agreeing or disagreeing with questions. Framing the questions in a way that ensured participants to feel accepted irrespective of their answers reduced the potential for social desirability bias. It was communicated to the respondents that honest answers were crucial for advancing a sustainable transition at UM.

Researcher bias was minimised by providing questions that did not offer the opportunity to interpret data in a way that would support the hypothesis. The analysis of the data was done in the effort of keep bias from pre-existing assumptions in check. Building the network required gathering the following information: contact details, background information on actors, the strength of the relationship with UM, active involvement with the SDGs, and an assessment of the university's involvement (see Appendix for complete survey). Lastly, interviewer bias was reduced by following the same interview guide for all actors. The combined measures allowed the researchers to treat the entire dataset equally.

4.2.4. Quantitative Research Procedure

Regarding the research procedure, the survey was distributed via e-mail or other contact points found through social media such as Instagram, Facebook, WhatsApp, and LinkedIn. For instance, the Green Office shared the survey on its Instagram account to reach a more significant number of participating sustainability actors. The survey was available online from April 14th until June 7th.

The target was to acquire at least 14 responses, thereby doubling the number of responses compared to the previous report and improving the knowledge of the network of sustainable actors in Maastricht. This objective was achieved and exceeded. The researchers reached out to over 60 actors and collected 37 survey responses. Twenty-eight survey responses were deemed sufficient to be included in the dataset. Nine survey responses

needed to be deleted as they did not meet the requirements, in that participants did not consent to the privacy statement or did not answer the survey sufficiently.

The overall sample consists of 28 actors from the survey and 5 actors from the interviews (N=33). The final sample consists, for the most part, of student organisations, followed by civil society organisations and corporations. It also encompasses government organisations, knowledge-producing institutions and government organisations.

Achieving the target of reaching a larger sample ultimately allows constructing a complete and more representative network map. Moreover, the map has been uploaded to the platform *kumu.io* and can continue to be updated by collaborators online. This allows for a better understanding of the network's geography; its information flows, obstacles and how to overcome them.

The first part of the survey (see Appendix) asked for background information about the actor: name of the organisation, type of actors who manage the organisation, and the organisation's objectives regarding sustainability. The second part of the survey asked respondents to specify which SDGs and sub-targets they work towards and provide information on how they tackle them. Finally, in the third part of the survey, the participants were required to state whether they have a partnership with UM. In case they did, they were asked to indicate the strength of that partnership on a Likert scale from 0-100. Subsequently, they were asked to provide concrete examples of that partnership. In the following question, the participants were then requested to indicate whether they perceived collaboration with UM as effective or if there were difficulties they were confronted with.

The respondents stating they had no partnership with UM at the time of answering the survey were asked to reflect on any potential obstacles or barriers to a partnership with the university. They were also asked to indicate their expectations from collaborating with UM. In the last part, the survey asked the participants to answer whether they have collaborations with other sustainability actors in Maastricht and requested to name those organisations.

4.2.4.1. Statistical Analysis

To map the network of sustainability actors in Maastricht, the researchers analysed the data gathered. Quantitative data was managed and analysed with the software SPSS (Statistical Package for the Social Sciences). This programme was chosen as it provided the researchers with various tools for doing statistical analysis. SPSS presents quantitative data in tables, charts, and graphs. A descriptive statistical analysis was conducted to get an overview of the collected survey data. This facilitated the understanding of the nature of the actors who are involved in the network. The analysis enabled the categorisation of the different types of actors and gave insight into which SDGs are acted on the most and the least.

Following this analysis and the interview results, the researchers could map the network and render a digital version on kumu.io. This online visualisation platform simplified complex data mapping. Making the network visible helps distinguish the key actors and collaborations of the network and those who are loosely connected to other actors and where collaboration can be improved. For the viewer, it simultaneously provides the possibility to seek critical information about the actors present on the map.

4.2.5. Qualitative Research Procedure

The qualitative data was gathered through a series of five semi-structured in-depth interviews of actors in the local sustainability network of Maastricht. Answers to qualitative questions asked in a survey also formed part of the qualitative data collected in the research procedure. The interview guide (see Appendix) was elaborated following findings already brought by the previous research report (Beuerle & Moreira, 2019). The theoretical network this research project adheres to also informs the interview guide. Therefore, the semi-structured approach was chosen to cover essential topics in all interviews. This format also allows for leniency and for probing, allowing interviewees to expand on their answers and follow emergent findings, which are then integrated into the dataset (Gray, 2004).

The interviewees were chosen through a purposive sampling method selecting five prominent actors in the sustainability network of Maastricht:

- A member of the Green Office, the student-driven sustainability department of UM, tasked with bridging UM's internal sustainability structure and initiatives with students enabling and coordinating sustainability projects.

- Agnes Halim a board member of Precious Plastics Maastricht, a student association created in 2019 to raise awareness in the local community about plastic waste and pollution. It also educates on possibilities for reducing its use, reusing and recycling the material.

- Demi Janssen, the current Chair of KAN Party, is a future member of the University Council 2022/23. KAN Party is a student party focusing its efforts on making UM more sustainable and inclusive.

- Ceren Pekdemir, the coordinator of the education pillar of the SUM 2030 taskforce, coordinator of the UM-wide minor in sustainability coordinator, and a lecturer for the Master of Sustainability Science, Policy and Society.

- Hannah Holste, the former head of the Development Committee of the United Nations Student Association (UNSA). The Development Committee is the section of the UNSA which focuses its activities on development and humanitarian topics.

Part V:
Findings

5. Findings

5.1. Description of the Network

The findings obtained from the survey and interviews, as well as from additional research conducted through social media searches, allow establishing the following description of the network of sustainable actors in Maastricht. It is believed to be up to date and the best description as of the 15th of July 2022 (Figure 7).
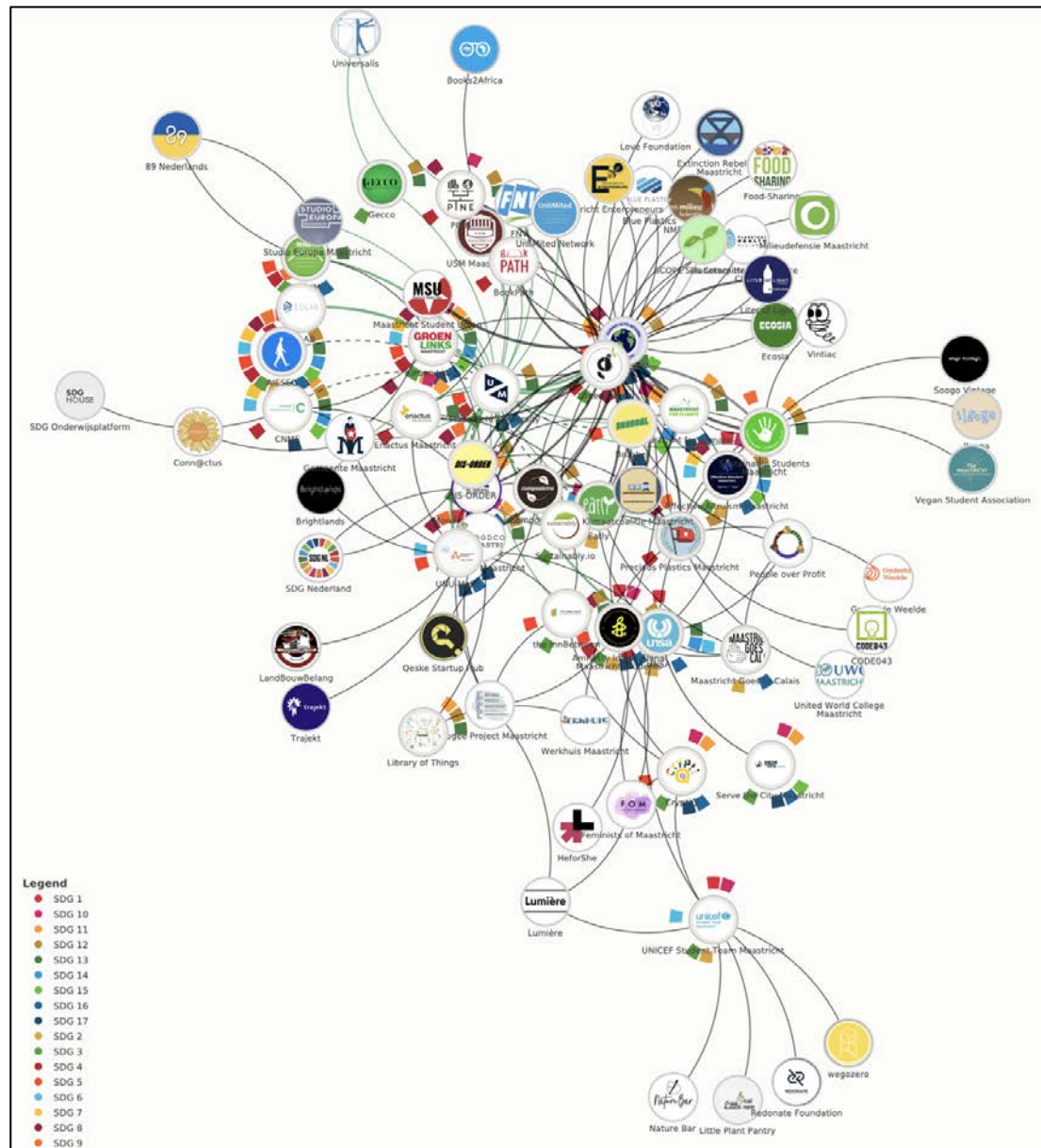
Figure 7: Map of sustainability network

Available for consultation at [https://rb.gy/emi2cf]

The network of sustainable organisations in Maastricht is composed of 77 actors and organisations coming from diverse backgrounds (Figure 8). Actors belong to different categories. As retrieved from the findings, 32% (N=25) are organisations from civil society, 10% (N=8) are corporations, 1% (N=1) are government organisations, 45% (N=35) are student organisations, 4% (N=3) are research and education institutions, and 6% (N=5) are UM organisations.
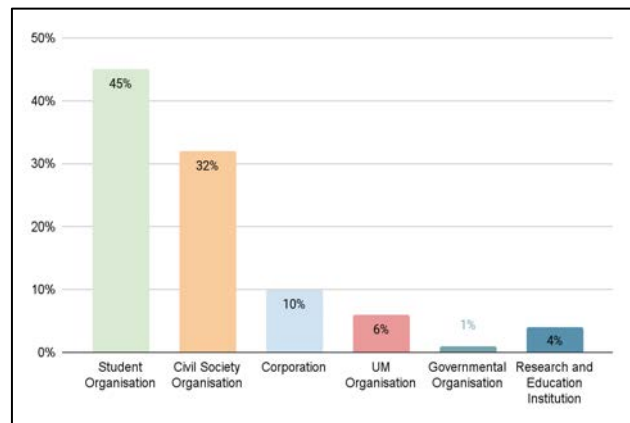
Figure 8: Chart illustrating nature of Maastricht's sustainability network

5.2. Indicators of Partnership

The SNA revealed that Maastricht University is the most influential and significant actor within the overall network, making it a hub. Furthermore, UM has a high degree of centrality, with 31 connections versus 76 potential connections in the network map. This implies that 60% of the sustainable actors the researchers included in their research have a partnership with UM (Figure 9).
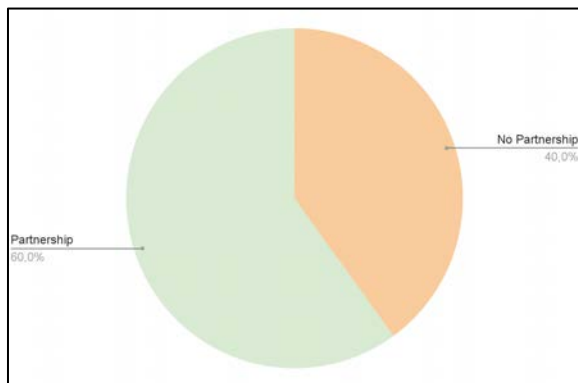
Figure 9: Chart of the proportion of actors having a partnership with Maastricht University

To understand UM's role in the network, it is vital to consider the indicators for a partnership in line with the civic university model. Besides its own achievements in integrating sustainability into its research and offering a UM-wide minor in sustainability, UM also fosters innovation and sustainable activities to address social challenges by supporting actors in Maastricht with various types of capital.

In general, UM's collaboration with sustainability actors in Maastricht can be identified by the exchange of *financial, built, social,* and *intellectual capital. Financial capital* constitutes a significant pillar of UM's contribution to stimulating progress and new activities

in line with the SUM2030 vision and strategy. Sustainability being a major component of UM's vision implies that UM offers annual financial support to student organisations affiliated with UM. These organisations must fulfil certain criteria, such as positively contributing to student life in Maastricht and being innovative (Maastricht University, j, n.d.).

Figure 10: Types of capital exchanged in partnerships between Maastricht University and local sustainable actors
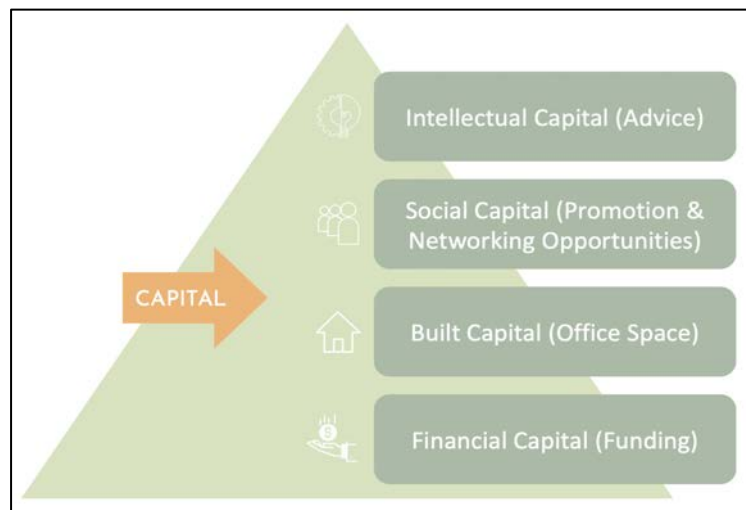
Built capital refers to the provision of premises in which eligible organisations can operate. An example of built capital is the Sustainability Hub. Although only a temporary location, the Hub provides space for student-led organisations that aim to tackle the SDGs through their actions. The Hub houses organisations such as Precious Plastic Maastricht and Food-Coop. Through community building, UM strives to achieve a student-driven breeding ground for sustainability initiatives (Maastricht University, i, n.d.).

UM provides *social capital* to actors through networking opportunities and promotion. As the research shows, visibility and promotion are granted through UM's social media platforms, their website, and the UM newsletter. In this event, innovative start-ups are given the stage and presented to well-known personalities in the field of sustainability.

Intellectual capital refers to the non-monetary and non-physical resources provided by UM which contribute to the organisation's value. Particularly, providing a contact person who possesses useful valuable skills and knowledge falls under this form of capital. This type of capital is interchanged between UM and other organisations present in the network. While UM can offer professional assistance, KAN Party, for instance, provides UM with recommendations on sustainability-related projects in which they have developed expertise. Collaboration among all the organisations brings about change and enhances progress.

Considering these indicators for a partnership with UM, the average strength of partnership indicated by the participants is 61.8889 (Table 1).

The hubs of the network or the actors with the most connections are Maastricht University (degree=31), the Green Office (degree=26) and KAN Party (degree=22).

Descriptive Statistics				
	N	Minimum	Maximum	Mean
If yes, how strong would you qualify this partnership? – 0=very weak 100=very strong	18	5.00	100.00	61.8889
Valid N (listwise)	18			

Table 2: Average strength of partnerships between Maastricht University and local sustainable actors

Figure 11: Network of actors in partnership with the Green Office, Maastricht University, and KAN Party

Other metrics show that the actors that have the most control over information flow and access to information; in other words, actors with the highest betweenness centrality are Maastricht University (0.373), KAN Party (0.283) and UNSA development committee (0.283). The actors with the highest visibility or centrality are Maastricht University (0.691), KAN Party (0.671) and the Green Office (0.634). Actors with the furthest reach, namely those able to easily spread information through immediate or secondary ties, are Maastricht University (0.922), the Green Office (0.884) and KAN Party (0.831). Finally, the actors who are the best connected to other well-connected actors - those with the highest eigenvector centrality - are KAN Party (0.069), Maastricht University (0.065) and the Green Office (0.064).

5.3. UN SDG Framework

The research project aimed to understand the role UM plays in the network of local sustainable actors to achieve the UN SDGs. In the survey and interviews, the researchers tasked the respondents with first indicating which SDG their organisation or project tackled. In a subsequent question, they were asked to indicate which target was acted upon, as

defined by the UN framework of the selected SDG. This was done to evaluate the actors' actions according to the targets and indicators defined by the UN framework. However, the attempt proved unsuccessful for various reasons.

Firstly, most interviewees were familiar with the 17 UN SDGs but not their targets. When presented with the targets, respondents found these to be more adequate for institutions rather than local organisations. However, the SDG framework without looking at the specific targets is a useful tool for local actors. As expressed by Hannah Holste (2022), head of the Development Committee of the United Nations Student Association:

"SDGs are often hard to grasp, because they seem so distant. So, what we try to do at UNSA is say, okay, we can see that SDGs seem a bit unrealistic to achieve on an individual or local and communal level, but we can still act towards them in our local community and show the students in an association that although it might not be that big, we can still have an impact."

Ultimately, the activities actors in Maastricht's sustainability network engage in are local and have a smaller scale and scope than those of actors on an institutional level. Subsequently, organisations adapt their actions to the local context. However, this does not necessarily coincide with the specific targets set for the SDGs, as they are rather meant to be reached globally. As illustrated by a member of the Green Office (2022):

"I feel perhaps for the SDGs, the approach of the university is… advanced? That is a harsh word. But for sustainability, there is more of a focus on planetary health where the human being interacts with nature, the environment and sustainability. The environment, the earth, lifestyles are often linked to human wellbeing. I don't see that reflected in the SDGs and their targets".

Nevertheless, the researchers were able to identify the main SDG targets selected by respondents. These were: SDG 13.3, "*Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early*

warning", and SDG 4.7 "*By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development*"(UNDP, n.d.). These targets imply acting on education or awareness-raising. These actions were found to be the principal activities engaged in by actors in the local sustainability network. As made clear by Demi Janssen (2022), the current head of KAN Party:

"We work on improving education and awareness raising (13.3). We also believe that sustainability and specifically Climate Action (SDG 13), should be implemented in the curricula everywhere. There should be for example a core course that everyone needs to take within every stream of study. Everyone should have a look on climate change, see ok, what does this mean for economics? Because we talk of all these models, but how do they relate to climate change? Or sustainability in a border sense? Sustainability should be in the curricula to raise awareness".

In the interview, she also attempted transposing the institutional UN framework to her aspiration to push for sustainability within the University Council:

"I think, working in the University Council, I want to integrate climate change measures into national policy strategies and planning, so target 2 of SDG 13. Well, not national, but UM policy and strategy. So that is certainly something KAN Party wants to implement and monitor".

Within the survey responses, very few respondents indicated the targets of the selected SDGs they directly acted upon and tackled. This is due to the great number of targets and indicators and the fact that these targets and indicators are aimed to be used on an international and institutional level. The targets are unadapted to quantify the action of small-scale local actors.

Although the specific targets and indicators of the UN SDGs were not an adequate gauge to quantify the impact of local actors, the framework of the 17 SDGs does serve as a pertinent tool to understand the action and impact of local actors.

5.4. UN SDGs Acted Upon

Through interview and survey responses (N=33), it was found that SDG 12 Sustainable Production and Consumption and SDG 13 Climate Action are the most acted upon. Twenty-two actors indicated acting for SDG 12 in one way or another, and 20 indicated acting for SDG 13. On the other hand, SDG 1 No Poverty and SDG 7 Affordable and Clean Energy are the least tackled, with only seven respondents claiming to act for them.

Out of the SDGs mentioned, only SDG 13 is part of the SUM 2030 vision (which comprises SDGs 3,4,13 and 16). However, SDG 3 Good Health and Wellbeing and 16 Peace Justice and Strong Institutions are also fairly represented among the SDGs local actors work towards, with 15 respondents claiming to tackle them. Although most of the actors have a partnership with UM, the other actors in the network do not work towards the same goals or have not set the same priorities as the university.
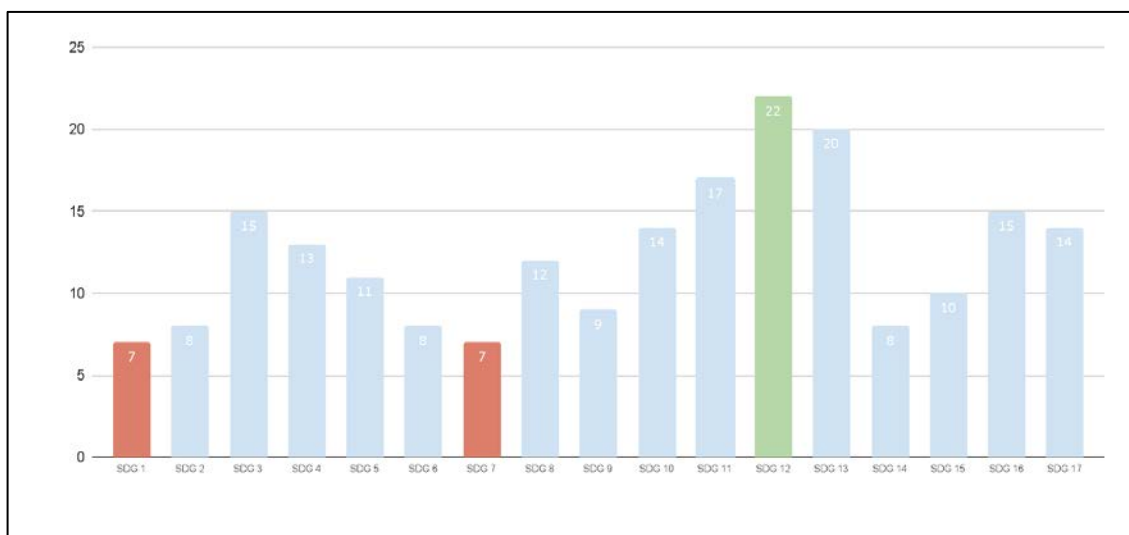
Figure 12: Chart of frequency SDGs tackled by local sustainable actors in Maastricht

Sustainability holistically encompasses environmental, social, and economic considerations. It is, however, possible to distinguish between the engagements of the actors in the sustainability network and their points of action. Some organisations act primarily on ecological sustainability, and others focus their actions on social sustainability. Ecological

sustainability encompasses mainly SDGs 13 Climate action, 14 Life Below Water and 15 Life on Land. Social sustainability relates to SDGs 3 Good Health and Wellbeing, 4 Quality education, 5 Gender Equality and 10 Reduced inequalities.

Various actors in the network tackle *ecological sustainability* through actions such as the UNSA Development committee instigating a Clean Up Walk'' in Maastricht. Volunteers gathered and roamed the streets to pick up improperly discarded trash (UNSA Development, 2022). The UNSA development committee and Eatly have also collaborated on SDG 13 by hosting a "No Food Waste Dinner''. Volunteers and students were invited to cook dinner with produce provided by Eatly, meet fellow students and learn about food waste and ways to reduce it (Eatly, a, 2022). Maastricht for Climate engaged in Climate Action through the organisation of a climate march on March 12th 2022, inviting students and residents to protest for more decisive climate action on behalf of politicians (Maastricht for Climate, 2022).

Mondiaal Maastricht, in collaboration with the external actor SDG Nederland, Maastricht for Climate, CNME and Dis-order Apparel, raised awareness on the need for sustainability in local communities during the King's Day festival in Maastricht (the research team was present engaging in research during the event). The activities organised during the event encompassed climate march banner making, a sustainable laundry detergent confection workshop (Maastricht for Climate), and birdseed feeders making (CNME). In addition, these actors work towards ecological sustainability by providing the public with information about climate change, current unsustainable practices and the possibility of improving them.

CNME (Centrum voor Natuur en Milieueducatie [Centre for Nature and Environmental Education]) focuses most of its activities on ecological sustainability through educating school children on the meaning of SDGs, climate change, air pollution, the potential for a plastic-free world, and the importance for biodiversity and nature. Simultaneously, it actively aims to mitigate climate change through tree planting projects in the Maastricht-Limburg region. It also engages with SDGs 14 Life below Water and 15 Life on Land through land and water clean-up projects. Lastly, the organisation offers advice on energy-saving measures for homes in Maastricht.

Social sustainability is tackled by actors such as CryptiQ, a local LGBTQIA+ organisation advocating for the creation of safe spaces for all members of the LGBTQIA+ community regardless of race, age, and social status. It strives to improve the community's well-being and encourage community building. In collaboration with other local LGBTQIA+ actors, CryptiQ organised a pride march and protest on June 25th 2022, to advocate for the rights of the LGBTQIA+ community and its visibility.

The UNSA Development committee, in partnership with Feminists of Maastricht, tackled SDG 5 Gender Equality by organising a collection of menstrual products to fight period poverty. The committee also acts on SDG 4 Quality Education internationally through its international partnerships with external NGOs. The UNSA development committee offers volunteering opportunities for students, provided with training, to teach certain subjects in schools abroad.

Amnesty International Maastricht Student Team focuses on the human aspect of climate change and the urgent need for sustainable solutions to mitigate and adapt to climate change. It tackles SDGs 3 Good Health and Wellbeing and 10 Reduced Inequalities through the spread of awareness on the negative aftermath of climate disruptions driven by excessive consumption. One example is the extraction of coal in Colombia for mainly Western consumption, which is the origin of droughts and floods in the Guajira region of Colombia, native to the Wayuu community. Together with the Lumière cinema and an FSE (Faculty of Science and Engineering) faculty member, the Amnesty International Student team of Maastricht organised a movie screening about extractivism in Latin America and its human and political consequences (Amnesty Maastricht, n.d.).

SDG 12 Sustainable Production and Consumption is the most popular within Maastricht's local sustainability network. This SDG encompasses both ecological and social aspects of sustainability. Acting on it improves performance on climate action by prompting individuals to consume less and with better quality, thereby decreasing the amount of environmentally harmful economic activities. It also creates social benefits by providing individuals with better products that aim to be environmentally sustainable and financially accessible for all.

An example of the actors and their engagements towards SDG 12 is the student initiative Eatly. Eatly sells fruits and vegetables that do not meet supermarket chains' standards but are still perfectly fine for consumption. This organisation sustainably sources local and seasonal produce deemed 'ugly' or unfit for supermarket standards and which would otherwise be discarded. This ugly produce is then proposed for sale to the local community of Maastricht. Clients can pick up their produce at UM's Sustainability Hub or other local restaurants in Maastricht. Next to
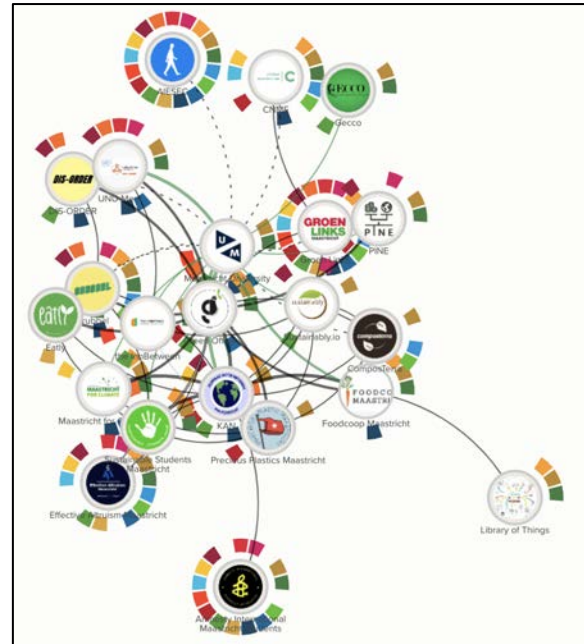
Figure 13: Visualisation of the network of actors tackling SDG 12 Sustainable Production and Consumption

the pick-up option, Eatly also offers an emission-free bike delivery service. This actor has

Figure 14: Eatly veggie box and emission free delivery service (Eatly,a 2022)

already diverted 4500 Kg of produce from being wasted (Eatly, n.d.). Hence, Eatly prevents those misshapen and leftover veggies from going to waste, ensures additional revenue to the suppliers who could not sell those products and encourages people to consume 'ugly but still tasty' greens, thereby ultimately reducing food waste.

The corporation ComposTerra also tackles sustainable production and consumption by developing new materials. These are made from various local organic waste streams such as coffee grounds or orange peels. The products created from the materials are compostable and can replace single-use plastics products. Using their products would ultimately reduce

plastic waste from single-use dishware (ComposTerra, n.d).

Figure 15: Bowl produced by ComposTerra (ComposTerra, n.d.)

In its survey response, DIS-ORDER apparel, a student-owned brand of clothing, gave a detailed account for the standards of sustainability it upholds in its production process:

"We produce our clothes specifically for each other. This means that no unnecessary clothing is produced and therefore streamlining our production waste to a great degree. The textiles we do use are leading the industry in many ways in terms of sustainability. Most of our textile producers run their plants off of renewable energy, one of them B&C has reduced their CO2 output by +103 tons. Moreover, water usage is greatly reduced with our t-shirts using 7x less than the industry standard. The water that is used however is treated at state-of-the art treatment plants to ensure it is free of chemicals and safe for release. Our textile producers also use many circular systems in their production. All waste which arises from cutting the materials is recycled and even the leftover chemicals which are used to dye the clothing are used as fuel (through clean combustion) for the steamers inside the factory to ensure they don't go to waste and are dealt with safely. Finally, we urge customers to only buy their items in their size and not multiple to avoid them sending back unused clothing since it would be produced specifically for them which is obviously a waste. Sadly most of this information is specific to the t-shirts we sell. The hoodies are less strong sustainably speaking nevertheless they still use recycled materials and treat their water effectively post production".

Figure 16: Manufacturing unit from Dis-Order Apparel's collaborator Stanley and Stella (Standleystella, n.d.)

Findings from interviews and survey responses show that most network actors tackle SDGs by raising awareness. The student organisation PINE (pluralism in economics) organises lecture series. The organisation invites faculty members or external keynote speakers to showcase new conceptions of the economic system. These are alternative economic approaches which promote sustainable development. The organisation shares knowledge about climate action, sustainable economic development and responsible production and consumption. It can be seen here, as posited by the Quintuple Helix, that the output of the education system is entering the economic system (Carayannis, Barth & Campbell, 2012). This interaction reshapes the economic system and prompts it to engage in future safe forms of production and consumption. These can potentially decrease the current environmental harm of production and consumption practices. Ultimately, these lecture series spread the minority view, which accounts for socio-ecological complexities, to a majority. This, in turn, creates a social tipping intervention which will eventually re-conceptualise economics and current valuation measures (Otto et al., 2020).

Corporations present in this network, such as Sustainably.io, have taken the green input from the knowledge created by the university following investments for sustainability in its internal structure and apply it to their production and consumption practices. This corporation locally and ethically produces air quality measuring devices with sustainable materials (sustainably.io, n.d.).

Other actors such as KAN Party, NovUM and GroenLinks take rather political actions to lobby and advocate for better sustainable practices. GroenLinks interacts with the Maastricht Municipality to implement greener policies. KAN Party and NovUM interact with UM in the context of Faculty and University Councils, where they aim to monitor its promises and commitments for the best possible implementation of the SUM 2030 vision. Demi Janssen (2022), the current head of KAN Party, gives an account of her party's action in the University Council of UM:

"KAN Party looks at what SUM2030 does because it made certain claims. It wants to be carbon neutral for example. We investigate, are they actually doing what they promised to do? We aim to keep track of the work SUM 2030 does and have them give us updates. We believe there should be more regular reporting because this is missing a little bit at the

moment. So, our job is to say, ok, UM promised this by 2030 and it wants to achieve these targets within operations, education, and research, are they actually doing what they promised?"

The student party also creates awareness within the student community and communicates the concerns among students to higher institutional levels in the university. As of April of 2021, KAN Party collected over 1000 signatures from the UM community (202 staff members and 876 students) for a Climate Letter expressing deep concerns for the need for more decisive action on behalf of UM to realistically achieve its SUM 2030 vision (Klimaat Actie Netwerk, b., n.d.). Citizenship involvement through political action pushes for changes in policies and more ambitious commitments to sustainability on institutional levels.

"We also come up with initiatives, for example the Climate Letter, we raised over 1000 signatures by members of the UM community and showed that things need to change, things need to be done and this is what students want.

Of course, we would like to have even more influence or power but we believe that by showing UM, this is what you promised to do and holding them accountable, we already can have influence in certain matters".

(Demi Janssen, 2022)

Figure 17: Former board members of KAN Party, Friederike Leppert, Hannah Wagner and Charlotte Lehnard presenting the open letter to Maastricht University signed by over 1000 members of the UM community with Nick Bos, former vice president of UM

5.5. UM Achievements on Sustainability

As highlighted in the theoretical framework, universities play a central role in promoting sustainability in a local context. Universities internally invest in sustainability, engage in knowledge production, and transfer it to other systems of society. With involvement in local projects and investments of capital of various forms, universities have the potential of greatly promoting sustainability and improving performance to achieve the UN SDGs. In 2018, Maastricht University communicated its vision and commitment to sustainability creating the 'Sustainable UM 2030: Definition, programme and organisation'. With this task force, UM acts on three pillars: sustainable *education*, *research,* and *operations*. It has the goal of becoming an inclusive, innovative, and sustainable institution, contributing to a more sustainable world both regionally and internationally (Maastricht University, 2020).
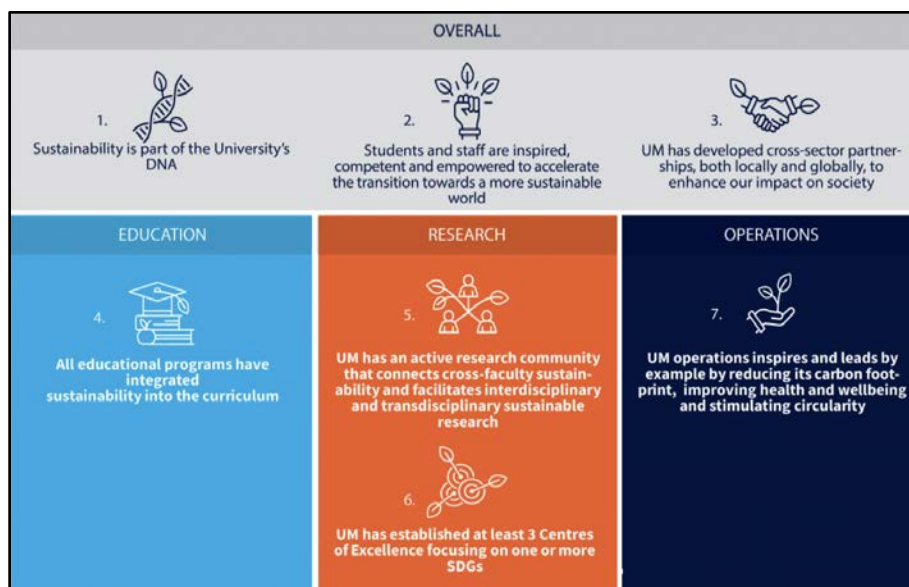
Figure 18: Pillars of Sustainability at UM

To achieve this, UM aims to transform its education and research activities but also its business operations toward better sustainable practices. This follows the theoretical approach of the Quintuple Helix (Carayannis et al., 2012). It pledges to focus on SDGs 3 Good Health and Well-Being, 4 Quality Education, 13 Climate Action and 16 Peace Justice and Strong Institutions and follows the Brundtland report's definition for sustainability (Maastricht University, 2020). Within the education pillar, UM strives for *all educational programs to have integrated sustainability into the curriculum*. For the research pillar, UM strives for *an active research community that connects cross-faculty sustainability and facilitates interdisciplinary and transdisciplinary sustainable research,* and that *UM establishes at least three Centres of*

Excellence focusing on one or more SDGs. For its operations pillar, UM aims for its *operations to inspire and lead by example by reducing UM's carbon footprint, improving health and well-being, and stimulating circularity* (Maastricht University a., n.d.).

Ultimately, UM has implemented various policies and programmes. For education, UM has implemented a multidisciplinary sustainability minor available for all bachelor students to part-take in. The minor combines environmental, social, economic, and institutional dimensions of sustainable development. It provides students with a robust background to integrate into their central stream of study and use in their future academic and professional careers (Maastricht University, b., n.d.). Furthermore, in collaboration with the members of the Green Office, also acting on education, UM has created an SDG Seminar series. For each seminar, an SDG is chosen, and relevant academic staff of external keynote speakers are invited to interact with the UM community and raise awareness on the specific topic (Maastricht University, c., n.d.). Ceren Pekdemir (2022), the coordinator of education in the SUM 2030 task force, explains the role of UM in promoting sustainability as a civic university in a local and global context:

"In essence universities produce two main things: they provide education and a place where research can be conducted. If we look around the world, then there is no denying that sustainable development is part of the world. It would not make sense if a university, as an institution where knowledge is created and as a place where we educate students as the result of our research, did not make a connection to sustainable development. Because whether we like it or not, it is part of our world."

One of the most significant investments UM has made in terms of sustainability for education is the creation of the Sustainability Grant for Education. This grant aims to further integrate sustainability within UM curricula (Maastricht University, c., n.d.). As said by the coordinator of Education for the SUM 2030 Task Force:

"With the sustainability grant for course and module development, we know for sure that more courses will be created thanks to it. And the majority of them will focus on

sustainable development. So, we contribute to sustainability in terms of creating awareness and stimulating projects".

Providing this grant is an initial investment for sustainability in the knowledge system. It provides the intellectual leaders and scientific community, namely the creators and coordinators of courses, with resources (time and funds) to develop educational resources integrating worldviews accounting for socioecological complexities. This action pushes the education system towards its tipping point where it is impossible to revert to a state where sustainability was not embedded within knowledge creation.

In terms of research, UM has created a seed fund. UM researchers are invited to submit applications to receive funds for interdisciplinary and cross-faculty research collaborations focusing on one or more SDGs (Maastricht University, d., n.d.). UM also provides its students with internship opportunities and collaborations with external partners such as NGOs or industry actors (Maastricht University, e. n.d.).

For operations, UM has put in place various policies. One of them is the 'Take the Green Seat' policy, urging academic staff to consider the environmental impact of their business trips and prompts them to use rail instead of air travel when possible. It also asks staff to consider attending events digitally when possible. Air travel, as it is highly pollutant, should only be used when absolutely necessary and unavoidable (Maastricht University, f., n.d.).

When renovating its latest real estate purchase, a former army barrack now serving as part of the faculty of business and economics, UM was awarded the BREEAM certificate of Excellence for its standard of use of sustainable materials and procedures (Maastricht University, g., n.d.). Following the proposal of KAN Party, UM successfully implemented Ecosia as the standard browser for all computers managed by the UM Library and Student Desktops (Klimaat Actie Netwerk, a., n.d.). Through every search, this search contributes to the plantation of trees to raise awareness and fight climate change. With this initiative, UM and KAN Party are acting on SDG 13 Climate Action and promoting the vision of SUM 2030 (Maastricht University, h., n.d.).

Finally, together with KAN Party the Green office, UM has opened the Sustainability Hub providing a location for sustainable student organisations to work, collaborate and host events. The Hub is managed by the members of the Green Office, who allocate rooms and workspaces to selected student organisations. Currently, these are Green Office, KAN Party, Precious Plastic Maastricht, Food-Coop, Food Sharing, Maastricht for Climate, Bookpath, Extinction Rebellion, Fossil Free Maastricht, and Liter of Light (Maastricht University, i., n.d.).

Although performance on sustainability may continuously be improved, these policies have set UM in the right direction to achieve the SUM 2030 vision. As said by Ceren Pekdemir (2022), the coordinator of education for the SUM2030 agenda:

"[We need to] create a conducive environment and take it step by step, project to project to get to our aims."

5.6. Role of Green Office

In UM's sustainability achievements, the Green Office plays a decisive role. It is the student-driven sustainability department of UM. Its task is to bridge SUM2030 and students by initiating and coordinating sustainability projects and bringing UM closer to reaching its targets.

"The aim is to really make the bridge between the official university and the students and thus also contribute to reaching the goals that were set in different aspects of sustainability. So [...] the Green Office is really there to, from a student perspective, help to reach these goals." (Green Office Representative, 2022).

Regarding the Green Office's sustainability network in Maastricht, 25 partnerships are identifiable (Figure 19). Therefore, it is a very central actor in the sustainability network of Maastricht. In their interview, the representative of the Green Office emphasised the department's strong relationship with UM because of the SUM2030 vision. The interview also highlighted the close ties to organisations present in the Sustainability Hub. As explained by the Green Office representative, their mission is to connect the student population to the

institutional levels of the university. Subsequently, the Green Office promotes collaborations between both ends by examining the needs of the student organisations and forwarding this information to UM and the SUM2030 task force. The task force should then be able to provide adequate support to the student organisation for effective collaboration in reaching the UN SDGs (Green Office Representative, 2022).

Figure 19: Network of actors in partnership with the Green Office

KAN Party constitutes an essential partner for the Green Office (Figure 19). Both actors keep continuous exchanges and have frequently collaborated on events. A recent example is the organisation of the Sustainability Week, which took place from the 19th to the 22nd of April 2022. The Green Office is also actively connected to other student-led organisations such as Maastricht for Climate, Sustainable Students Maastricht, Precious Plastic, and Enactus Maastricht. These collaborations are mainly characterised by the exchange of social and intellectual capital. For instance, the Green Office offers some student organisations promotion via their social media platform, Instagram. The exchange of social capital occurs both ways, as the organisations also advertise the Green Office's events on their social media platforms. Thus, they help each other gain visibility for their causes and events collaboratively.

Lastly, the Green Office also shares loose ties with actors it only punctually collaborates with. Among these are actors who were present at the Sustainability Week, namely Blue Plastics and Ecosia. Due to the joint organisation of the Sustainability Week, these actors are also partners of KAN Party.

5.7. Role of KAN Party

The Klimaat Actie Netwerk (KAN) Party is another central actor in Maastricht's sustainability network, also pushing UM to keep up with its sustainability objectives. It is a network of student-led organisations that aim to unite forces through collaboration and thereby bring

sustainable solutions to UM. At the same time, KAN Party is a student party represented in the University and Faculty Councils, where they discuss student matters from a student point of view and lobby for sustainable change. In that role, they also monitor UM's approach to sustainability and aim to hold them accountable for the promises made (KAN Party, n.d.).

As Demi Janssen, Chair of Kan Party (2022) explained, their *"number one pillar is collaboration",* and they *"collaborate with many organisations from Maastricht [and also from] outside".* This is visible in figure 20, the student organisation has ties to a wide range of actors anchored in the local sustainability network. While KAN's council work as a student party implies a strong partnership with UM, they also have robust ties to other organisations.

As indicated by the interviewee and supported by the survey responses, particularly KAN's ties to actors of the Klimaat Actie Netwerk such as Maastricht for Climate are strong. However, other actors in the Sustainability Hub, such as Precious Plastics, also have solid ties to the student organisation. These partnerships are characterised mainly by continuous exchange, collaboration for events, and joint efforts to increase sustainability.

Figure 20: Network of actors in partnership with KAN Party

Besides KAN's close and strong partnership with UM and the above-mentioned student organisations, they also established weak ties with other actors in the network, such as Maastricht Entrepreneurs and some external actors like Ecosia and Blue Plastics. These partnerships are rather punctual and came to existence for the Sustainability Week; nevertheless, they still go along with the exchange of capital.

5.8. Role of UM

Since the types of capital signifying a partnership between actors has been described in section 4.2., this next section will analyse the ties between UM and sustainability actors in Maastricht. As revealed by the statistical analysis of the data collected, UM has 17 partnerships which were indicated to be strong (<60) and seven partnerships which were described as very strong (<80). Seven actors have said to only have weak (>60) partnerships with UM. The average strength of partnership with UM constitutes 61.8889 out of 100 (Table 4).

	N	Minimum	Maximum	Mean
If yes, how strong would you qualify this partnership? – 0=very weak 100=very strong	18	5.00	100.00	61.8889

Table 3: Average strength of partnerships between Maastricht University and local sustainable actors

Figure 21 illustrates the difference between very strong and weak partnerships. The lines that indicate a very strong partnership are green and thick. Weak partnerships are represented by dashed lines. The partnership strength is based on the respondents' subjective perception.
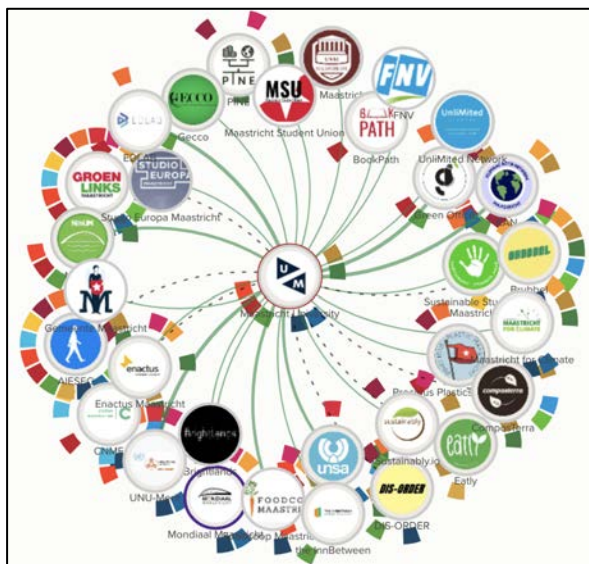

Figure 21: Network of actors in partnership with UM

The question that needs to be answered is, what makes a connection to UM very strong? Actors are said to have a very strong relationship with UM when there is a continuous flow of information, ideas, and capital and collaborative efforts. Strong partnerships are characterised by regular exchanges between the two actors. All forms of capital do not need to be exchanged simultaneously. Moreover, partnerships are marked with room for improvement in terms of closeness in partnership. Weak connections are characterised by some sort of capital exchange, and only occasional interaction. Collaboration is punctual or irregular.

Particularly UM's ties to UNU-Merit, EDLAB, Green Office and KAN Party stood out as very strong. UM's ties to new student organisations such as Eatly are weak. To understand the strength of the sustainability network in Maastricht and its gaps the section will make an analysis of the existing partnerships.

As illustrated by figure 21, UM's ties to the UM Green Office are perceived by a value of 83 on a scale of 0 to 100. The strength results from the Green Office being UM's student department for sustainability. To effectively work for UM, the Green Office receives financial, built, social, and intellectual capital from UM in the form of funds and professional assistance from staff and coordinators of the SUM2030 agenda.

EDLAB is UM's institute for education and innovation. Their survey response indicated their partnership with UM to be very strong. Indeed, EDLAB, like the Green Office, is a department of UM. Its close connection enables it to profit from all types of capital provided by UM. At the same time, these actors also provide the university with intellectual capital through advising on improvements on the quality of UM education in line with the Civic University Model.

While the former two examples are intra-UM actors, KAN Party is a student organisation that developed independently from UM. Nevertheless, the organisation's ties to UM are now considered very strong. Reasons for this are its presence in the university and faculty councils, where KAN Party has the power to directly impact the decision-making and progress on sustainability-related processes. Also, the student party has room to operate in the sustainability hub, profits from financial aid, and is in regular exchange with representatives of UM. This partnership thus profits from two-sided engagement; while UM provides KAN with crucial means to operate effectively, KAN works on achieving greater sustainability at UM.

"We are very much linked to UM in terms of financial needs. As KAN Part, we get financial support from the university, but we also get access to the Sustainability Hub, which is a university building. We are also part of Faculty and University Councils where we interact with UM on a regular basis." - Demi Janssen (2022)

A similar actor to KAN Party is NovUM. NovUM indicated the strength of partnership to be at 80. They are also a student party present in the University and Faculty Councils. According to the survey results, their ties to UM are ultimately strong because UM provides NovUM with office space, funding, and financial compensation to the board members, such

as the *profileringsfonds* and the *stimuleringsfonds* to help NovUM carry out its activities. They are also in regular exchange with UM and profit from social and intellectual capital.

Another example of how UM operates as a civic university is its support of Precious Plastic Maastricht. The student-led initiative is part of a global community that works towards finding solutions for global plastic pollution. Precious Plastic Maastricht found an innovative way of recycling plastic waste by turning it into entirely new products. To support such progress on sustainability, UM offers the organisation space in the Sustainability Hub and funds to pay for the machines they need for the recycling process. A primary facilitator in the partnership with UM thereby constitutes the Green Office. As Agnes Halim, a board member from Precious Plastic pointed out, the Green Office is present and involved in the Sustainability Hub and at the same time in the SUM2030. *"Through this connection, the Green Office can communicate to the SUM2030 department what is going on with the sustainable student initiatives"* (Agnes Halim, 2022). Thereby, the Green Office constitutes a major facilitator in connecting UM to sustainable student organisations.

Moreover, the interview with the head of the United Nations Student Association's (UNSA) Development Committee, Hannah Holste, revealed that UM also has a strong partnership with that organisation. UNSA being a large and the *"most international and interfaculty Student Association in Maastricht"* (Hannah Holste, 2022), makes it a crucial player in the field of sustainability. Thus, they are also offered support by UM through the provision of various types of capital. While they profit from an office space provided by UM, they also receive funding and collaborate on events. They, for instance, hold events in university buildings. Importantly, Hannah Holste (2022) emphasised that this partnership is not only one-sided as UM also benefits from UNSA in that they *"contribute to the attractivity of the university because for students it […] is attractive to come to a university which has international student associations with a certain outreach"*.

Besides these actors with solid ties to UM, several actors perceive their partnership with UM to be existent but relatively weak. One key example of this is Eatly. Being a recent student initiative that tries to reduce food waste by collecting vegetables and fruits that would have otherwise gone to waste, they have so far been unable to establish strong ties to UM. Yet, according to their survey responses, Eatly has been in exchange with UM and subsequently profited from social capital in the form of promotion on social media and

participation in student competitions. Thus, although some types of capital are provided, there is not yet a substantive partnership.

Similarly, Dis-order Apparel, another very new student project selling clothes while aiming at destigmatising mental health issues, also indicated their partnership with UM to be weak. Just like Eatly, this results from the fact that they are a relatively new project, not giving them the chance to have built up a strong partnership with UM yet. Consequently, they have only collaborated with UM in terms of social capital, such as promotion on UM's social media platforms.

Thus, although many partnerships are in place in which UM plays a prominent role in the organisation's progress and success, other initiatives seem to have either very weak or no ties at all to Maastricht University. It is ultimately necessary to examine the obstacles that prevent these partnerships from being established or becoming stronger and how they can be strengthened.

5.9. Obstacles to UM Partnership

In the survey, four participating organisations indicated that they do not have a partnership with UM. These are: Amnesty International Maastricht Students, UNICEF Student Team Maastricht, Library of Things, and Maastricht Goes to Calais. To gain information on why this is the case and if there are any obstacles seen to entering a partnership, the participants were asked to provide an explanation.

While legal barriers hold Amnesty International and UNICEF back from collaborating with UM for funds, it is ideological differences for the Library of Things. The latter does not necessarily want to enter a close partnership with UM as they want to refrain from becoming a student project and prefer to remain a community initiative. Lastly, Maastricht Goes to Calais indicated to be in the process of building up ties to UM to potentially gain financial aid and storage space. However, they mentioned obstacles to establishing that partnership. These are, in their opinion, a complicated registration process and a lack of awareness about the possibility of entering a partnership with UM.

In a next step, the participants with ties to UM were asked if they perceive any obstacles that decrease the effectiveness of that partnership. In fact, 12 participants indicated that they do indeed see obstacles (Figure 22). A representative of the Green Office (2022) pointed out a core obstacle:

Figure 22: Proportion of actors finding a partnership with UM an effective in improving performance on sustainability and those finding obstacles in collaborating with UM
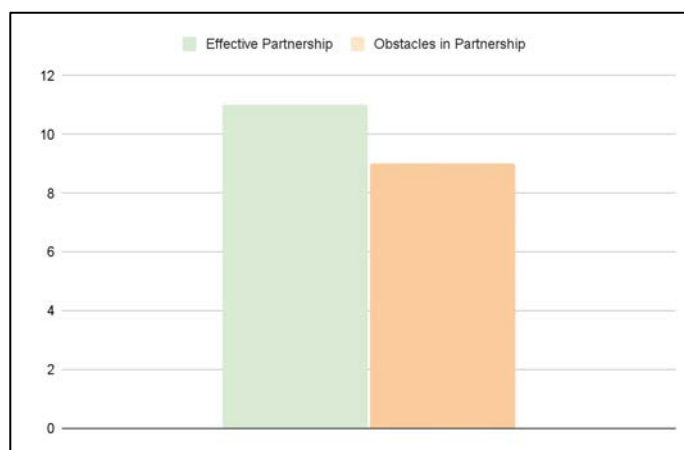
"Sustainability is not yet the priority. It is still just one light aspect"

How can this perception be explained even though UM aims to integrate sustainability into the DNA of the entire organisation and is also pressured by society to consider sustainable development as part of its operations? According to Ávila et al. (2017), this might be partly because the investments necessary for a concrete sustainable transition are seen as barriers, while the benefits are often overlooked. Consequently, administrative support, human capital, and resources are missing. Moreover, challenges to making sustainability the priority at universities are limited financial and human resources and the diversity of students and staff, resulting in varying priorities and levels of engagement (Ávila et al., 2017). Also, universities find themselves caught between different dependencies and responsibilities. Among other things, they interact with external actors such as the local and state governments, who can exert influence through legislation, as well as with internal actors such as the university administration or the university council. Understanding which challenges apply to Maastricht University expands the scope of this research. However, the researchers can examine the consequences of a lack of priority

Although sustainability constitutes one priority of UM, it is not yet the *main* priority. Subsequently, insufficient resources are provided for a more effective partnership with actors of the sustainability network in Maastricht. This ranges from a lack of money to a lack of staff dedicated to a sustainable transition. In turn, this translates into a lack of commitment and generally slowed progress on overall sustainability. Missing staff dedicated to sustainability

implies that there are not enough contact points for sustainability actors in Maastricht to establish ties with UM. Thus, in the context of the sustainability network, this slows down communication, collaboration, and overall progress. Furthermore, as pointed out by CNME, UM misses an effective top-down strategy on collaboration. This can also be attributed to a lack of staff responsible for establishing such a strategy. Ultimately communication and collaboration are aggravated. Moreover, this lack of priority and lack of staff also implies that decision-making takes long and that agenda points are often postponed due to a perceived lack of urgency and missing workforce. This is to the frustration of the collaborating actors.

Another obstacle perceived by research participants is missing support in context with receiving advice and promotion on the UM social media accounts and newsletter, for instance. Also, actors present in the Sustainability Hub emphasised that their partnership with the university is challenged as UM fails to concretely communicate the future of the Hub and how long the community can use it. While the Hub provides a vital space for organisations to develop and connect, UM describes it as a *temporary* location (Maastricht University, n.d.). The term temporary is vague, and there is a lack of clarity about what this exactly means. Moreover, a general vagueness regarding UM's ambitions for a sustainable transition and a lack of transparency in context with its achievements were mentioned. This vagueness particularly deteriorates the relationship of UM with student parties. This is because a lack of transparency makes it difficult for the student party to monitor operations and hold UM accountable for its promises.

While these are particularly obstacles seen in context with UM's ties to sustainability actors, they ultimately also slow down overall sustainable development because as pointed out by a Green Office member (2022):

"As long as it is not a priority among staff members, how would it be a priority among students?"

Thus, there is room for improvement in terms of collaboration and much potential as *"Maastricht University is a really big institution with a huge outreach"* (Hannah Holste, 2022).

For UM to counter the above-mentioned obstacles, this report now moves towards recommendations made by the interviewed and surveyed actors.

5.10. Recommendations for Increased Sustainability

This section lists recommendations to UM in line with the Civic University framework. As a KAN Party representative (2022) said, the most important recommendation is to *"make sustainability a priority"*. Making sustainability a core priority can take different forms. For instance, as pointed out by a representative of the Green Office, it would be important for UM to employ more staff because *"the more people work on sustainability, the more visible it becomes and the more important it gets"* (Green Office representative, 2022). Also, more staff would mean more time could be spend translating goals into action and making advice to organisations more accessible. In that context, one actor proposed that UM could establish a sustainability department at each faculty as a contact point for students to find information on what has been achieved so far, what is planned for the future, and how they could get involved in the field of sustainability.

Furthermore, it is advised that UM invests more financial resources into a sustainable transition. Funds could, for instance, be invested into the maintenance of the Sustainability Hub and making the building a permanent location for sustainable actors to connect and collaborate on the overarching goal of reaching the UN SDGs. Many participating organisations also mentioned that, although UM already offers social capital, even more promotion and visibility of the sustainability actors and the events they organise would be valuable. As UM has an extensive outreach, promoting events such as the Sustainability Week could attract much more people and subsequently increase overall sustainability. Although it might be challenging to do justice to all, it was proposed that UM could implement a day every month or semester dedicated to sustainability. On such a day, they could introduce sustainable initiatives and upcoming events via social media, flyers, or the UM newsletter.

In that regard, another suggestion was to open a university Instagram account circling around student initiatives and providing a platform for students to see at first sight what actors there are and how they could get engaged. If this is not feasible, it was proposed to spread a newsletter at the beginning of each academic year containing links to all active student organisations tackling sustainability. This could increase awareness of sustainability

actors present in Maastricht and increase students' cultural capital as they could more easily engage in the sustainability field.

One more recommendation brought forward was the implementation of a mandatory project day dedicated to sustainability every semester. If thoughtfully established, this could raise attention to the importance of a sustainable transition and motivate people to get engaged and reach those not regularly exposed to sustainable behaviour and practices. Moreover, project days could, similarly to the Sustainability Week, serve as a stage for organisations to present themselves and educate students about their relevance.

Lastly, a significant achievement could be the further integration of sustainability into the curriculum of each study programme. While this is already something the UM 2030 task force tackles, the interview and survey participants further emphasised its importance. For instance, a sustainable development-related core course could be established. While this would mean that other courses may have to give way, it could ultimately serve as a trigger for increased environmental awareness and sustainable behaviour. Making such a course mandatory or at least an attractive option in a student's curriculum is therefore worth considering.

These are some key recommendations brought forward by survey and interview participants. They serve as inspiration for UM and SUM2030 to enhance a sustainable transition at UM and reflect local actor's ideas (Figure 23).

1	•Employment of more staff dedicated to a sustainable transition at UM
2	•Establishment of a sustainability department at each faculty
3	•Financial investment into sustainable transition (Sustainabilility Hub)
4	•Provision of promotion and visibility through social media and the UM newsletter (e.g., UM Instagram account dedicated to sustainability)
5	•Project days on sustainability
6	•Further integration of sustainability into curriculum (e.g., sustainable development as mandatory core course)

Figure 23: Summary of key recommendations

Part VI
Limitations & Recommandations

Part VII
Conclusion

6. Limitations and Recommendations for Future Research

This research project was met with several limitations, most notably resulting from a lack of resources. First, the researchers faced a constraint regarding fact-checking the data they received. The survey responses provided most of the data used in the SNA. The data retrieved was self-reported, and the researchers lacked the resources to countercheck the responses. Ultimately, this research's findings are based on subjective perceptions.

Moreover, the researchers were confronted with a lack of access to the whole network of sustainable actors in Maastricht. Over 60 local actors and organisations were contacted requesting interviews or survey responses. However, only about half of the approached organisations responded to the request, resulting in 28 usable survey responses and five interviews. Since the research team was composed of only two undergraduate students, more students would have been needed to achieve more results. Thus, future research requires more students working on the project to increase the reliability of findings and create an even more representative network map. If more resources are provided, future research could also aim to expand UM's network boundaries to national collaborating actors. This would enable the researchers to conduct a network analysis revealing an even more representative network, illustrating the different stakeholders, and collaborating actors from outside the local network.

Similarly, the researchers could not analyse the strength of partnerships between student organisations. This is due to a lack of responses, lack of knowledge and awareness of new organisations, and lack of access to members and board members of various organisations. Moreover, the large number of them and their often, short lifespan (usually 1-3 years of existence coinciding with the length of a typical bachelor program) and loss of relevance made it challenging to assess the strength of partnership between all student organisations. Next, collaborations between student organisations are often spontaneous and punctual and only advertised through social media channels such as Instagram, making it highly challenging to track all partnerships and assess their strength. Consequently, measuring these partnerships is complex and requires future researchers to define parameters for collaboration clearly. Finally, the researchers were confronted with a general lack of accessible information, particularly regarding the provision and distribution of financial capital on behalf of Maastricht University.

In terms of the strength of partnerships with Maastricht University, the researchers suggest that in the future, local sustainable actors are asked to indicate the strength of their partnership with Maastricht University concerning each type of capital provided by the institution. This would facilitate a more profound understanding of the nature and strength of the partnership.

Overall, through the research process, the MaRBLe team has realised that the provision of more resources, particularly a bigger team, would be crucial to analyse the network in its full size. Nevertheless, the research findings correspond to the available resources and provide an in-depth and valuable explanation of Maastricht's sustainability network. Thus, this network analysis serves as a profound foundation for future research.

7. Discussion and Conclusion

This research project was conducted to investigate UM's role in the network of sustainable actors in achieving the UN SDGs in a local context. This serves to improve UM's overall performance on sustainability. The social and academic relevance lies in the replicability of the research procedure to create network maps of sustainable actors in different locations. In this way, cities and universities can assess their performance on sustainability and gain an overview of the role they play in their local sustainability networks. Moreover, the network map facilitates sustainability actors' understanding of the network's geography and enables them to establish partnerships with other actors. Lastly, the report's findings also enable UM to incorporate recommendations into its operations, improve sustainability performance, and thence better achieve its SUM 2030 goals.

To thoroughly answer the report's research questions the report first introduces a theoretical framework guiding the research. It is composed of four theoretical approaches – the Quintuple Helix (Carayannis, Barth & Campbell, 2012), the Social Tipping points (Otto et al., 2020), the Civic University (Goddard, Kempton & Vallance, 2012) and the Theory of Social Capital (Lin, 2001). Combined, these theoretical approaches illustrate the university's role in creating sustainability-informed knowledge and distributing it among all systems of society. The theoretical framework also highlights the universities' relevance in promoting sustainable transitions on a local scale, being embedded, and involved in their cities and regions. In that context, a university's role notably depends on collaborations and partnerships, taking place through exchange of various types of capital.

Next, the project used both qualitative and quantitative methods. The quantitative data was collected through close-ended survey questions sent to actors in Maastricht's sustainability network. The qualitative data was gathered through open-ended survey questions as well as five semi-structured in-depth interviews of key actors within the network. Researchers gathered additional data through the analysis of websites and social media platforms of sustainable actors in Maastricht.

Analysing the dataset using an SNA approach for quantitative metrics and thematic analysis for qualitative facets of the data allowed the researchers to create a network of 77 sustainable actors in Maastricht. Based on the SNA, the most influential actors, namely Maastricht University, the Green Office, and KAN Party, were identified. Also, the main SDGs

tackled, the nature of the actors' actions, and best practices for collaborations and partnerships were thoroughly explored. Additionally, qualitative responses provided examples of difficulties and obstacles encountered when collaborating and establishing partnerships with Maastricht University.

The first research question asked for UM's role in the network of local sustainable actors in achieving the UN SDGs. Subsequently, the SNA identified that besides Maastricht University, KAN Party and the Green Office are the most prominent actors in the network of sustainable actors in Maastricht. These three actors are considered hubs because they have high degrees of connections, centrality, betweenness, and reach. In fact, UM plays the most significant role as it has ties to 60% of the sustainable actors present in the network, with the average strength of partnership being strong (<60/100).

The interview with Ceren Pekdemir, the coordinator of education in the SUM 2030 task force, notably facilitated answering the second research question which asked for how UM improves overall performance on sustainability. Accordingly, major achievements from UM are the implementation of the UM-wide sustainability minor, the opening of the Sustainability Hub, making Ecosia the default search engine on all library computers, and providing research funds on sustainability. Thus, UM's commitments to sustainability and its SUM2030 vision are reflected in its achievements and implementations of future safe policies in each pillar of the vision – education, research, and operations.

Regarding the overall network, the main SDGs tackled locally are SDG 12 Sustainable Production and Consumption and SDG 13 Climate Action. Besides SDG 13, these SDGs differ to the ones set by the SUM2030 agenda which are SDGs 3 Good Health and Wellbeing, SDG 4 Quality Education, and SDG 16 Peace Justice and Strong Institutions. This difference elucidates that sustainability actors and Maastricht University have diverging priorities in terms of sustainability.

Moreover, the research has found that actors acted on two dimensions of sustainability – ecological sustainability and social sustainability. Ecological sustainability is acted on through direct actions such as zero-waste dinners, city clean up walks, lobbying, and workshops. Social sustainability is mainly tackled by raising awareness through SDG seminar series, lectures, protests, or movie screenings. These events spread knowledge on the urgent need for climate action, sustainable practices, and inclusive sustainable operations.

Ultimately, SDG 12 Sustainable Production and Consumption is the most tackled SDG in the local sustainability network. This SDG comprises both dimensions of sustainability and is tackled through tangible actions and raising awareness.

In context with UM's achievements and how the SNA contributes to understanding the needs for effective collaboration among sustainable actors in Maastricht, the research found limitations to UM's sustainability performance. Various actors have encountered difficulties and obstacles when collaborating with UM. Accordingly, actors find the central issue to be that sustainability is not yet the central priority in UM's operations and considerations. Thus, a greater investment in resources, particularly in funds, staff, and time could bring about enhanced overall performance on sustainability through stronger collaborations and partnerships. Subsequently, it can be concluded that UM plays a central role in promoting sustainability by producing knowledge, integrating sustainability into its structure, and supporting local initiatives by providing different types of capital. Nevertheless, overall performance on sustainability can still be improved by making sustainability the main priority of UM's activities and considerations.

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Agnes Halim - board member of Precious Plastics Maastricht

Ceren Pekdemir - coordinator of the education pillar of the SUM 2030 taskforce, coordinator of the UM-wide minor in sustainability coordinator, and lecturer for the Master of Sustainability Science, Policy and Society

Demi Janssen - current chair of KAN Party

Hannah Holste - former head of the Development Committee of the United Nations Student Association (UNSA)

A member of the Green Office

8.2. Survey Participants

Amnesty International Maastricht

Aiesec

BookPath

Brubbel

CNME

ComposTerra

Cryptiq

Dis-Order

Eatly

EDLAB

Effective Altruism

Enactus Maastricht

Foodcoop Maastricht

Green Office

Library of Things

Maastricht for Climate

Maastricht goes to Calais

Mondiaal Maastricht

UNU-Merit

UNICEF Student team Maastricht

Pine

Refugee Project Maastricht

SCOPE Sus Committee

Sustainably.io

Sustainable Students Maastricht

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9. Appendix

9.1. Interview Guide

1. Can you describe your project or organisation in a few words?

2. What are the main aims of your project?

3. What activities do you engage in?

4. How is your project involved in sustainability?

5. Are you familiar with the UN SDGs? If so, which ones does your project tackle? Which sub-targets do you tackle? *(Interviewers will provide the interviewee with list of goals and targets in case the interviewee is not familiar with them)*

6. How strongly do you perceive your impact terms of advancing sustainability in Maastricht?

7. Do you have partnerships with UM?
   - If there is a partnership with UM…
   - How strong is that partnership?
   - Do you think that the partnership with UM brings any advantages to your project, if so, which?
   - What are some examples, or tangible assets provided by the partnership?
   - Do you face any obstacles in your partnership with UM? If any, how could these be tackled?
   - How could this collaboration be taken further?
   - If there is no partnership with UM…
      - Do you see any obstacles that hold you back from collaborating with UM? Would you think that a partnership with UM would improve your performance on UN SDGs?

      - What do you think would be necessary to create such a partnership?

8. Do you have partnerships with other sustainable actors in Maastricht?
9. What obstacles could see arising in a partnership with UM (if any)?

10. What are your future goals (in terms of sustainability)? How are you planning to achieve them? How do you think UM could contribute to achieving them?

9.2. Survey distributed to sustainability actors in Maastricht

Q1. DECLARATION OF CONSENT

I consent for my responses to be recorded for the research project: Universities and Partnerships in reaching the United Nations Sustainable Development Goals in a European-Global context.

Executive investigator(s): Carolina ALDAMA DEWIT, Lea DAHLKE
Institution: University College Maastricht, The Netherlands

As part of our undergraduate degree at University College Maastricht, we are engaging in a research project mapping the network of sustainability actors in Maastricht and the partnerships with Maastricht university. Our research question is: How to assess and introduce partnerships in university activities with respect to production, dissemination, and use of technological and social innovations for reaching the United Nations Sustainable Development Goals (UN SDGs) in Maastricht.
We would like to ask you some questions about this topic as your organisation is a key actor in the field of sustainability in Maastricht. Participation is voluntary. The survey will take approximately 20 minutes to complete.
For any questions about the project or how your data will be used, please contact c.aldamadewit@student.maastrichtuniversity.nl or l.dahlke@student.maastrichtuniversity.nl

I accept to participate in the research project about mapping the network of sustainability actors in Maastricht and the partnerships with Maastricht university conducted by Carolina Aldama Dewit and Lea Dahlke, undergraduate researchers at University College Maastricht.

I am 18 years or older.

I consent that the information will be shared publicly within the research project.

I consent to be contacted again by the researchers for additional questions or an interview.

I consent for my contact details to be shared with UNU-Merit and Maastricht University for further collaboration on SDGs (if so, please provide your contact details).

I wish to receive a copy of the research report when it is finished.

Q2. What is the name of your organisation?

Q3. Which actors manage your organisation?

Student(s)

Corporation

Maastricht University

Civil Society

Alumni

Other

Q4. What are the aims of your projects which are involved in sustainability?

Q5. If you are familiar with the SDG's, which SDG(s) does your organisation tackle?

SDG 1: No Poverty	SDG 10: Reduced Inequality
SDG 2: Zero Hunger	SDG 11: Sustainable Cities and Communities
SDG 3: Good Health and Well-being	SDG 12: Responsible Consumption and Production
SDG 4: Quality Education	SDG 13: Climate Action
SDG 5: Gender Equality	SDG 14: Life Below Water
SDG 6: Clean Water and Sanitation	SDG 15: Life on Land
SDG 7: Affordable and Clean Energy	SDG 16: Peace, Justrice and Strong Institutions
SDG 8: Decent Work and Economic Growth	SDG 17: Partnerships to achieve the Goals
SDG 9: Industry, Innovation and Infrastructure	Not applicable

Q6. Of the SDGs selected, which targets does your organisation tackle?

SDG 1: End poverty in all its forms everywhere

1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day

1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable

1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance

1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round

2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons

2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment

2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality

2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed

SDG 3: Ensure healthy lives and promote well-being for all at all ages

3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births

3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births

3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being

3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol

3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents

3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes

3.4 reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being

3.5 strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol

3.6 halve the number of global deaths and injuries from road traffic accidents

3.7 ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes

3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all

3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes

4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education

4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university

4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations

4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy

4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

SDG 5: Achieve gender equality and empower all women a

5.1 End all forms of discrimination against all women and girls everywhere

5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation

5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation

5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate

5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision- making in political, economic and public life

5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on

SDG 6: Ensure availability and sustainable management of water and sanitation for all

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all

6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

7.1 By 2030, ensure universal access to affordable, reliable and modern energy services

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

7.3 By 2030, double the global rate of improvement in energy efficiency

SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries

8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors

8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services

8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead

8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value

8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training

8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms

8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment

8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products

8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries

9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets

9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending

SDG 10: Reduce inequality within and among countries

10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average

10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status

10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status

10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard

10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality

10.5 Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations

10.6 Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions

10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies

SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable

11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage

11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

SDG 12: Ensure sustainable consumption and production patterns

12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries

12.2 By 2030, achieve the sustainable management and efficient use of natural resources

12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses

12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities

12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

SDG 13: Take urgent action to combat climate change and its impact

13.1 Strengthen resilience and adaptive capacity to climate- related hazards and natural disasters in all countries

13.2 Integrate climate change measures into national policies, strategies and planning

13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans

14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics

14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information

14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation

14.7 By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism

SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation- neutral world

15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development

15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed

15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products

15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species

15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

16.1 Significantly reduce all forms of violence and related death rates everywhere

16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children

16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all

16.4 By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime

16.5 Substantially reduce corruption and bribery in all their forms

16.6 Develop effective, accountable and transparent institutions at all levels

16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels

16.8 Broaden and strengthen the participation of developing countries in the institutions of global governance

16.9 By 2030, provide legal identity for all, including birth registration

16.10 Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements

SDG 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

17.1 Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection

17.2 Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries

17.3 Mobilize additional financial resources for developing countries from multiple sources

17.4 Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress

17.5 Adopt and implement investment promotion regimes for least developed countries

17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge- sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism

17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed

17.8 Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology

17.9 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North- South, South-South and triangular cooperation

17.10 Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda

17.11 Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020

17.12 Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access

17.13 Enhance global macroeconomic stability, including through policy coordination and policy coherence

17.14 Enhance policy coherence for sustainable development

17.15 Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development

17.16 Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries

17.17 Encourage and promote effective public, public- private and civil society partnerships, building on the experience and resourcing strategies of partnerships

17.18 By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts

17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

Q7. Can you provide evidence for how you tackle those SDG's?

Q8. Does your organisation have a partnership with Maastricht University?
Partnership = physical infrastructure (e.g. Sustainability Hub), human capital (skills and knowledge, e.g. legal support), financial capital, social capital (e.g. networking, events), cultural capital.

Yes

No

Q9. If yes, how strong would you qualify this partnership?

| 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |

0=very weak 100=very strong ☐ Not Applicable

Q10. If there is a partnership, what are some concrete examples of it? (example: financial aid, material provided, promotion, visibility, networking opportunities...)

Q11. If there is a partnership, would you consider collaborating with UM an effective strategy in raising overall performance on sustainability? Have there been any difficulties in collaborating with Maastricht University?

Yes because...

No because...

Difficulties in collaborating with Maastricht University (please specify)

Not applicable

Q12. If there is no partnership yet, are there any perceived barriers to a collaboration? If so, please specify!

Yes because...

No

Q13. If there is no partnership yet, what would you expect from such a partnership? (example: financial aid, material provided, promotion, visibility, networking opportunities...)

Q14. Does your organisation collaborate with other sustainability actors in Maastricht? (If so, please specify)

Yes, they are:

No

Q15. Please specify your future aims for the organisation.