Qatar University
Zero-Waste Action Plan
2020 – 2025

A guiding document for
a circular institution of the future

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1 June 2020

Director's Message
Facilities & General Services Department

At Qatar University (QU) we recognize sustainability as our guidepost for building a thriving future. This zero-waste plan outlines QU's proposed commitment, describes the desired situation, the process of change, priorities, goals, targets and activities that will allow us to reach this goal.

FGSD aims to go 50% zero-waste by 2025

Zero-waste means both the management approach and the ultimate goal. Management wise, prevention, repair and reuse should be favored over recycling, landfilling and incineration. We will achieve this by optimizing what materials enter the system, how they are treated and what happens to them as they leave.

This plan builds on various achievements to date, such as paper consumption reductions and recycling, waste audits, soon to be launched plastic bottles collection program, green events guidelines and other efforts in this area. It unites and extends those efforts into more ambitious and exciting opportunities.

The indicted priority areas in this study have been developed to facilitate the engagement of various parties involved into QU sustainability and waste issues and reflect a common and shared vision. They were designed to provide necessary support for the transition and can be used by our students, employees and partners who would like to contribute to the zero-waste path. Thus, regardless of your position at the university or whether you are our partner, we hope this plan serves as your effective entry point into our journey towards zero-waste.

Sincerely,

Eng. Mai Fetais Al-Marri
Director, Facilities & General Services Department

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Executive summary

The global consumption of natural resources and production of waste has reached unsustainable levels and is on track to continue growing even further. Qatar University (QU) is responding by committing to ensure its campus is a model for sustainable consumption and formulating an ambitious plan for creating a circular economy on campus.

This circular economy action plan contains Qatar University's **Zero-Waste Vision 2025 Action Plan**, which unites and extends existing QU waste prevention efforts into a systematic ambitious and exciting opportunities. This plan will be implemented and monitored by the Qatar University Zero-Waste Initiative (QUZWI). The central aim of the plan is to achieve an ambitious waste target by 2025 operating under four central pillars of the Action Plan:

1. Creating **governance and monitoring structure** with strong partnerships
2. Developing a **waste measurement and prevention system**
3. Using a **communications strategy** to engage campus employees & students
4. Fostering a **culture of innovation and social change** within QU

Firstly, a **governance and monitoring structure** will be created with the aim of assigning deliverables and indicators to priority areas. In addition to the waste measurement and prevention system, these will include developing partnerships with key waste management stakeholders, as well as new financial resources to fund new waste initiatives. All these efforts will feed into the release of an annual Zero-waste Progress Report to be compiled and disseminated by QUZWI.

Secondly, developing the **waste measurement and prevention system** will be necessary to measure more precisely the waste production at Qatar University, as well as the success of waste prevention policies. This will be done by implementing the annual Campus Waste Audit along with continual and more frequent data collection initiatives. The key waste streams targeted under this plan are paper, single-use items including plastics, and food. Beginning with these key waste streams, effective waste prevention and management policies will be identified, implemented, and measured for effectiveness.

Thirdly, a **communications strategy** at Qatar University will be initiated to communicate zero-waste initiatives to students and employees. The main body handling communications will be the QUZWI Communications Program, which will develop a platform to disseminate information like the Zero-waste Progress Reports. The communications strategy will also focus on fostering engagement and feedback a number of ways, including university surveys.

Finally, QUZWI will focus on fostering a **culture of innovation and social change** throughout the campus by 2025. This will be achieved by using both the Communications Program and the academic resources on campus. Novel projects will be started around waste practices aimed at engaging students and employees, and allowing them to be agents of change. The second part of campus innovation will also seek to involve the classrooms in the initiative to promote QU

academic leadership in waste practices.

Going forward, the QU Zero-Waste Vision 2025 Action Plan will be improved and revised using feedback from key waste stakeholders and campus members. New waste streams will be identified and added, research partnerships developed, and innovative waste practices will be adopted into the novel circular economy vision at Qatar University.

Towards a circular planet

The aim of ensuring the sustainable production and consumption of materials is a key issue that the world faces in the upcoming decades. By 2050, the global extraction and processing of raw materials is projected to nearly double levels in 2017[1], while global waste production is projected to grow by 70%[2]. The unsustainable extraction and processing of raw materials will lead to large increases in greenhouse gas emissions, the destruction of biodiversity and ecosystems, air and water pollution, and an increase in health issues around the globe.

The global and local trajectory of economic development and waste production needs a course correction as quickly as possible. Even with some decoupling of economic growth with natural resource use, the levels of waste production and materials use are on course to continue growth despite technological advancements[3]. With these facts in mind, Qatar University is responding by implementing measures towards making its campus an example of sustainable consumption and ecological innovation that can be replicated throughout the Gulf region and beyond.

Sustainability in Qatar

Waste generation in Qatar is a critical issue and is set to follow the trajectory of previous paths of economic development that produces large amounts of material waste.[4] Currently, one person in Qatar generates 1.27 kg of waste a day or 463 kg of waste per year, which is almost twice as much as the global average[5]. As a country, it is at the early stages of exploration towards its potential for circular economy and zero-waste. Incineration and landfilling still serve as primary approaches to dealing with waste, which generates much less value than other circular economy approaches.

Qatar National Vision 2030 outlines commitment to a balanced consideration of the three pillars of sustainability: economic, social and environmental. The challenges waste generation in Qatar present an opportunity for Qatar to benefit from creating a zero-waste society and to support the achievement of the United Nations Sustainable Development Goals[6]; in particular, Sustainable Development Goal 12: Responsible Consumption and Production. We are confident that Qatar has the potential to become a global leader in driving innovation and change for sustainability.

Qatar aims to achieve a 15% recycling rate for municipal waste by 2022. Recycling rates for common recyclables such as plastics and paper were at 1.8% each in 2017[7]. Although the current goal of 15% is ambitious given Qatar's current recycling rate, it is far from the best

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[1] OECD (2019), *Global Material Resources Outlook to 2060: Economic Drivers and Environmental Consequences*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264307452-en.

[2] World Bank, 2018. What a Waste 2.0

[3] OECD (2015), *Material Resources, Productivity and the Environment*, OECD Green Growth Studies, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264190504-en.

[4] Clarke et al. 2017. Towards a more sustainable waste management in Qatar: Retrofitting mindsets and changing behaviors

[5] World Bank, 2018. What a waste 2.0

[6] https://www.un.org/sustainabledevelopment/sustainable-development-goals/

[7] Qatar planning and Statistics Authority, 2017. Environmental Statistics

practices globally; many EU countries have achieved recycling rates above 60%, paired with high rates of prevention and a fast transition towards a circular economy. Therefore, kickstarting zero-waste in QU is an important effort that aims to serve as a case of best practice and spur more ambitious trajectories at the local and national scale.

Creating a circular economy at Qatar University

At Qatar University, our goal is to create a thriving and sustainable society that lives in harmony with nature. For this reason, QU is committed to developing a circular economy on its campus (**Box**). The transition to a circular economy will be aligned with QU's values of excellence, integrity, academic freedom, diversity & inclusion, innovation and social responsibility. QU's envisions a university that is "regionally recognized for distinctive excellence in education and research, an institution of choice for students and scholars and a catalyst for the sustainable socio-economic development of Qatar."

Our efforts towards a more resource efficient, circular model of consumption will be aligned with the goal of propelling QU into the forefront of practice and research in the circular economy. Every student and member of staff will have opportunities to grow and innovate, while at the same time working towards a clean and livable environment. We welcome our students and employees to envision that this future is not only possible, but that they themselves can become a part of the circular transition.

Box: Why focus on the circular economy?

The circular economy builds on new approaches to design materials and manage their life cycle to combat several environmental impacts. It will promote new ways of doing business, new social and policy arrangements, and new approaches to managing supply chains at local and global levels. Changing the de facto methods of production and consumption is especially necessary when considering the environmental impacts produced by the current system.

The environmental impacts associated with materials use are a result of the “linear" model of materials production and consumption. In the linear cycle, earth’s natural resources are taken from the earth, refined into usable products, and disposed of when they are no longer useful. Using natural resources in this way is not sustainable in the long term, with resources being consumed faster than nature can recover. To keep the planet in balance we have to adopt new methods of consumption, respectful towards its limited capacities, moving to a more circular approach.

Despite current efforts to increase sustainable production and consumption, the linear method of production and consumption still accounts for a large share of global materials use. The interconnectedness of the global economy means that each country has a role to play in the future increases in waste generation. The responsibility for taking measures to mitigate the waste generation should be taken at multiple levels of governance, as well as within different organizations.

In the ideal circular economy, the use of natural resources is planned from the point of their extraction to the point of their disposal. The goal of this is to create a “circle” of consumption, where natural resource extraction is maintained at an absolute minimum, and materials that are being used by the economy are either reused, repurposed, or recycled Figure 1. For this reason, the engagement of all parts of the material cycle are necessary to implement circular materials use.

Figure 1: Outline of a circular economy

Source: https://srip-circular-economy.eu

Universities in particular can help in facilitating the multiple benefits from switching to a circular approach of material consumption, from helping to combat climate change to generating economic value from new products and jobs. Universities have a natural advantage in this realm from intergenerational perspectives and a body of academics that can aid in fostering innovative solutions.

At QU we have a part to play in the 'use, reuse, repair' and 'recycling' stages of the circular economy. By minimizing our use of single-use items, choosing reusable alternatives, engaging in repair and reuse activities, not wasting food and ensuring we are recycling correctly, we can contribute to a more sustainable university and a wider circular economy.

Embedding international frameworks into University goals

The circular economy is a concept that is gaining traction internationally as a way to achieve economic development using as few resources as possible. The central principles of the circular economy were first adopted in 2008 by the G8 in the Toyoma Framework and the Kobe 3R action plan. The 3R action plan set into place the central tenets of "reduce, reuse, and recyle" as the founding principles of the circular economy. One of the main principles behind the circular economy is to decouple economic growth from natural resource use. In practice, this comes about by increasing things like the resource efficiency of materials use or enhancing the recyclability of materials.

Additionally, the Global Sustainable Development Goals (SDG)[8] adopted by the United Nations feature several targets by 2030 that target the efficient use of resources. The Zero-waste Plan will strive towards fulfilling these targets. In the process of this, we will ensure that our efforts will help to mitigate the effects of climate change, which is one of the key global challenges of today. We will therefore adopt a nexus approach to zero-waste, which will seek to uncover links between waste and other sustainability issues; strengthening potential win-wins and minimizing trade-offs.

The Qatar University Zero-waste 2025 Action Plan will strive to align its zero-waste targets with previous international efforts to join in the global fight against waste and to share the best waste practices and experiences from the Gulf region.

SDG Targets related to the efficient use of natural resources

- **SDG 7.3:** By 2030, double the global rate of improvement in energy efficiency.
- **SDG 8.4:** Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation.
- **SDG 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.
- **SDG 11.B:** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, [and] resilience to disasters.
- **SDG 12.2:** By 2030, achieve the sustainable management and efficient use of natural resources.

[8] https://www.un.org/sustainabledevelopment/sustainable-consumption-production/

- **SDG 12.3:** By 2030, halve per capita global food waste at the retail and consumer levels.
- **SDG 12.5:** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

Zero-Waste Vision 2025 Action Plan

Qatar University will operate within a five-year framework to begin implementation and to measure progress towards a zero-waste campus, which is called Qatar University Zero-Waste Vision 2025 Action Plan. Qatar does not currently have in place detailed regulations for sustainability or waste practices. Therefore, the opportunities to create a unique approach to the zero-waste transition is particularly evident for QU. The transition to a zero-waste campus will provide an opportunity to implement a variety of initiatives towards creating a sustainable culture on campus. At the same time, Qatar University will draw from the best global practices and integrate the most appropriate framework work within local capacities. We will strive to create a zero-waste culture and a community of change agents.

The Qatar University Zero-waste Initiative (QUZWI) is leading the efforts towards making Qatar University a zero-waste campus. This branch will be responsible for the implementation and future revision of the **Qatar University Zero-Waste Vision 2025 Action Plan** (also referred to as 'the Action Plan')**.** The Vision Statement is developed by the Environment & Sustainability Section of the Facilities & General Services Department and should be reviewed by a broader community of relevant actors to be involved in the process. It outlines a longer-term perspective for our efforts, bringing together the best of what we can imagine for a truly zero-waste QU while staying in touch with reality.

Qatar University Vision Statement:

QU will implement a zero-waste target for 2025

We aim to achieve this target by following the three pillars of Zero-Waste Vision 2025:

1. Creating **governance and monitoring structure** with strong partnerships
2. Developing a **waste measurement and prevention system**
3. Using a **communications strategy** to engage campus employees & students
4. Fostering a **culture of innovation and social change** within QU

The Action Plan

Based on the aspirations of the Action Plan, QUZWI has developed a first version of a comprehensive Action Plan. The action plan includes the development of full-scale waste audits, waste prevention policies, and stakeholder engagement to ensure that the ambitious agenda is linked to the real-world context. This plan builds on various achievements already initiated at Qatar university, while at the same time improving them and expanding their scope.

The four pillars of the Action Plan and their actionable items are described in Figure 2. The three pillars are intended to address three crucial steps towards achieving a circular transition at QU, including significant reductions in waste generation.

Creating a **Governance and Monitoring Structure** will be necessary for QU to manage a variety of projects, create connections with relevant parties, and manage financing. A monitoring framework developed by QUZWI will help with the management of various waste initiatives and the measurement of success. Particularly, it will be important to engage local waste authorities and companies to better understand the local waste context and constraints. It will also be important to expand fundraising activities to finance new waste initiatives.

The development of the **Waste Measurement and Prevention System** will allow us to observe more precisely levels of waste generation at QU. The focus will be on municipal solid waste for the time being, which is waste generated regularly by staff and students at the University, such as paper, plastics, and organic waste. After implementing the measurement system and waste prevention policies, we will be able to measure the effectiveness of different policies. This will be a key effort towards achieving the waste reduction target.

Thirdly, it will be necessary to develop a **Communications Strategy** on campus to communicate the progress of The Action Plan and encourage positive behavioral change. The Zero-waste Platform will release regular communications on new zero-waste practices and help to facilitate a dialogue.

Finally, A primary aim will be to facilitate a new **Culture of Innovation and Social Change** on campus surrounding the use of materials, with students and employees granted agency to bring about this culture.

!!! IMPORTANT NOTE !!!
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Figure 2: The QU Zero-Waste Vision 2025 Action Plan

QU Zero-Waste Vision 2025 Action Plan

The four pillars of the Action Plan

1. **Governance and monitoring structure**
   - 1.1. Monitoring Framework
     - A Monitoring Framework for measuring waste generation and other activities will be developed by QUZWI.
   - 1.2. Multi-stakeholder outreach
     - Outreach to key waste partners will be conducted to gain feedback on the Monitoring Framework, Waste Audit, and Progress Report.
   - 1.3. Funding and financial resources
     - Funds for the waste initiative will come from the QU budget, and supplemented by fundraising activities.
   - 1.4. Zero-Waste Progress Report
     - A Progress report will be released every year after the Campus Waste Audit to communicate the findings, as well as to communicate the effect of waste prevention and management policies and efforts in campus outreach.
2. **Waste measurement and prevention system**
   - 2.1. Waste Measurement Systems
     - An annual Campus Waste Audit will be initiated in the first year and will provide an accurate overview of waste generation at QU.
     - Ongoing data collection efforts will provide a more specific description of waste flows over time at QU.
   - 2.2. Waste prevention and management policies

- Prevention and management policies will be updated, and implementation will begin before the second University Campus Waste Audit.

3. Communications strategy

3.1. Developing the Communications Program

- The Communications Program will develop the Zero-waste Platform and Zero-waste Guidelines for employees and students at the university.

4. Culture of innovation and social change

4.1. Creating a zero-waste culture on campus

- The zero-waste culture will be a strategy based off of a framework of behavioral change around waste practices. Innovation

4.2. Promoting academic leadership

- Part of creating the culture of change will be connecting the cutting-edge research at QU with the efforts of the zero-waste initiative and including zero-waste in the curriculum.

Implementation timeline of the Action Plan

The action plan has four basic stages: planning, implementation, evaluation, and adjustment. As shown in Figure 3, the action plan has specific steps to fulfill every year until 2025. Some steps need to happen in a particular sequence in order to be implemented correctly. For example, before arriving at the Zero-waste Target, several steps need to be completed to develop the waste measurement system and waste prevention policies.

After the planning and implementation stages, the evaluation and adjustment stages will continue to improve the instruments used in this plan. As new information and feedback arrives from the multi-stakeholder outreach, the Campus Waste Audit, and the Communications Program, the Action Plan will be adjusted accordingly.

QUZWI shall also support harmonization of other plans and policies across the university, such as energy, landscape and procurement planning, considering that material flows are directly linked to the management of the university as a system with inputs and outputs.

The primary aim by the release of the final action plan is to have reliable metrics from the Waste Audit, an achievable target by 2025, and detailed descriptions of program initiatives by QUZWI to implement in order to achieve this target.

!!! IMPORTANT NOTE !!!
The content in this box is suggested to be included into a new graphic, and was not prepared to be a final product.

Figure 3: Implementation of the Action Plan

2020

Initiation of the Action Plan

Waste Prevention and Management

- The **Campus Waste Audit** will be initiated for the first year.

Governance and Monitoring

- The first **multi-stakeholder outreach** will be conducted with key waste partners to gain feedback on the Monitoring Framework.
- A **Monitoring Framework** for waste generation developed by QUZWI.

Communications & Cultural Change Strategy

- The **Communications Program** will be established**.**

2021

Waste prevention policies are implemented

Waste Prevention and Management:

- **Waste prevention and management policies** will be identified, and implementation will begin before the second University Waste Audit.
- The second **Campus Waste Audit** will be implemented.

Governance and Monitoring

- The first annual **Zero-Waste Progress Report** will be released.
- The second **multi-stakeholder outreach** discusses and gets feedback for the Zero-Waste Progress Report.
- Adjustments to the **Monitoring Framework** will be made as needed.

Communications & Cultural Change Strategy

- The **Communications Program** will be re-evaluated and improved upon.

2022-2025

Waste policy refinement

Waste Prevention and Management:

- The **Waste prevention policies** will be re-evaluated and adjusted towards achieving the QU Zero-Waste target if necessary.
- Creation of the first **QU Zero-Waste Target for 2025**.
- Implementation of the **3rd Campus Waste Audit**.

Governance and Monitoring:

- The second annual **Zero-Waste Progress Report** will be released.
- The third **multi-stakeholder outreach** discusses the Progress Report and of the QU Zero-Waste target for 2025.
- Adjustments to the **Monitoring Framework** will be made as needed.

Communications & Cultural Change Strategy

- The **Communications Program** will be evaluated and improved upon, with feedback from the students and University employees.

1. Governance and monitoring structure

A governance structure will be established by QUZWI to oversee the implementation of the waste reduction targets and measures. In addition to leading the efforts in the implementation of the Campus Waste Audit and prevention policies, the governance structure will develop a comprehensive monitoring framework to monitor all the waste initiatives, build a network of local stakeholders, and develop funding structures to finance zero-waste initiatives. As the plan progresses into the evaluation and adjustment phases, efforts will be made to expand and improve the governance capacity (**Box**). The connection of all these governance efforts will feed into the release of an annual Zero-waste Progress Report.

In this section we will describe how QUZWI will create and adjust the Monitoring Framework, implement the multi-stakeholder outreach, funding activities, and deliver an the annual Zero-waste Progress Report.

Box: Expanding the governance capacity

The plan operates within the geographical boundaries of QU main location. This means that all our facilities (both academic and non-academic), outdoor areas and other properties managed by QU shall participate in a gradual shift towards zero-waste.

A number of other internal documents, such as tender documentation, will be adjusted to fulfill the requirements of this plan. All stakeholders, both internal and external, including service providers and other third parties operating within this area shall also be obliged to follow the provisions of this plan.

This plan has been approved by the university board and its effective period spans from November 1st, 2020 until November 1st, 2025, which means we have 5 years to bring our vision to life.

A working group within the university will be established to ensure effective implementation of this plan. The working group will consist of members from the QU Sustainable Operation Advisory Committee (QU-SOAC) and will have a minimum of two student representatives.

Further development and implementation of this plan shall also require active collaboration between internal and external stakeholders.

1.1. Monitoring Framework

Our goal is to set up a holistic framework that facilitates continuous and balanced progress in all areas, effective collaboration and use of resources, management of risks and timely revision.

A detailed monitoring system shall be established to track progress of the Campus Waste Audit, prevention policies and other campus waste initiatives. The monitoring system shall be based on deliverables and indicators covering several key areas outlined below.

Frequent data collection, as well as quarterly meetings and annual reporting, shall be established to ensure progress towards zero-waste. We will also leverage the power of digital technology and develop an integrated online platform linked to the QU website, bringing together multiple facets of the zero-waste agenda.

In order to monitor the progress of this plan, monthly data shall be collected on each parameter. Annual Campus Waste Audits shall be undertaken, with a comprehensive report produced to keep track of progress across all target areas and will include case studies of success and failures to support future learnings ('Zero-waste Progress Report'). Financial data for all zero-waste-related issues will be tracked.

Reviews of record-keeping related to waste collection and diversion shall be made to explore the feasibility of improving the data collection and analysis capability using current systems. We will also assess the need and feasibility of implementing automated tracking systems such as weight and location-based systems and bar code readers in collaboration with recycling service providers. Finally, performance monitoring shall be integrated into staff training, e.g. waste collection workers or dining hall kitchen staff.

The plan shall be revised each year to ensure it continues to be aligned with the present achievements and remains open to new possibilities. Meanwhile, new goals or elements may be added in case new exciting opportunities that are in with the basic zero-waste principles appear on the horizon. The tools and methods used to make new waste decisions are described in **Box**.

Key performance indicators and deliverables will be developed for each of the targeted measures and milestones for achievements shall be determined in collaboration with key stakeholders.

Box: Zero-waste decision making process

There will be some cases where the standard sustainable choices may not make sense in context of Qatar University. For those situations, QUZWI has devised a process that will help us make the best possible choices in line with the zero-waste principles.

Our overall approach shall be built on a multi-criteria decision making, which includes an initial analysis of situation, coming up with relevant alternatives, devising a context- sensitive decision framework with criteria weights, methods and metrics allowing to make the best possible choices and final selection of the alternatives based on verifying the achieved results.

Material Flow Assessment (MFA), Supply Chain Analysis (CSA) and Conceptual Value Assessment (CVA) and a number of other assessments may be performed or employed to understand the current situation and bridge the desired future with the present through a set of possible solution scenarios and concrete solutions or project alternatives to get going with.

Any project to be considered for implementation must also meet a minimum criteria assessment. Some examples may be absence of toxic and conflict materials, design for longevity, reusability and recyclability, carbon footprint ratings, or adherence to relevant supplier sustainability standards. If there is no national and local environmental legislation to draw upon for minimum criteria, QUZWI will be able to devise new solutions.

Other methods relevant of our analysis can be included but are not limited to Cost- Benefit Analysis (CBA), Environmental and Carbon Footprint Analysis (EFA and CFA), Life Cycle Analysis (LCA), LCSA (Life Cycle Sustainability Assessment), EEIO (Environmentally Extended Input-Output Analysis, Total Life Cycle Costing (TCC), and Total Cost of Ownership (TCO) allowing to go beyond initial cost optimization and consider a broader set of sustainability considerations.

Key deliverables and indicators

Overall progress of the Plan and initiatives which have been implemented will be monitored against a set of deliverables (D) and indicators (I) for each priority area. Deliverables are considered as concrete actions to be performed and reported. Indicators will be measured on an ongoing basis and be used as a measure of successful and unsuccessful waste practices.

Reduce, reuse, and recycle

Aim: Adhering to the 3Rs policy, the university will promote the reduction of waste generation, the reuse of materials where possible, and improvement of recycling practices.

D.1 List of measures broken down by priorities, their goals, outcomes and contribution to the overall progress
D.2 A minimum of 2 swap and repair events per year

D.3 Installation of reverse vending machines for plastic waste
D.4 Rollout of the SUSTAIN initiative
D.5 Checklist of documents to be aligned with the zero-waste principles

I.1 Total waste generation per capita (kg/year)
I.2 Number of reuse/redistribution infrastructure points
I.3 Number of recycling points broken down by material types and size of containers/stations
I.4 Total material waste recycled (kg/year)
I.5 Contamination levels for all separately collected recyclables, (%)
I.6 Share of products and services procured in accordance with minimum zero-waste requirements, (% by value)

Organic loops

Aim: Ensure closing the loop for all organic materials flows through collecting composting or turning into biogas all organic waste that cannot be prevented.

D.6 Summary report from food waste survey
D.7 Installation of on-site food waste recycling infrastructure

I.7 Total food donated, (kg/year)
I.8 Total food waste composted or anaerobically digested, (kg/year)
I.9 Organics contamination level, %
I.10 Total garden waste composted or anaerobically digested, (kg/year)
I.11 Total garden waste composted or anaerobically digested, % from the baseline

Campus Waste Audit and measurement

Aim: The university will establish and adhere to waste measurement targets for identified waste streams, with the goal of continued improvement of data collection and quality with which progress can be measured.

D.8. Annual summary report of the Campus Waste Audit results

I.12. One university-wide waste audit conducted each year
I.13. The number of waste streams included in the audit

Waste governance

Aim: Establish a campus waste governance system that implements policies that will aid in reaching the waste reduction targets. This will include systems to monitor, evaluate, and revise them in a timely manner.

D.9 Quarterly meetings of the working group
D.10 Annual Zero-waste Report on progress
D.11 Monitoring system established with monthly data collection

I.14. Number of meetings per year of the Zero-waste Working Group

Cultural shift

Aim: Establish and use communication programs to facilitate bottom-up participation and shape a zero-waste culture within the university.
D.12 An annual survey on zero-waste knowledge, attitudes, and practices
D.13 Report from the campus-wide survey
D.14 QU Zero-waste Platform providing a map, guidelines, tips, database and other relevant features

I.15 Number of students that have participated in academic zero-waste activities

Innovation and synergy promotion.

Aim: Encourage the development and adoption of new waste practice techniques, technologies, and social norms that transform behavior. Foster innovation by including all stakeholders to communicate through collaboration, best practice sharing, and to build new ideas on waste practice.

D.15 Develop a nexus between materials management and other areas whenever feasible, such as climate, energy and transport
D.16 List of measures aimed at strengthening and supporting identified synergies
D.17 Zero-waste innovation challenge held in QU twice a year
D.19 Annual review of best zero-waste practices implemented on campus with rewards to initiators

I.16 The number of synergies established each year

Multi-Stakeholder Outreach

Aim: Develop local networks with the goal of creating a new system of waste collection, ideas sharing, and understanding better the local context of waste.
D.20 A list of identified key stakeholders

I.17 Number of meetings held with stakeholders each year

Academic partnerships

Aim: Support research and curriculum changes to enhance scientific knowledge on zero-waste

D.21 Annual list of all zero-waste partnerships broken down by partner type and priority areas → evolve
D.22 Annual list of new potential zero-waste partnerships both locally and across the globe → develop

I.18 Number of zero-waste initiatives included in the curriculum
I.19 Number of research projects connected to the goals of the zero-waste plan

Deliverables and key indicators will also be developed and monitored for each individual waste prevention and management measure put forward as part of the zero-waste journey.

1.2. Multi-stakeholder outreach

We highly encourage active collaboration with partners, local authorities, businesses, and other actors to ensure a more effective transition towards zero-waste and new innovative solutions. We seek to work together with global associations, public and private sectors, the state authority and civil society organizations. Engaging a range of stakeholders will allow us to benefit from specific expertise and experience, as well as ensuring the effective implementation of the QUZWI.

Internal entities within QU which will be stakeholders to the plan include the Facilities & General Services Department, Capital Projects Department, Procurement and Contracts Department, Information Technology Department and VP Office for Strategy and Planning.

External stakeholders include recycling service providers including the Al-Suwaidi Paper Factory Elite Paper recycling AVERDA, standard-setting organizations such as the Gulf Organization for Research and Development (GORD), local non-governmental organizations with a focus on sustainability, the State authority of The Ministry of Municipality and Environment, The Doha municipality, the private sector, and global organizations such as The Association for the Advancement of Sustainability in Higher Education (AASHE).

Collaboration with the above stakeholders can enable QU to benefit from expertise and knowledge sharing; can help to close the loops on all material types at the highest level of value and in line with other zero-waste principles and will support us to build effective alliances on promoting zero-waste and circular economy throughout the region. Finally, we plan to strengthen our efforts for participation in global sustainability alliances, such as AASHE, which will allow us to consistently align zero-waste efforts with other facets of sustainability and more actively engage into the global learning network in this field.

1.3. Funding and financial resources

Funding structures will be developed with the aim towards supplementing the QU budget and facilitating the expansion of the policy instruments and the monitoring activities.

While the plan shall be funded within QU budget, it also suggests a diversified structure of funding its initiatives. This could include support from companies who would like to showcase their commitment to sustainability and zero-waste, as well as funding of projects through grants and other sources. Part of the initiatives shall also be implemented on a volunteering basis. The allocation of resources for different zero-waste projects and initiatives shall be decided by the zero-waste working group.

1.4. The Zero-waste Progress Report

The annual Zero-waste Progress Report (ZWPR) will be a key deliverable of QUZWI. The aim of the progress report will be to provide a summary of all the University efforts towards zero-waste in one document that will be released every year. One of the primary functions of the progress report will be to provide a summary of the findings of the Campus Waste Audit and waste prevention policies. This will be done by the establishment of a Monitoring Framework, which will cover the measurement activities in the waste streams as well as indicators of other university activities. The progress report will provide an update of developments in the multi-stakeholder outreach, other zero-waste projects and initiatives on campus, and funding activities.

The dissemination and strategy of delivering this document will be outlined further in the section dealing with the Communications Program.

2. Waste measurement and prevention system

Our waste reduction journey will begin by targeting the most common waste streams in QU, including paper, plastic, food and garden waste. These areas can be easily addressed through targeted prevention measures, as well as being key areas for leveraging the impact of material loops when recycled correctly.

The aim of waste prevention and management will be to minimize waste generation and ensure that any waste which is generated is correctly recycled. We will develop a measurement system for waste at QU that can be utilized to design and implement policies, as well as assessing the effectiveness of these policies. These findings will be utilized to create a zero-waste target that will be the key goal for the Action Plan. In this section we will describe the steps for preparing the campus waste audit, identifying and implementing the Waste Prevention Policies.

2.1. Arriving at a Zero-waste Target for 2025

The idea of a zero-waste campus is not a new one. A 90% waste reduction target has been set by ivy-league institutions in the United States and in the EU[9]. Following these examples, Qatar University will aspire for an ambitious waste reduction target while at the same time taking into account the capacity of university resources and other limitations. Arriving at an ambitious yet achievable waste reduction target will include taking several steps before enacting it:

1. Identify key waste streams and bolster knowledge of current waste practices through implementing the Campus Waste Audit and other data gathering practices.
2. Implement waste prevention and management policies and to measure their effectiveness.
3. After these steps have been conducted and the effectiveness of waste prevention policies can be observed, QUZWAP will be in a position to propose a waste reduction target of up to 90% for 2025.

2.2. Identifying the key target streams

The Action Plan identifies three primary waste streams to target. Previous University waste audits have identified paper, plastics, and food wastes three of the most significant sources of waste on the University campus.

Paper recycling has started in QU in June 2017 and so far and is one of the most successful initiatives compared to all other material streams, with high coverage of paper collection and two dedicated partners that help to make this happen. Managing paper requires a balance between eliminating unnecessary uses while avoiding excessive amounts of electronics that can also negatively impact the environment. Having said that, we will be exploring ways to embrace digitalization to minimize paper use across the university, including online reading materials and initiatives to limit unnecessary printing.

[9] https://stanfordmag.org/contents/what-if-only-10-of-our-waste-went-to-the-landfill

Plastics and single-use disposables are an important source of waste on the University campus. Only 9% of plastics that have ever been produced have been recycled[10]. Single-use plastics such as water bottles, bags and cups are often utilized for just a short amount of time but then can exist in our environment for hundreds of years. When plastics end up in the environment they break up into smaller pieces, eventually becoming microplastics which can be harmful to humans and animals. Our strategy shall be simple: eliminate all uses of disposable plastics where possible.

Food waste is another primary source of waste on campus. At QU we aim to close the loop on all organic materials such as food and garden waste by preventing waste where possible and ensuring the sustainable management of organic waste generated which cannot be prevented. According to the United Nations Food and Agriculture Organization, around 1.3 billion tons of food produced for human consumption around the world is lost or wasted every year[11]. Food waste is linked to issues of climate change, resource availability, water scarcity and food security. At QU we are committed to taking steps to prevent food waste and ensure that any food waste generated is managed in an environmentally-sound manner.

Currently, all waste except for paper and green waste is collected by the municipality. There is limited available information on the amount of waste generated or current recycling rates. To ensure sustainable management of QU's waste, we aim to increase transparency about the amount produced and what happens to it when collected.

To address the above waste streams, we will first conduct a university-wide audit before designing and implementing waste prevention and management measures. Once all prevention measures have been adopted, our next priority is to develop relevant infrastructure, procedures and partnerships to achieve lasting, effective behavioral change.

2.3. Implementing waste measurement activities

In order to prioritize actions and to implement the most effective waste prevention and management initiatives, we first need to improve our understanding of how much waste is being produced, where waste is being produced, and why. Within the first year of the implementation of this plan, we will conduct a full audit of waste generation at QU to establish an accurate baseline and to ensure the most precise tracking of progress on our zero-waste journey. This baseline will provide a starting point to design waste reduction initiatives with the largest potential benefits, and to monitor the success of these initiatives once implemented.

As a first step we will conduct a **survey** among staff and students to survey their knowledge and attitudes towards waste generation and prevention across various areas. Questionnaires can be a useful tool to engage staff and students about issues of waste and to provide feedback towards waste reduction and recycling initiatives. Further details on this survey will be discussed under the section 'Communications & Cultural Change Strategy'.

The next step will be a **measurement exercise via a Campus Waste Audit** to gather accurate baseline data. This will involve working together with staff and students at the University to support our efforts towards zero-waste.

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[10] https://www.nationalgeographic.com/news/2017/07/plastic-produced-recycling-waste-ocean-trash-debris-environment/

[11] http://www.fao.org/save-food/resources/keyfindings/en/

Paper can be measured by collecting data from purchase orders of paper at the University, as well as by commitment of the persons emptying the recycling bins. Plastic bags, bottles and cups will be monitored at checkout points. We will work together with staff at supermarkets and catering establishments across campus to develop a robust monitoring framework that causes minimal disruption to general duties. As part of the monitoring exercise we will also be carrying out a survey across campus and inviting students to commit to keeping a diary to monitor their consumption of single-use plastic items.

In order to gain in-depth insight into food waste at QU, a food monitoring exercise will be conducted throughout the eateries across campus, tracking what types of food are being wasted, how much, and at which stage of the chain this waste is being produced. This will help to implement food saving initiatives at the stages where impacts will be greatest, for example purchasing, preparation, storage, cooking or consumption. We will also be exploring the best way forward to extend this monitoring exercise to students and residents at QU.

We will endeavor to undertake a university-wide audit annually.

2.4. Waste prevention policies

Waste prevention is a key priority of QU's zero-waste initiative. In accordance with the waste hierarchy, items should be prevented from becoming waste where possible, for example through opting for reusable alternatives to single-use or by taking measures to reduce food waste. Potential waste prevention policies at QU can be divided into three main categories: encouraging the repair and re-use of materials, sustainable procurement and pricing mechanisms. All of these efforts will be supported by communication campaigns, awareness raising and other engagement initiatives, which will be discussed further below in section 4, which covers the communications strategy.
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Box: Designing the policy instruments

Methods used to identify leverage points include systems mapping, design thinking, and DPSIR[12] framework. Relevant methods will be utilized during different stages of the planning process.

Policy instruments will be used towards the fulfillment of a leverage point. The criteria for a leverage point include:

1. Addressing the root causes of the problem as deeply as possible
2. Potential to affect the system as a whole, e.g. reach large audience
3. Relatively little effort required compared to the expected results
4. Capacity to change the rules of the game and sustain a new system
5. Potential for positive ripple effects that can spread far and wide
6. Clear alternative to the old solution that can be made attractive

Repairing and re-use

Items such as plastics, electronics, furniture and clothes require a vast amount of resources to be produced and, if discarded inappropriately, they can cause significant damage to the ecosystems we depend on. Therefore, it will be a priority to prevent such items from becoming waste. We plan to establish an effective collection and redistribution infrastructure for items that can be reused or repurposed, such as clothes or books. This can initially take the form of University 'swap shop' events. We also aim to host repair and re-use events for items such as electronics, furniture and other items where the value is restorable. Finally, we will explore the options to establish permanent repair and redistribution infrastructure on campus which is accessible to all.

The success of the above repair and reuse initiatives requires a commitment to changing our attitudes and behaviors towards waste. To facilitate social change, we will support the organization of lectures, repair cafes, clothes swaps, and other redistribution events to grow the culture sharing and raise awareness about the multiple positive benefits of this practice. Special campaigns shall also be held

on promoting zero-waste alternatives to single-use plastics. For example, over the long term, we will minimize and phase out bottled water sales on campus while enhancing promotion of reusable cups and bottles. Details on campaigns are discussed in the section 'Communications & Cultural Change Strategy'.

Sustainable Procurement

Sustainable procurement is a tool which can be utilized to encourage suppliers of goods and services to adhere to more environmentally friendly practices. QU has in place existing guidelines for sustainable procurement called "General Environmental and Sustainability Considerations for new Tenders and Contracts." In order for a supplier to win a contract with QU, they should meet the minimum requirements set by the University. For example, tenderers of a service such as caterers are to prepare a waste inventory of all waste types expected to be generated from their services including estimated quantities and classification which can be utilized to develop a waste management plan. Tenderers must also collect the packaging materials and used products that they supply for recycling or reuse and should have a strategy in place to achieve waste reduction and recycling in line with QU targets.

We will review procurement guidelines to:

- Phase out disposable items
- Prioritize materials which are easily recyclable, non-toxic and sustainable
- Favor items designed for longevity and fit for reuse or repair
- All plastics will be intended for multiple uses and recyclable or certified compostable
- Prioritize reusable food ware or cutlery made from plant-based fibers

As one of the first priority measures, we will facilitate in-depth revision of procurement guidelines to phase out disposables, prioritize easily recyclable, non-toxic, regenerative and sustainable materials as well as items that are designed for longevity, fit for repair, remanufacturing or upgrading and produced ensuring positive impact on the environment as verified by trusted sustainability standards. For example, all plastics purchased by the university will be intended for multiple uses and recyclable or certified compostable, with exceptions for items necessary for medical and sanitary purposes and other exceptional circumstances.

Another critical step will be the transition towards a zero-waste food ware system aimed at eliminating disposable items through procurement requirements. Whenever disposable food ware will be impossible to eliminate, food ware with plant-based fibers as key ingredient shall be prioritized, such as plain, uncoated paper bags, towels and napkins plates, plain wood or bamboo cutlery and plant fiber-based products that have a coating for moisture and grease resistance, while certified compostable. Products that are claimed biodegradable, marine degradable or otherwise degradable without being certified compostable should be avoided.

We will also give priority to partners practicing extended producer responsibility and other zero-waste compliant policies. Tender documents shall also be reviewed to ensure compliance with the zero-waste criteria. Whenever feasible, we will also give preference to used, refurbished and remanufactured goods. Over the long term, it will be important to track the

[12] https://www.eea.europa.eu/publications/92-9167-059-6-sum/page002.html

development of circular design, sustainable packaging, and similar standards and investigate opportunities to integrate into procurement processes and policies.

Waste pricing mechanisms

Pricing mechanisms, such as fees and discounts, can be utilized to incentivize the use of more environmentally friendly options.

In order to limit unnecessary printing, we will continue to allocate a set number of free printing credits per student and charge a small fee per page printed over and above this. As well as paper utilized for printing, paper straws and bags can also generate waste. Paper items such as straws and bags are often utilized as a substitute for single-use plastic items, however single-use paper items still contribute to the growing problem of waste, and prevention measures are key. In order to prevent waste from such items we will look into applying a small fee for the use of straws on campus, whether paper or plastic, as well as maintaining the fee for single-use bags and cups, which will also help to prevent plastic waste. Reusable alternatives should also be available for purchase on campus.

Students and staff who utilize their own cups for coffee and beverages on campus will benefit from a discount on their drink and we will work in collaboration with outlets on campus to explore other additional incentives.

We will support the following policies on waste pricing

- Fee per page of paper printed over and above free printing credits
- Small fee for use of paper or plastic straws on campus
- Maintain fee for single-use bags and cups
- Offer reusable alternatives such as bags and cups for sale
- Discounts for staff and students who utilize their reusable cups for coffee
- Work together with eateries to prevent food waste one campus

Following the food waste audit and monitoring exercise, we will help eateries on campus to implement waste prevention initiatives to reduce food waste and save money. Some ideas include practicing correct storage, offering various portion sizes at different prices and utilizing leftover ingredients in ‘specials’ the next day. Shops on campus can reduce prices of perishables towards the end of the day to encourage people to buy them and can explore options to redistribute remaining edible surplus to charitable organizations. We will also support staff and students in their efforts to prevent food waste when dining out or cooking at home.

2.5. Waste management policies

Any waste which cannot be prevented or reused should be recycled in an environmentally sound manner. At QU we will ensure convenient and easy use of existing infrastructure and encourage enhanced participation of students and staff.

Facilitating recycling

To facilitate paper waste recycling, we are working on a new initiative for paper collection involving both internal and external bins. A solution has already been trialed in three buildings, including small desk-side boxes in close proximity to employees in these buildings alongside the 80 liters cylindrical bins placed beside photocopiers and other paper waste hotspots such as the library and reading rooms. We aims to extend this plan to cover additional buildings of the QU campus. Any recycling baskets purchased for new buildings should be made of reused paper such as magazines or newspapers, or other local waste materials. The external wastepaper dumpsters, made from local date palm waste, will include 3 watts solar powered self-irrigation systems and level sensor to optimize collection frequency.

The feasibility of implementing campus-wide paper towel collection and recycling or composting should also be studied, including washroom pilot projects to identify the most efficient collection method and rollout of a broader program where appropriate.

We will facilitate correct recycling through:

- New system for wastepaper collection
- Feasibility study for paper towel waste management
- Onsite recycling facilities for all recyclables
- Reverse vending machines for plastic bottles
- Onsite bio-waste composters
- Monitoring of waste composition in organic bins
- Feasibility study for cooking oil collections
- Implement grass cycling for garden waste
- Optimizing waste separation through effective size, location and messaging

All recyclables produced across the campus should have onsite recycling facilities to ensure significant quantities that allow the model to remain financially viable. Otherwise, alternatives should be considered with particular rigor. If plastic, paper or metal or other waste can be avoided, it will not need to be recycled. QU shall continuously reduce the range of items that require recycling through enhanced prevention, higher added value (upcycling) and sustainability of the recycling practices.

For plastic bottles, QU is working closely with partners to install reverse vending machines to incentivize the separate collection of plastic bottles for recycling. In order to facilitate this, the preferred plastics type for recyclability are #1 (PETE), followed by #5 and #2. Plastics labeled #3, #6 and #7 plastics and those without a clear label should be avoided. The reverse vending machines can also provide accurate data on the number of plastic bottle waste generated which have been separated for recycling.

For any food waste which cannot be prevented or redistributed, we will ensure the sustainable management of food waste. Plans to install bio-waste composters and digesters are already set for 2020 in several areas across the campus. Until 2025, it will be our priority to ensure close to 100% coverage of the campus by the relevant infrastructure to avoid mixing of food leftovers with other waste and sending food waste to the landfill. To support this, responsible persons shall create a list of the prohibited items that end up in the organic fraction and necessary correction measures to be implemented, such as extra fees for disposable items which are hard to eliminate at the first stages of transition, while necessary training shall be conducted among

cafeteria staff to ensure they are well accustomed with zero-waste principles. A feasibility study shall also be conducted regarding a separate collection of cooking oil for processing into biofuels.

For garden waste, where feasible, we will practice grass cycling which is a widely accepted sustainable practice of dealing with garden waste. We will also aim to reduce yard trimming whenever feasible. In all other cases, considering that garden waste is collected separately, we will aim for 100% composting rate by 2025, establishing relevant infrastructure and changes to landscaping procedures.

To facilitate the above, we will ensure the correct sizing, optimum location, and clear messaging of bins to optimize effective separation and collection, as well as to discourage excessive waste generation. We will also implement quarterly waste characterization exercises on site to determine the most common recyclables that end up in the general waste and monitoring the most common mistakes made by students and staff in regard to overall compliance with the recycling requirements.

As a last resort, waste which is unavoidable and cannot be reused or recycled should be sent to a Materials Recovery and Biological Treatment (MRBT) facility. This ensures adherence to the waste hierarchy by diverting all waste from landfill where possible.

Box: Enhancing the waste practices for events

Zero-waste principles should be integrated into the sustainable event guidelines for all official and unofficial gatherings. The current Environmental and Sustainability Recommendations for Green Events includes guidance on environmentally friendly practices for all events hosted by QU. Some key initiatives include ensuring that:

- Reusable items should be favored over single use
- Recycling is promoted at the beginning of the event
- E-communication should be utilized for registration and updates
- There is sufficient availability of recycling bins
- All recycling bins are placed adjacent to their applicable activity with their signage
- All domestic waste is collected after the event and disposed of correctly

QU will implement a Sustainable Events Policy for events held at the University, including measures such as:

- Limiting or prohibiting the use of single-use balloons, confetti and other decorations
- Opting for reusable glassware and cutlery
- Ensuring freebies do not contribute to waste problem
- Arrange online conferences where possible
- Selecting caterers who support our vision

3. Communications strategy

The communications strategy will be developed and distributed by QUZWI through a Zero-waste Platform and Zero-waste Action Guidelines. Communications will aid in providing consistent communication, developing novel outreach structures, and creating feedback mechanisms. Communications will be directed towards all campus members, including students, faculty, and staff. The communication strategy will be developed with the goal of creating a zero-waste culture that impacts all areas of the campus and is practiced by all members of the campus.

3.1. Developing the Communications Program

Our objective is to create an effective communications system that we can use in the long term to engage the campus and communicate new efforts in the zero-waste campaign. The QUZWI Communications Program (QUZWI-CP) will be responsible for developing and maintaining a number of communication efforts on campus. We will ensure effective communication on all zero-waste initiatives across social media as well as implement a number of other innovative outreach activities.

All messaging will be distributed with the aim of reaching **students, faculty and staff,** familiarizing them with QUZWI and with the concept of a zero-waste campus. Effective communications and social engagement are critical to educate, motivate, and support campus users in reducing waste generation and maximizing waste diversion.

The Zero-waste Platform

One of the key actions for bringing this plan to life will be the development of a digital platform to include information about QUZWI's efforts, updates on progress of the targets, and other relevant news and events. The **Zero-waste Platform** will be developed with the goal of being a primary source of communication and engagement with the campus and will aid in the effort to create harmonized and consistent messaging.

The primary aim of the platform will be to engage campus users, in partnership with key campus stakeholders, to support the achievement of the zero-waste targets. Elements will include infrastructure signage, print materials, digital messaging, advertising, stakeholder engagement, and promotion at events.

Zero-waste Action Guidelines

Zero-waste Action Guidelines shall be developed for students and staff who want to engage further with the topic and will be made available on the Zero-waste Platform. The guidelines will be developed for facility managers, building administrators, tenants, and other stakeholders. Communications materials can be utilized or adapted by different audiences and QU branding will be included where appropriate. Additional efforts shall be made to communicate particular provisions of this plan such as procurement and event guidelines to the relevant audiences.

A key element of communications and engagement will be to educate and support users in prevention, reuse and recycling behavior. Meanwhile, it should be sensitive and adaptive to actual needs. For example, depending on pilot results and food scraps contamination levels, engagement may need to go beyond provision of information and require more direct contact with building inhabitants.

Waste survey and questionnaires

Students can be asked about their attitudes towards printing, taking notes on paper, utilizing digital resources rather than physical textbooks, as well as any barriers to recycling correctly. People at the university can also express their views on single-use plastics and real or perceived barriers to reducing their consumption of single-use plastics by carrying reusable alternatives, and any barriers to recycling correctly.

There is currently a food waste survey being carried out across campus to understand in more detail the issues each eatery faces when it comes to food waste. A similar survey could be conducted amongst students about food waste at university eateries (for example, portion sizes or sides) or issues when cooking at home (for example, buying too much food or not storing correctly). We will attempt to identify real and perceived nuisances discouraging people from separating food waste for collection such as odor, flies or other identified barriers. We will then conduct research on strategies to address such barriers to ensure a smooth and effective transition towards a circular food system.

3.2. The central principles of campus messaging

The Communications Programs will be guided by central principles to ensure the effectiveness of the messaging. The central principles are to direct messaging to the desired audience, while avoiding inconsistencies and conflicting messages. Use innovative approaches to social engagement, such as the QU Zero Waste Week. Incorporate feedback into the communications strategy using a feedback and adjustment mechanism.

Direct, consistent messaging across campus

We will continuously develop creative and consistent messaging to engage the campus on QUZWI news, events, and suggestions for improving waste practices. This messaging shall be distributed both on the Zero-waste Platform, as well as via visual aids in the form of posters in the most visible areas of campus. Posters will feature images and simple phrases encouraging action on zero-waste. Additional training for staff and interested students shall be developed on practical facets of zero-waste.

There are multiple approaches to engage students, faculty and staff across campus. First of all, the Zero-waste Action Guidelines can be integrated into the welcome guide. Secondly, QU souvenirs and branded products within the university should all be aligned with the zero-waste principles. During student and employee orientation there will also be at least one lecture or activity dedicated to introducing QUZWI to a larger audience, presenting it as an enticing

opportunity driven by high-end engagements with the issue.

Special efforts shall be made to standardize and update labeling on all recycling and food waste collection bins and carts across campus wherever possible to maximize consistency. This will include alignment with current management capabilities and practices, as well as maximizing consistency with regional messaging where possible and allowing flexibility to accommodate future changes.

Innovative approaches to social engagement

To engage a broader community, we will develop an annual schedule of zero-waste events linked to the local context, as well as publish a monthly calendar for zero-waste activities on the Zero-waste Platform. One example of a campaign we plan to implement is zero-waste lifestyle challenge, which has been successfully implemented across the globe.

Other examples of campaigns that to implement include challenge prizes for circular innovation and design, topic-focused campaigns during the introduction of new measures, as well as special occasion campaigns such as sharing and reuse days, when a marketplace on campus allows to exchange things for free.

!!! IMPORTANT NOTE !!!
It is strongly suggested to create a novel infographic using this text.

Figure 1: Zero-Waste Week Campaign

Zero-Waste Week Campaign

- Zero-waste participants take a picture of their biggest waste sources and post it on facebook or Instagram, tagging **#QUzerowasteweek**
- For one week, participants try to avoid their biggest waste sources
- Online postings can include best practices for recycling and waste prevention, or certain difficulties in avoiding waste creation

Twice a year in autumn and spring we will hold a Zero Waste Week during which students and employees can win sustainable lifestyle accessories for participating in a series of challenges. People get notification about the daily challenge on their email or social media account at 9pm the evening ahead. The tasks may be accompanied by a few short sentences describing personal benefits of the practice, how it helps the environment and suggestions on how to achieve success. Having completed the daily challenge, participants can post a picture or video on their Facebook or Instagram account with a few short phrases explaining and the relevant hashtag.

<u>Further comes a list of 6 challenges for the exemplary zero-waste week:</u>

1. Count all disposables you used today, take pictures and choose one to avoid by the end of the week. How did it go? What barriers did you face?
2. Find a practice that you generate most waste from and try to avoid it today. What was the practice? What was the solution?
3. Count the number of options for recycling different materials you have around. How many did you find? Anything missing?
4. Time to get creative about food. Try one practice to cut on food waste you consider the effective.
5. Talk to at least 2 people about zero-waste today and try to implement something you've learned from them.
6. Try to produce no waste at all for one day. How did it go? What barriers did you face?

Feedback and adjustment mechanisms

The Communications Program will pay particular attention to any comments, feedback, or suggestions regarding the operation of the zero-waste management system made by students and staff. Feedback will be used to adjust the communication strategy and develop new communication methods as the zero-waste initiative advances.

4. Culture of innovation and social change

The guiding principle of action by QUZWI is to support and encourage the evolution of a zero-waste culture, rather than pushing or coercing individuals to take a certain action. The driving principle behind the zero-waste culture is that it cannot be successful without the involvement of all the campus members. An essential step towards accomplishing this will be to use novel strategies that engage campus members towards thinking about their waste practices and encourage them to think of new waste solutions. Another essential step will be to integrate QU's great academic resources, and to include these conversations in the curriculum.

4.1. Creating a zero-waste culture on campus

Our theory of change relies on the creation of new habits that the waste producer decides for themselves, and to encourage and support this new habit formation. Therefore, the zero-waste campaigns that will be promoted by QUZWI-CP will strive to provide campus members with information on the best zero-waste practices, their benefits, and solutions that they can apply in their daily lives. Ideally, this will demonstrate to the waste producer that developing prevention, reuse, and recycling habits are both possible and preferable.

Supporting and encouraging new habits

The key elements used to drive social and behavioral change towards zero-waste campus rely on the use of current knowledge in communications, psychology, and other relevant disciplines. The SHIFT framework developed by SITRA[13] will serve as a basis for our efforts. SHIFT suggests five key factors that are necessary for driving change: context, habits, individual self, human feelings/cognition, and tangibility.

Most importantly, a zero-waste lifestyle should be presented as a norm that is positively perceived, and seamlessly afforded by students and employees. A diverse set of tools will be investigated and employed to achieve this aim. These tools include price incentive structures, improved convenience of waste practices, community feedback response, concise prompts, public commitments by QUZWI, and guided dissemination of messaging.

Producing social change can be a long process, and not all practices are possible to set by default. For example, it should not be assumed that all campus members are even familiar with the concept of composting. It will therefore be important to identify and communicate the undesirable practice from the desirable one. This will focus on the exact and most critical triggers and moments of decisions that can help shift from the old practices towards the new ones.

The Theory of Social Change that we will operate under is described in Figure 4. Ideally, habits that we encourage people to adopt should be a win-win solution from their perspective. This means that QUZWI should avoid promoting behaviors in ways that may undermine basic

[13] SITRA, 2018. SHIFT – Encouraging Ecologically Sustainable Consumer Behavior.

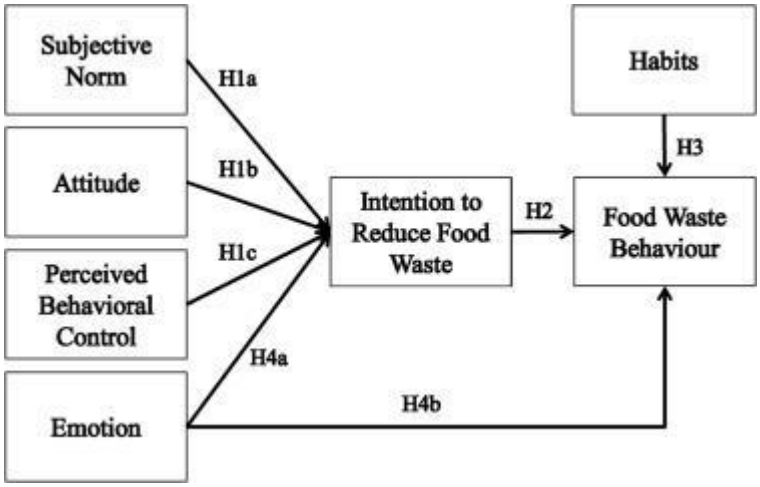
elements of individual autonomy or that require compromises. If a certain waste practice is perceived as an individual benefit to some, we should make sure they retain the choice to continue that practice.

It will be important to investigate and understand better the situation of the local infrastructure. This will address whether there are any critical barriers towards a desired waste practice, whether there are differences between sections of campus or between buildings. Once the local contexts are better understood, QUZWI will determine whether it is worthwhile to focus on developing tailored strategies for various contexts.

Individual contexts should also be considered. This means that we work not only with group norms and behaviors but also individual values and mindsets. A positive self-perception of the person implementing zero-waste behaviors can help them to achieve internal consistency.

!!! IMPORTANT NOTE !!!
This figure is just a placeholder. Our suggestion is to create a Theory of Social Change from the content already present in this section.

Figure 4: Theory of Social Change



Fostering innovation on campus

A key piece of the Action Plan is to foster new and innovative habits around waste, which will entail experimentation and risk. New innovative practices could come from key waste partners, researchers and academics, or University community members. If a new waste practice is effective, easily adopted, and does not come with significant trade-offs, its adoption could be greatly beneficial to the waste reduction target.

Pilot projects will be encouraged prior to large scale applications whenever possible and feasible in order to prove out infrastructure improvements and communications and engagement strategies. This, for example, may include pilot tests of new configurations of recycling prior to rollout including both the indoor and outdoor public realm.

This plan considers top sustainable technologies, capacities of the digital realm, new societal interaction models and modes of experimentation. Across a wide range of approaches to

change, we will foremost invest into building the culture of zero-waste within the university. This will entail engagement with key players to provide students and employees clear and engaging pathways for adopting zero-waste habits in their daily life. Working with influencers on campus or encouraging management at the university to lead by example by practicing visual zero-waste choices (e.g. carrying a tote bag and reusable cup), can help to reach large audiences and make zero-waste something desirable.

4.2. Promoting academic leadership

We believe that the University can be an agent of change in society towards zero-waste. Academic endeavors stimulate such engagement, providing perspectives regarding relevant choices, opportunities and risks. We want our faculty to actively engage in shaping the zero-waste future of QU. Our faculty will be provided with special incentives, support and collaborative opportunities to stimulate this process. We will also foster a transdisciplinary approach to zero-waste, which includes active collaboration and co-production of zero-waste knowledge together with multiple actors.

Zero-waste in the curriculum

We want to nurture QU students as agents of change both within the university, and afterwards in their professional lives. We also want to offer them knowledge that will enable them to deal with the pressing sustainability challenges of today and tomorrow. Curriculum development is one of the key areas where we can make that happen.

QU will provide special funding for the development of a QU-based Ph.D., Masters and bachelor's levels interdisciplinary courses on the circular economy and zero-waste. Both our faculty and researchers from other universities will be encouraged to apply.

Faculty representatives who integrate world-class zero-waste and circular economy thinking, concepts, methods or tools into their courses will be provided with extra incentives from the university. There is no limitation regarding relevant subjects or areas of study as long as appropriate grounds are provided for the relevance of certain engagement. Based on previous experiences, integrating waste audits into student curriculum might be a particularly effective measure.

We will also develop a list of regularly updated recommended resources for anyone who would like an effective entry into zero-waste thinking.

Research and scholarship

Research and scholarship are essential elements of the zero-waste transition, as they allow us to gain a scientific perspective on both challenges and opportunities in this area. This plan suggests active collaboration with researchers to model and optimize resource flows. Participatory and action research, transdisciplinary science, and disciplinary knowledge from both social and natural sciences can greatly facilitate the transition towards zero-waste.

Researchers involved in projects that focus on any aspect of zero-waste (social, economic, environmental and aligned with circular economy principles) will receive extra 2% to their

salary for every month of such involvement. Meanwhile, projects that can lead to verifiable improvements on any zero-waste indicators outlined above or broader changes within zero-waste culture and practices locally or internationally will receive special recognition and be provided with further support from QU.

MOVING FORWARD & BEYOND 2025

The ambitions laid out in this Action Plan set the groundwork that our efforts span beyond short term ambitions. The aspirations that follow shall help to advance our journey further once we reach our present goals. Ultimately, we want to showcase that lower waste generation per capita is not only possible, but preferable.

Beyond 2025 and beyond we will aim to:

1. Ensure Qatar University is a driving force for the transition to a circular economy in Qatar in general and in Doha in particular.
2. Position Qatar University as a sustainability leader among educational institutions on a regional and global scale by helping at least 5 other universities in the region start a zero-waste journey.
3. Create an AI-based digital framework for monitoring and steering zero-waste on campus to ensure high-end optimization of material flows
4. Establish a center for zero-waste solutions that will provide services within Qatar and for the region.
5. Discover new unique synergies between zero-waste and other facets of sustainability, enhancing positive contributions to social wellbeing, a healthy planet, and a thriving economy.

Those ambitious trajectories will continue to evolve as we tread our path towards zero-waste. Now, it is time to embark. We hope you'll join us on this exciting journey towards a more hopeful future.