[Final manuscript of a book chapter published in:] Evidence and Action on the UNSDGs: Reviews and Case Studies [ISBN: 9781836626039] / edited by Amit Singh Khokhar, Punita Duhan, Anshu Lochab, Simran Chopra (Emerald Publishing, 2026).

Chapter title - Food Loss and Waste Reporting in UK Universities: Aligning with UNSDG12.3

Chapter Author: Karen Cripps – Oxford Brookes University Business School UK

Headington Campus, Headington Road, Oxford, OX3 BNP, UK

kcripps@brookes.ac.uk

Author/s Biography

Dr Karen Cripps is a Senior Lecturer in Responsible Management and Leadership at Oxford Brookes University Business School. She advocates for the United Nations-supported Principles of Responsible Management and Education (PRME) and sits on the UK and Ireland Chapter Steering Committee. PRME's mission is to advance progress towards the Sustainable Development Goals. Karen has several publications on pedagogic and organisational applications, focusing on sustainability mindset and employability-related skills. She was awarded funding by the Association of Commonwealth Universities in 2023 for a digital student competition in collaboration with Amity University, India focused on raising awareness of food waste among students. She is the editor of the book 'Higher Education and the Sustainable Development Goals: SDG 2 Zero Hunger' published in 2024 by Emerald as part of a book series on all seventeen goals.

ABSTRACT:

Purpose:

Reducing food waste and loss (SDG12.3) is imperative for countries across the global North and South, albeit with differing challenges to address. Through a conceptual case study approach of United Kingdom policy and progress regarding SDG12.3, this chapter provides an informed overview of how this target is interdependent with other SDGs. It illuminates how this interdependence has led to some lack of clarity in reporting communications within the university sector.

Design/Methodology/Approach:

The chapter highlights global challenges and policy responses to food loss and waste and how these underpin SDG12.3. This conceptual article spotlights a lack of consistency in SDG targets and university ranking approaches through an exploratory examination of a leading SDG ranking for universities and associated university website communications.

Findings: An evaluation of how food loss and waste are captured in global university rankings and guidance frameworks finds that these need to be developed to be more consistent with SDG targets and indicators. In particular, university reporting on SDG2 Zero Hunger captures actions on food waste reduction that, according to the SDG targets, should more naturally align with SDG12 Responsible Consumption and Production.

Practical Implications:

More rigorous and transparent reporting communications on food waste and loss reporting aligned to the SDG targets can eliminate confusion caused by closely intersecting areas (such as SDG2 and SDG 12). This has implications for the university sector in positioning exemplary best practices to lead the way for other sectors.

KEYWORDS:

1. SDG 12 Responsible Consumption and Production
2. SDG12.3 Reduced Food Loss and Waste
3. SDG2 Zero Hunger
4. Higher Education
5. Food systems

Central Chapter text

Introduction: The inter-connected nature and global scale of the SDG12.3 food waste challenge

This chapter explores how universities in the United Kingdom (UK) communicate actions towards Sustainable Development Goal (SDG) 12.3 on reducing food waste and loss. The UK is classified as a global leader in food waste measurement and reduction by The UN Environment Programme (2024). Hence, the exposition of the policy landscape for SDG12.3 helps enable comparison to other global contexts. The UK university system is also a good reference point for informing global analysis since it has the highest percentage of the population who start higher education by age 24) in the G7 (the world's largest economies) at 58% (UK Parliament, 2024a). Finally, as prominent players in civil society, the university sector has considerable scope to shape and inform policy, business, and

community action for the SDGs. People and Planet (2024) (the UK student campaigning network against oppression and injustice) states, “Universities are also key to shaping behaviour change in the choices we make regarding our attitude to food; the sector could become an example of best practice within the UK”. Following a detailed analysis of the global and UK policy and reporting context for SDG 12.3 food waste, this chapter provides an exploratory study of university sector contributions that can be informative for other sectors, while also highlights some communication and reporting challenges seen from this university level analysis.

SDG 12 seeks to “ensure sustainable consumption and production patterns.” The third target under this goal (target 12.3) is “By 2023, 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” with two measurement indicators:

• 12.3.1(a), the Food Loss Index which measures losses for key commodities in a country across the supply chain, up to but not including retail.

• 12.3.1(b), the Food Waste Index which measures food and inedible parts wasted at the retail and consumer levels (food service and households)”. (UN, undated)

The connection between food waste and biodiversity loss is now recognised in the Kunming-Montreal Global Biodiversity Framework (UN Environment Programme, 2015), and it has a key role to play in the delivery of other Sustainable Development Goals, including those around Zero Hunger (SDG 2), Climate Action (SDG 13) and socio-economic goals such as SDG10 (Gender Equality) through relative impacts on marginalised populations

There is no legal or universally accepted definition of “food waste”, and differing terminologies and methodologies are applied around ‘food loss’ and ‘food waste’, so comparing countries and over time periods is difficult (Malik et al., 2024). This chapter focuses on food waste, defined as “Food and the associated inedible parts removed from the human food supply chain. ‘Removed from the human food supply chain’ means one of the following end destinations: co/anaerobic digestion; compost / aerobic digestion; land application; controlled combustion; sewer; litter/discards/refuse; or landfill” (UN Environment Programme, 2024, p. v).

Shockingly, more than US$ 1 trillion worth of food is wasted each year (World Bank Group, 2020). Food waste significantly contributes to climate change, generating 8-10% of global greenhouse gas (GHG) emissions. If food loss and food waste were classed as a country, it would rank as the world's third biggest emitter of GHG emissions, coming after China and the US (IFCO, 2023). If the climate-related consequences were not shocking enough, the United Nations (UN) (2024, p. 32) ‘Sustainable Development Goals Report 2024’ reports, “Globally, an estimated 1 billion meals of edible food are

wasted every day, equivalent to 1.3 meals per person impacted by hunger per day, considering that 783 million people faced hunger in 2022". It is imperative for us all to ask, as global citizens, how to address these systemic, interdependent crises of waste and hunger.

Food insecurity and hunger (SDG2) are critical and most severe for populations within the global South (FAO IFAD UNICEF WFP and WHO, 2023). However, this is not to overshadow that within the global North, food-related poverty and hunger also exist among vulnerable populations. In the UK, for example, 'food insecure' households rose to 7.2 million in 2022/23 (UK Parliament, 2024b). It is suggested that national 'average' data can mask huge variations in socio-economic status and a significant need to address diet-related diseases alongside food insecurity among vulnerable populations UN Global Compact Network UK (2022).

The paradoxical condition of global hunger at a time of global food waste is compounded by malnutrition in the Global South through a lack of food, while the Global South contends with obesity. Societal over-consumption and 'over-nutrition' adds further pressure on natural resources (Franco et al., 2022). Obesity has been described by Lobstein and Cooper (2022) as the "ghost at the feast of the Sustainable Development Goals", although SDG2 Zero Hunger includes a target to reduce 'malnutrition in all its forms, unregulated markets lead to overproduction and consumption through competing interests. They suggest that if over-eating/obesity is not considered a component of food waste, it implies that eating more food is a strategy to reduce food waste – which would, of course, be paradoxical while struggling with an obesity epidemic.

SDG12.3 is inextricably linked to a need for a shift to forms of governance that act in the public interest in addressing the power of corporations that drive power imbalance in the food systems of farmers, retailers, and consumers. IPES-Food IPES-Food (2023). From an economic perspective, if farmers, retailers, and consumers were to pay for 'environmental externalities' through the impacts of food production, food would be more costly, and less waste might be generated. This is, however, unlikely to be politically popular, and the current reality is a system of governmental agricultural subsidies that compound the problems of food production and consumption (World Bank Group, 2020). Free market ideology and resultant power relations are understandably described as a 'broken food system' (Our Food-Our Future, undated)

The World Wildlife Fund (2021) highlights the relationship between higher food waste and lower incomes for farmers, which is particularly marked in the global South since farmers are less able to invest in technology or labour to reduce levels of food waste, thus contributing further to problems of local undernutrition since when food is short, it is likely to reserved for higher-income local or overseas markets. The WWF report states that food loss and waste on farms is worse in lower-income countries is a myth, and it is just as bad in higher-income countries because of unequal power

relations between suppliers and retailers who may engage in unfair practices such as driving down prices, rejecting produce as it does not meet specifications, and cancelling orders without warning. From a global perspective, this is all the more shocking since research suggests that reducing post-harvest waste by 50% in supply chains of high-income countries alone could decrease the number of undernourished people in low-income countries by up to 63 million (Munesue et al., 2015).

The challenges of global food waste on socio-economic systems have been further exacerbated through the disruption of Covid 19, economic slowdown and global conflict, which destroys both natural resources to grow food and ongoing distribution through supply chains. The two explicit food-related goals of SDG2 and SDG12.3 are complex challenges in both the global North and South due to the interdependency of reducing food waste and loss while at the same time enabling globally fair access to food that is "nutritious, affordable, and sustainable" (Cripps & Thondre, 2024, p. 14).

This section has set out the paradoxical nature of increasing global hunger alongside increasing food waste and the impact this has on marginalised populations across the global North and global South. The remainder of this chapter will illustrate how universities that are positioned at the top of global university sustainability rankings pertaining to addressing SDG12 and SDG2 are currently those in the global North. It will be argued that it is critical for clearer data and reporting mechanisms to be developed for meaningful actions to be addressed in the global North so that effective knowledge and practice can be shared with the global South as part of an inter-connected food system. With increased awareness and action, more partnership approaches can be developed to understand contextual challenges and opportunities.

This chapter seeks to develop insight into how SDG12.3 food loss and waste goals relate to the university sector, focusing on reporting and communications. The contribution is primarily based on conceptual insight into global university ranking frameworks pertaining to SDG12.3, with further exploratory analysis of UK university communications linked to the framework rankings. This review of global university rankings and associated website communications indicates perceived shortcomings in reporting actions to address food waste as part of SDG12.3.

SDG12.3 Measurement and Reporting: the UK context

SDG12.3 Champions (2024, p. 2) (a group of leaders of governments, private sector, NGOs, civil society, and international organizations) conclude in a global summary progress report that "With six years to go before 2030, the world is not on track to achieving SDG 12.3. Global progress on reducing food loss and waste has not accelerated to the point needed to achieve this ambitious target, either from companies or countries". The report stresses the need for "immediate and ambitious food loss and waste reduction targets" that are represented as part of national climate solutions through

Nationally Determined Contributions (NDCs) and translated into meaningful policy and action. It is concerning that their report reveals that no national government requires businesses to report operational food loss and waste fully and publicly.

In order to galvanize action towards achieving SDG12.3, the UN Environment Programme (2024) highlights the criticality of understanding how much food waste is generated to provide a baseline measurement to inform action. The UN Environment Programme report spotlights the accountability of G20 countries (the world's largest economies) in particular to lead by example in "connecting the fight against hunger and the triple planetary crisis of climate change, pollution and biodiversity loss" and for all UN member states to develop robust baselines of data on food waste to showcase high impact solutions" (UN Environment Programme, 2024, p. xv). Similarly, the UN (2024) 'Sustainable Development Goals' report details the current gap in many countries' 'Nationally Determined Contributions' in addressing food waste and associated greenhouse gas emissions with climate actions (SDG 13). Given the existential challenges of hunger and climate crisis, it is incredulous that neither businesses nor governments are compelled to transparently report on the intersection of food loss and waste and associated emissions.

The UK Climate Change Committee (2023) have agreed that mandatory food waste reporting should have been introduced by 2022 in order for the UK to stay on the Balanced Net Zero Pathway. Nevertheless, the UK is classified by The UN Environment Programme (2024) as demonstrating leadership in food waste measurement and reduction, significantly through the work of 'WRAP' (Waste and Resources Action Programme), which is a global environment action charity with a mission to embed 'circular living'. The 'Courtauld Commitment 2030', (C2030) is the primary voluntary mechanism to facilitate the achievement of SDG target 12.3 in the UK through collaborative actions across the UK food chain of producers, distributors, manufacturers, retailers and consumers (WRAP, 2022).

WRAP's ' Food Waste Reduction Roadmap' supports the delivery of the C2030 food waste target, by setting out a route map for the UK food industry to follow with milestones under three elements of 'Target, Measure, Act' (WRAP, 2023). Good practices within the 'Act' include the contribution of 18% of large businesses that support citizens in reducing food waste at home, including their employees, which carries lessons for the university sector in reaching both employees and students. Action to reduce food waste among retailers has been reported to lead to a reduction in food waste by over 19,000 tonnes (8%), equivalent to almost £62 million of food that did not end up as waste, saving 60,000 tonnes of GHG emissions (WRAP, 2022).

However, a report by the environmental charity The World Wildlife Fund (WWF, 2022) finds that food lost and waste produced on farms is 'hidden' in reporting since SDG12.3 only requires the declaration of post-harvest loss and waste and, therefore, does not include losses through in-field waste such as crop failures or crops that are unharvested due to a lack of labour. The report highlights that food waste on farms is not referenced in the UK's Government Food Strategy, Nationally Determined Contributions, Net Zero strategy, or the plans for mandatory food waste reporting and that "given the current cost-of-living crisis and a growing number of people in the UK facing food insecurity and poverty, this can no longer be ignored" (WWF, 2024, p. 4).

The United Kingdom's governmental Department for Environment, Food and Rural Affairs had announced in 2018 plans to require food loss and waste reporting, but last year, these plans were delayed until the end of 2026 at the earliest (DEFRA, 2023). This decision was met with an outcry since 80% of consultation respondents were in favour of a mandate and will instead work with industry to increase voluntary reporting (edie, 2023). However, as illustrated by Feedback (2022, p. 22) in a discussion of European Commission actions for members to meet a 50% reduction in food loss and waste from farm to fork by 2030, voluntary agreements do not enable "accountability for laggards and free riders and no mechanism for punishing businesses that are untransparent or slow to act on food waste. If individual businesses do not share their food waste data publicly, as is often the case, these actors can hide behind sector-wide figures".

Global food waste indexes such as the United Nations Environment Programme classify data according to household, retail and food service sectors. While globally usable estimates for household food waste have increased, less data is available for the retail and food service sectors, particularly in middle- and low-income countries. This adds to challenges in tracking national progress to SDG12.3. The report recommends that "Countries in the G20 should leverage their economic and political influence to take significant action on food waste. This starts with accurate measurement and reporting through the Food Waste Index" (UN Environment Programme, 2024, p. XV).

It is thus evident that global food waste reduction requires increased measurement and reporting. This arguably positions universities accountable for leading the way in effective reporting on food waste reduction practices in campus operations. As institutions that influence policy, practice, research, and behavioural change for the public good, universities must, as a starting point, effectively measure and report on direct food waste data alongside broader gains through engaging in policy advocacy and research.

University sector accountability for addressing food waste

Despite the importance of universities measuring and reporting food waste in campus operations, a study revealed that only 60% of 52 global higher education institutions tracked food waste generated by canteens (Leal Filho et al., 2021). A more recent literature review and case study analysis indicated broad variance exists in producing food waste among universities, from 0.12 to 50 kg/capita/day, which was found to be influenced by factors such as students' behaviours, and on-campus strategies to reduce and prevent waste (Leal Filho et al., 2024).

Following the bold and ambitious statement that 'Higher education institutions can contribute to the eradication of hunger' (UNESCO-ISEALC, 2023) and that "none of the SDGs will be fully achieved without the contribution of the university sector" (SDSN, 2020) then it is necessary to understand the role of universities in reducing waste. As institutions for the 'public good' (CABS, 2021), universities can leverage a position as 'transformational change agents' through research and teaching, and critically, must 'walk the talk' (Kumar et al., 2024). However, there seems to be a mismatch between ambitious sector aims since research into 363 universities by the International Association of Universities identified relatively little institutional engagement on SDG2 compared to other SDGs and did not specifically address SDG12.3 in this report at all (International Association of Universities, 2023).

Universities have the leverage to contribute to "developing a mindset that encourages the adoption of SDGs principles" (Krishnamurthy & Sahay, 2023, p. 60) and build human resources to realise the SDGs that can ideally "actively move back and forth between government, industry, civil society, and academic institutions. (Ashida, 2023, p. 83). A true paradigm shift in higher education for Sustainable Development Goals extends beyond university teaching and must permeate the entire institution (Krishnamurthy & Sahay, 2023). This is essential to influence student, staff, and other stakeholder behaviours through 'lived experiences' on campus and demonstrate a genuine commitment to driving research and policy agendas forward. Through such approaches, universities can influence society in exemplary practices in implementing SDGs (Weisser, 2017), mainly through outreach activities. For example, by developing partnerships with community organisations, universities can help to build public awareness around food waste, which in turn can inspire staff and student interest - which was found in studies by Leal Filho et al. (2021) and (Akhter et al., 2024) to be a significant challenge to overcome to generate engagement in food waste prevention.

In a report on addressing food waste in event and meeting planning (which forms a core part of university campus life), WWF (2024) highlighted that food waste prevention is often 'ignored' due to a lack of awareness/education, a resistance to change or extra effort, and concerns about profitability/sales/image. These concerns are likely to also be felt within university in-house and external catering services and, therefore, need to be understood and addressed by the senior management teams involved in sustainability strategy so that a cohesive, whole-campus approach can

be taken, and, like any organisation, this might call for deep cultural change. Yet universities are comparatively well placed as compared to other sectors in this regard, in which discussion on food waste is avoided as it is seen as a "liberal or politically charged issue" that can cause "embarrassment" (WWF, 2024). Universities are an ideal context, in fact, for breaking down such stigma through generating transparent and open discussions on problems and how to generate innovative solutions. SOS-UK (2021), which is a student-led education charity focused on sustainability, researched sustainable food and concluded that 'habit discontinuity theory' suggests that pivotal moments of life change, such as independent living, can instil new habits and behaviours that last a lifetime.

Operational actions on campus to address food waste in restaurants, catered accommodation, and catering services, whether through in-house or external contractors, is critical to measure and manage progress towards SDG12.3, but also in influencing the 'subliminal curriculum' of policies and practices that students observe which should helpfully reinforce what is delivered in the 'formal curriculum'. This is incredibly important in the context of SDG12.3, as expressed in a university catering sector research report that "The cost of taking action, the capture of data and the diversity of operations all create headaches. However, engagement with customers – students – is the greatest challenge" (TUCO, 2019, p. 22). Research into food waste practices in hospitality businesses in Oxfordshire found that consumers' over-ordering and leaving unfinished meals perpetuates food waste (Rosenthal et al., 2024) and recommended introducing signage to consumers (in this case students and staff) as a 'nudge' to changing behaviours (Kallbekken & Sælen, 2013).

Within the global North in particular, the narrative around reducing food waste can be closely aligned to how it saves money. For example, it is reported that by eliminating avoidable food waste, the average four-person household could save around £1000 per year (WRAP, 2023). This is a compelling statistic for student action. Universities should be compelled to consider food-related poverty as a duty of care to students to influence well-being and educational outcomes. Building food literacy and food security through campus food gardens is an example of how universities are addressing student hunger in the global North (Lin et al., 2024). In the UK, campaigns for changing consumer behaviour around food waste have included awareness raising on only purchasing what is needed, understanding 'best before' dates, and correct storage to extend food life. Such initiatives, through campaigns such as 'Love Food Hate Waste', are designed to "shift the narrative" so it is more valued (WRAP, 2022, p. 42). This has, in turn, led to university initiatives such as 'Love Student Leftovers' – a digital video-based cooking competition for students based upon reducing food waste which engaged students across the UK and India – illustrating the common challenges alongside very different contextual causes and impacts (Cripps et al., 2024).

Another way in which universities engage with SDG12.3 is through the redistribution of unpurchased catered food to vulnerable local populations, such as food shelters, as detailed by Hopley in Cripps et

al (2024). An increasing number of UK universities provide food pantries/donation fridges that address student-related food poverty and hunger and reduce food waste. Surplus Food Redistribution can mitigate food poverty (Papargyropoulou et al., 2022), whether through digital platforms or community networks. However, The Food Foundation (2024) describes redistribution versus landfill as a "conundrum" regarding environmental and social impacts. While it addresses food poverty, it does not address the root causes, including structural causes around business practices and accountability in causing food waste. It is arguably not, therefore, a sustainable long-term solution.

The remainder of this chapter will turn to how universities communicate and report on food loss and waste actions. A focus is given to how reporting on food waste aligned to the Sustainable Development Goals (SDGs) varies across its classification as SDG2 'Zero Hunger' or SDG12.3 'Reducing Food Loss or Waste'. The variation in classification implies some confusion in global university frameworks, which is likely to in turn limit university understanding and reporting approaches, thus hindering national and global tracking of progress towards SDG12.3.

Methodology

This chapter is grounded in a conceptual, exploratory analysis. This was triggered through an informal review of university website communications on food waste actions (October 2024) which revealed confusion in detailing actions reporting communications under SDG2 (Zero Hunger) rather than SDG 12.3 (Responsible Consumption and Production food waste). Some examples of this are detailed at the beginning of the next section.

The Times Higher Education (THE) 'Impact Rankings' were then explored as they provide a global measure of university action on the SDGs (Times Higher Education, 2024a). As an exploratory, conceptual study, it was only necessary to review the top three ranked universities according to SDG12 and SDG2. As the THE rankings do not provide any contextual information on the scores, the top three ranked university websites were reviewed. This provided an overview of the range of actions communicated that address food waste, and whether they were reported under SDG12 or SDG2.

Having confirmed the discrepancies/confusion in how actions are communicated, the next phase of conceptual analysis concerned a comparison of the terminology used by two more global university sustainability ranking systems in capturing actions on teaching, research, operations/governance, and community engagement/outreach themes. This confirmed that THE is the only guidance framework for ranking and reporting specifically on the SDGs. As a final step, the THE ranking criteria were investigated in more depth, giving focus to campus operations/stewardship on reducing food waste.

Global university 'impact rankings': what do they tell us about food waste?

Reducing food waste actions can be conceptually considered as more environmentally focused in reducing landfill (aligned more to SDG12) or alternatively, more poverty-focused in redistributing food (aligned more to SDG2). Accordingly, universities might reasonably communicate food and food waste issues under either SDG. Ulster University (2024), for example, details the collection of food waste to distribute to community food banks as part of SDG2 (Zero Hunger). The University of Leicester (2024) similarly, communal fridges are used to re-distribute food within a 'use by' date under SDG2. However, while both of these examples can be implicitly understood as helping to reduce food poverty amongst those who receive and consume the food, referral to the SDG2 targets and indicators reveals that, in fact, these initiatives align with SDG12.3 with regard to avoiding food loss and waste. This rather confusing communication will now be argued to be caused, in part at least, due to the presentation of influential ranking indicators such as The Times Higher Education (THE) University Impact Rankings, since the food waste indicators for the awards do not align with the SDG targets, thus causing some confusion in the communication of university practices around food waste.

The Times Higher Education (THE) 'Impact Rankings' are the "only global performance tables" to specifically assess universities against the SDGs (Times Higher Education, 2024a) and are based on an evaluation of performance against all 17 goals, with result tables also published on individual SDGs. The ranking depends upon voluntary self-submitted information. Table 11.1 provides an initial scoping of university website communications/reporting on food waste reduction of the three top-ranked global universities by the 2024 Times Higher Education (THE) ranking on SDG12 (Responsible Consumption and Production) and SDG2 (Zero Hunger). These rankings are annually published.

The top three universities for both SDG2 and SDG12, as reported in the THE 2024 rankings, are presented and mapped against actions drawn from the university website communications during October 2024. THE rankings do not detail a breakdown of the data, and the purpose of Table 1 is rather to show the variety of ways in which food waste is managed by universities, ranging from food technological tools to predict catering service demand to food waste bins for students and staff. It is also useful to note that all actions can be seen as applicable to broader sectors beyond universities, for wider applicability of the findings here.

[INSERT TABLE 11.1 HERE]

The rankings are drawn on in this chapter to indicate the types of campus operational actions universities take to address food waste based on the information reported on their websites and do not extend to research or teaching-related actions. It is important to note that the indicators have not been

cross-checked, and it may be that the universities are engaged in more practices relevant to SDG 12.3 than those identified here.

THE impact rankings do not show a dominant source country, but the top 3 universities in its 2024 rankings for SDG12 (see Table 11.1) are all in the UK: Bournemouth, King's College, and Reading. This begs the question of which contextual factors are leading to the dominance of UK universities in the winning places – is it, for example, the relative availability of anaerobic digestion facilities for food waste and/or the weighting of ranking indicators? While this chapter cannot provide any answer, it spotlights useful areas for further research.

SDG-related award and guidance frameworks: an analysis of SDG 12.3 (reducing food waste)

University award and guidance frameworks relevant to SDG actions broadly address teaching, research, operations/governance, and community engagement/outreach themes. Variations in the terminology across three globally leading SDG assessment frameworks are mapped in Table 11.2. This includes Quacquarelli Symonds (QS) (2025) World University Rankings – Sustainability, Sustainable Development Solutions Network (2020) and UNESCO-ISEALC (2023). The QS rankings offer upon Environmental, Social and Governance (ESG) categories, broken down into indicators which include the SDGs in the weighing methodology, but the SDGs are not presented explicitly in the rankings.

This mapping provides the reader with an indicative overview of differing terminologies used for university SDG-related actions that could inform further research into SDG actions. This chapter primarily interests university communications related to campus operations/governance to address food waste, which, according to the SDG targets, links to SDG12.3, but as will be discussed here, is positioned under SDG2 by leading global university rankings on the SDGs.

[INSERT TABLE 11.2 HERE]

The Times Higher Education (THE) 'Impact Rankings' are the "only global performance tables" to assess universities against the SDGs (Times Higher Education, 2024a), and are based on an evaluation of performance against all 17 goals, with result tables also published on individual SDGs. The ranking depends upon voluntary self-submitted information. Data on-campus food waste, along with food waste per person is required, but rather confusingly in terms of the SDG targets, it is addressed within SDG2 Zero Hunger methodology (Times Higher Education, 2024b). This is confusing in terms of the SDG targets, since SDG2 targets do not include food waste measurements. A primary contribution of this chapter is to highlight the discrepancy between university ranking measurements and SDG targets since this positioning, in turn, influences reporting and other communications.

THE indicators for SDG12 Responsible Consumption and Production focus on hazardous waste, plastic, disposable goods and waste that is sent to landfill (Times Higher Education, 2024c). The only implicit reference to food waste is composting (within the recycling category). Therefore, whilst the ranking encourages universities to track waste that is sent to landfill, food is considered as a "contracted service on campus" alongside "cleaning, security guards, etc." (Times Higher Education, 2024a, p. 112). It would arguably be clearer if the data on campus food waste required under THE SDG2 Zero Hunger methodology, was incorporated under SDG12 – as per SDG targets.

THE's Impact Ranking SDG2-related indicators of campus food waste award higher scoring if food waste is measured across the whole university (presumably including campus self-catered student accommodation, although this is not explicitly detailed). The waste per person (full-time equivalent of campus population) is detailed as limited to catering services food that is discarded or left uneaten (Times Higher Education, 2023). Therefore, besides the confusion surrounding its measurement within SDG2 rather than SDG12, the ranking indicators do not seemingly require broken-down measurements across catered campus restaurants, catered and self-catered campus accommodation, and catering services provided as an operational function. Considering the significance of the global food waste challenges, it would be helpful for the indicators to encourage a more explicit breakdown across university campus functions.

Limitations

As an exploratory study, the chapter only examined the top three winners of the THE rankings, across SDG2 and SDG12. Further analysis of more universities in this ranking would reveal a clearer picture of how universities are reporting/communicating on food waste actions. A more extensive study would also capture differences between universities in the global North and South – since the six top ranked universities were all in the global North. The study might also have examined the website communications of the Quacquerelli Symonds (QS) (2025) top ranked universities. A further limitation is that insights on university actions to reduce food waste are limited to a review of website communications – and they may be engaged in more practices than those publicly available at the time of review.

Recommendations

This chapter has set out the limitations in voluntary reporting approaches associated to university sustainability ranking frameworks. While it is unlikely that universities will be subject to mandatory regulatory reporting like for-profit companies, it can be considered good practice to adopt voluntary disclosure frameworks to ensure effective reporting. Meaningful reporting on the SDGs must be rooted in the targets and indicators. Concerning business, the UN Global Compact Network UK

(2022) recommends that to achieve SDG12, reporting should move towards impact-based targets (rather than weight-based targets) and that standardisation of metrics and reporting is needed across central and local government, devolved administration, civil society and business. Further research could usefully investigate what standardised reporting for SDG12.3 could capture, as this conceptual analysis of the global policy and reporting landscape has illustrated a lack of clarity on food loss and waste data reporting.

Although beyond the remit of this chapter which focuses on university reporting communications on food waste, it is necessary to understand farm-level contributions to food waste, how to address global inequity and power imbalances in the food system that contribute to food waste, and behavioural science interventions to influence consumer-level change.

The analysis here has been limited to the global North as the top-ranking universities of THE but provides a conceptual model that can be usefully applied to a broader geographic context. It would be helpful to investigate universities across the global North and South from the entire THE listing to understand which actions are taken to address food waste and whether they are categorised according to SDG2 or SDG12. This will illustrate if universities from other countries are similar to or differ from the UK in how food waste actions are reported against SDGs.

This chapter has argued that university rankings and SDG guidance need to be aligned to the SDG targets. While SDG2 and SDG12.3 closely intersect, and some activities can be considered as impacting both, the findings here have also shown obvious overlap in university communications. This is neither helpful to meaningful reporting nor in setting students up with the skills and understanding needed to engage other organisations in reporting as they transition out of university into workplaces (that also need to address food waste). If there is a compelling rationale for why ranking award criteria do not align with the SDG targets and indicators, it would be helpful if these were set out to inform those responsible for collecting data and communicating on progress.

Research could usefully engage in what such standardised reporting for SDG12.3 should capture across teaching, research, operations, and outreach activities. Universities should embed a culture of responsibility around food waste in all activities that ripple across personal and professional lives as part of lifelong and life-wide learning. Student experiences through formal learning can be enriched through embedding an understanding of food and food waste systems, as an interdisciplinary approach that touches all faculty areas and recognises the inherent inter-linkages between the SDGs as a frame of reference. Students' subliminal learning can be enhanced through campus-based activities and outreach partnership projects that engage students with local community sustainable food initiatives. In sum, universities need to be accountable and transparent for food waste generated and to

instil a sense of responsibility for impactful action to reduce waste throughout the ecosystem of individuals through to corporate action.

Conclusion

In the study of 107 sustainability reports by UK universities, Lakhno (2024) concluded that they lack thoroughness, with only 15% of reports being comprehensive. While this chapter has only examined a selection of university communications specifically linked to food waste rankings and guidance, a similar conclusion can be drawn. From the adage that 'you can't manage what you don't measure', transparent communication on progress can also not be enabled without organisational reporting. Since it is unlikely that mandatory regulatory reporting requirements will be set for food waste for businesses for some years, universities, like private businesses, must engage in voluntary reporting if there is to be timely and meaningful progress towards SDG12.3. SDG reporting and sector standards must be consistent and best achieved through alignment with SDG targets. If the SDG targets are not deemed appropriate for the reporting/ranking purpose, this should be explicitly stated in the accompanying guidance to build a common understanding of food waste challenges, solutions and perhaps most importantly, accountability. All organisations provide some level of food service, even if only in disposal facilities. It is hoped that this chapter raises questions on organisational approaches to food waste, how it is measured and reported/communicated at the sector level.

References

Akhter, S., Rather, M. I., & Zargar, U. R. (2024). Understanding the food waste behaviour in university students: An application of the theory of planned behaviour *Journal of Cleaner Production* https://doi.org/https://doi.org/10.1016/j.jclepro.2024.140632

Ashida, A. (2023). The Role of Higher Education in Achieving the Sustainable Development Goals. In S. Urata, K. Kuroda, & Y. Tonegawa (Eds.), *Sustainable Development Disciplines for Humanity* (pp. 71-84). Springer.

Bournemouth University. (2024). *Sustainable Food*. https://www.bournemouth.ac.uk/about/sustainability/sustainable-food

CABS. (2021). *Chartered Association of Business Schools - Business schools and the public good*. https://cabs-199e2.kxcdn.com/wp-content/uploads/2021/06/Chartered-ABS-Business-Schools-and-the-Public-Good-Final-1.pdf

Climate Change Committee. (2023). *Progress in reducing emissions: report to Parliament*. https://www.theccc.org.uk/wp-content/uploads/2023/06/Progress-in-reducing-UK-emissions-2023-Report-to-Parliament-1.pdf

Cripps, K., & Thondre, P. S. (2024). An introduction to SDG2 Zero Hunger. In K. Cripps & P. S. Thondre (Eds.), *Higher Education and the Sustainable Development Goals: SDG2 Zero Hunger* (pp. 3-14). Emerald Publishing https://bookstore.emerald.com/higher-education-and-sdg2-pb-9781836084617.html

Cripps, K., Thondre, P. S., & Feehily, J. (2024). A compilation of global cases on teaching, learning and campus stewardship In K. Cripps & P. S. Thondre (Eds.), *Higher Education and the Sustainable Development Goals: SDG2 Zero Hunger*. Emerald Publishing https://bookstore.emerald.com/higher-education-and-sdg2-pb-9781836084617.html

DEFRA. (2023). *The waste prevention programme for England: maximising resources, minimising waste*. https://www.gov.uk/government/publications/waste-prevention-programme-for-england-

maximising-resources-minimising-waste/the-waste-prevention-programme-for-england-maximising-resources-minimising-waste#textiles
edie. (2023). *Defa quietly delays food waste reporting mandate for businesses* https://www.edie.net/defra-quietly-delays-food-waste-reporting-mandate-for-businesses/
FAO IFAD UNICEF WFP and WHO. (2023). *The state of food security and nutrition in the world 2023*. https://openknowledge.fao.org/server/api/core/bitstreams/f1ee0c49-04e7-43df-9b83-6820f4f37ca9/content/state-food-security-and-nutrition-2023/food-security-nutrition-indicators.html
Feedback. (2022). No time to waste: why the EU needs to adopt ambitious legally binding food waste reduction targets. https://feedbackglobal.org/wp-content/uploads/2022/09/Feedback-EU-2022-No-Time-To-Waste-report.pdf
Food Foundation. (2024). *Food waste*. https://foodfoundation.org.uk/sites/default/files/2024-02/Food%20Waste%20report_0.pdf
Franco, S., Barbanera, M., Moscetti, R., Cicatiello, C., Secondi, L., & Massantini, R. (2022). Overnutrition is a signifcant component of food waste and has a large environmental impact. *Scientifc Reports*, *12*, 1-11. https://doi.org/https://doi.org/10.1038/s41598-022-11813-5
IFCO. (2023). *What are the facts about global food waste in 2023?* . https://www.ifco.com/countries-with-the-least-and-most-food-waste/
International Association of Universities. (2023). *International Association of Universities - Accelerating action for the SDGs in higher education*. https://iau-aiu.net/IMG/pdf/iauhesdsurvey2023_accelerating_actions.pdf
IPES-Food. (2023). *Who's tipping the scales?* . https://www.ipes-food.org/_img/upload/files/tippingthescales.pdf
Kallbekken, S., & Sælen, H. (2013). Nudging' hotel guests to reduce food waste as a win–win environmental measure *Economics Letters*, *119*, 325-327. https://doi.org/doi:10.1016/j.econlet.2013.03.019
King's College London. (2024). *Waste and Recyling* https://www.kcl.ac.uk/climate-sustainability/operations-policies/waste-and-recycling#:~:text=Food%20waste%3A%20Food%20waste%20is,food%20waste%20occuring%20on%20campus
Krishnamurthy, R., & Sahay, G. (2023). Higher Education for Sustainable Development Goals: Bridging the Global North and South. In L. Caporarello, P. Kumar, & A. Agrawal (Eds.), *Higher Education for the Sustainable Development Goals: Bridging the Global North and South* (pp. 57-75). Emerald Publishing https://doi.org/doi:10.1108/978-1-80382-525-020231003
Kumar, P., Caporarello, L., & Agrawal, A. (2024). Research from the Global North and South on HEIs as a Driver for the SDGs. In L. Caporarello, P. Kumar, & A. Agrawal (Eds.), *Higher Education for the Sustainable Development Goals: Bridging the Global North and South* (pp. 26-35). Emerald Publishing. https://doi.org/doi:10.1108/978-1-80382-525-020231003
Lakhno, M. (2024). Green or green-washed? Examining sustainability reporting in higher education. *Higher Education Quarterly*, *78*, 1099–1122. https://doi.org/DOI: 10.1111/hequ.12513
Leal Filho, W., Lange Salvia, A., Davis, B., Will, M., & Moggi, S. (2021). Higher education and food waste: assessing current trends. *International Journal of Sustainable Development & World Ecology,*, *28*, 440-445-. https://doi.org/DOI:10.1080/13504509.2020.1865474
Leal Filho, W., Ribeiro, P. C. V., Setti, A. F. F. S., Azam, F. M. S., Abubakar, I. R., Castillo-Apraiz, J., Tamayo, U., Ozuyar, P. G., Frizzo, K., & Borsari, B. (2024). Toward food waste reduction at universities *Environment, Development and Sustainability*. https://doi.org/https://link.springer.com/article/10.1007/s10668-023-03300-2
Lin, S., Sherry, C., Milstein, T., Mihrshahi, S., & Grafenauer, S. (2024). The Potential of Campus Food Gardens to Achieve Student Food Literacy and Security in Australia. In K. Cripps & P. S. Thondre (Eds.), *Sustainable Development Goals and Higher Education: SDG2 Zero Hunger* Emerald. https://bookstore.emerald.com/higher-education-and-sdg2-pb-9781836084617.html
Lincoln University. (2022). *Sustainable Development Goals Reoort 2022*. https://www.lincoln.ac.nz/assets/Sustainability/SDG-Report-2022-FINAL.pdf
Lobstein, T., & Cooper, K. (2022). Obesity: a ghost at the feast of the Sustainable Development Goals *Current Obesity Reports*, *9*, 470-478. https://doi.org/doi: 10.1007/s13679-020-00417-7.

Malik, X., Smith, L., Stewart, I., & Burnett, N. (2024). *Food waste in the UK - UK Parliament Research Briefing* https://commonslibrary.parliament.uk/research-briefings/cbp-7552/#:~:text=How%20much%20food%20is%20wasted,%25)%20and%20retail%20(2%25).
Munesue, Y., Masui, T., & Fushima, T. (2015). The effects of reducing food losses and food waste on global food insecurity, natural resources, and greenhouse gas emissions. *Environmental Economic Policy Studies 17*, 43-47. https://doi.org/DOI:10.1007/s10018-014-0083-0
Oklahoma University. (2024). *Eat healthily, cut costs and reduce food waste*. https://extension.okstate.edu/announcements/family-and-consumer-sciences-newsletters/eat-healthy-cut-food-costs-and-reduce-food-waste.html
Our Food-Our Future. (undated). *The story of the broken food system* https://ourfood-ourfuture.eu/the-cost-of-our-food/
Papargyropoulou, E., Fearnyough, K., Spring, C., ntal, L. T. f. o. s. f. r., in the UK: Reimagining a 'win-win' scenario. Food Policy, A., 102230. doi:10.1016/j., & foodpol.2022.102230. (2022). The future of surplus food redistribution in the UK: Reimagining a 'win-win' scenario. *Food Policy*, *108 (April)*. https://doi.org/doi:10.1016/j.foodpol.2022.102230
People & Planet. (2024). *Sustainable Food*. https://peopleandplanet.org/university-league/methodology/sf
Quacquarelli Symonds. (2025). *QS World University Rankings: Sustainability* https://support.qs.com/hc/en-gb/articles/8551503200668-QS-Sustainability-Rankings?__hstc=238059679.6669787bc90f60beb56b6fe3ac50adf7.1737982941996.1737982941996.1737982941996.1&__hssc=238059679.1.1737982941996&__hsfp=978121169
Queens University. (2024). *SDG2 Zero Hunger*. https://www.queensu.ca/social-impact/zero-hunger
Rosenthal, A., Cripps, K., & Lvovich, S. (2024). The attitudes and approaches to food waste management of hospitality businesses in Oxford, UK In A. Singh, T. K. Pyagi, & A. Garg (Eds.), *Sustainable disposal methods of food wastes in hospitality operations*. IGI Global https://www.igi-global.com/book/sustainable-disposal-methods-food-wastes/331803#description
SDG12.3 Champions. (2024). *SDG target 13.3 on food loss and waste: 2024 progress report - World Resources Institute* https://champions123.org/sites/default/files/2024-09/champions-12-3-2024-progress-report.pdf
SDSN. (2020). *Sustainable Development Solutions Network - Accelerating education for the SDGs in universities*. https://www.un.org/en/academic-impact/accelerating-action-sdgs-guide-universities
Simpson, J. (2023). *University of Reading Blog post: food waste at the University of Reading*. https://sites.reading.ac.uk/sustainability/2023/01/30/food-waste-at-the-university-of-reading/
SOS-UK. (2021). *Sustainable food on campus: research with students and staff* https://cdn.prod.website-files.com/6008334066c47be740656954/6155964c4ea73830783c228e_SOS-UK_Sustainable%20food%20on%20campus_Students%20%26%20staff_Final%20report.pdf
THE. (2024). *Impact Rankings Methodology* https://the-ranking.s3.eu-west-1.amazonaws.com/IMPACT/IMPACT2024/THE.ImpactRankings.METHODOLOGY.2024.pdf
Times Higher Education. (2023). *Impact rankings 2023: zero hunger (SDG2) methodology*. https://www.timeshighereducation.com/impact-rankings-2023-zero-hunger-sdg-2-methodology
Times Higher Education. (2024a). *Impact Rankings 2024*. https://www.timeshighereducation.com/world-university-rankings/impact-rankings-2024-methodology
Times Higher Education. (2024b). *Impact Rankings 2024 SDG2 (Zero Hunger) Methodology* https://www.timeshighereducation.com/impact-rankings-2024-zero-hunger-sdg-2-methodology
Times Higher Education. (2024c). *Impact Rankings 2024 SDG12 (Responsible Consumption and Production) Methodology* https://www.timeshighereducation.com/impact-rankings-2024-responsible-consumption-and-production-sdg-12-methodology
TUCO. (2019). *Tackling food waste*. https://www.tuco.ac.uk/sites/default/files/2019-07/Tackling_Food_Waste_Footprint_Report_0.pdf
UK Parliament. (2024a). *Higher education around the world: comparing international performance with the UK*. https://commonslibrary.parliament.uk/research-briefings/cbp-9840/
UK Parliament. (2024b). *Who is experiencing food insecurity in the UK?* . https://commonslibrary.parliament.uk/who-is-experiencing-food-insecurity-in-the-uk/
Ulster University. (2024). *Zero Hunger*. https://www.ulster.ac.uk/sustainability/goals/zero-hunger

UN Environment Programme. (2015). *Kunmig-Montreal Global Biodiversity Framework* https://www.cbd.int/gbf
UN Environment Programme. (2024). *Food waste index report: Think Eat Save: tracking progress to havle food waste*. https://wedocs.unep.org/handle/20.500.11822/45230
UN Global Compact Network UK. (2022). *Measuring up 2.0: How the UK is measuring up on the Sustainable Development Goals*. https://www.unglobalcompact.org.uk/measuring-up/
UNESCO-ISEALC. (2023). *SDG2: Zero hunger*. https://campus.iesalc.unesco.org/encuesta/execert/20/
United Nations. (2024). *Sustainable Development Goals Report 2024*. https://unstats.un.org/sdgs/report/2024/The-Sustainable-Development-Goals-Report-2024.pdf
University of Leicester. (2024). *Goal 2: Zero Hunger*. https://le.ac.uk/about/making-a-difference/sdgs/zero-hunger
Weisser, C. R. (2017). Defining sustainability in higher education: a rhetorical analysis. *International Journal of Sustainability in Higher Education*, *18*, 1076-1089. https://doi.org/DOI 10.1108/IJSHE-12-2015-0215
World Bank Group. (2020). *Addressing food loss and waste: a global problem with local solutions* https://openknowledge.worldbank.org/server/api/core/bitstreams/674c11d6-79eb-5905-8822-fcd9663eabb4/content
WRAP. (2022). *The Courtauld Commitment 2030: Progress and insights report 2022*. https://www.wrap.ngo/sites/default/files/2022-11/WRAP_The_Courtauld_Commitment_2030_Progress_and_Insights_Report_2022.pdf
WRAP. (2023). *The Food Waste Reduction Roadmap Progress Update 2023* https://www.wrap.ngo/sites/default/files/2023-11/WRAP-Food-Waste-Reduction-Roadmap-Progress-Update-report-2023-V1.0_0.pdf
WWF. (2022). *Hidden waste: the scale and impact of primary production* https://www.wwf.org.uk/our-reports/hidden-waste
WWF. (2024). *Unveiling the appetite for change* https://www.worldwildlife.org/publications/unveiling-the-appetite-for-change

Table 11.1: A scoping of best food waste practices based upon Times Higher Education (2024) ranked top winners across SDG 12 and 2

University	**Food waste bins – sent to anaerobic digestion facilities**	**Food waste sent to Energy for Waste (EfW) Plant**	**University catering repurposes/ distributes to farmers leftover scraps**	**Food waste apps/initiatives to distribute leftover food for students and/or local community**	**On campus food waste composting**	**Use technology to predict service levels, cook in smaller batches, optimized portion sizes**

SDG 12						
Bournemouth (UK)	x		x	x	x	
Kings College London (UK)	x			x		
Reading (UK)	X (dining locations)	X (offices, common rooms)		x		x
SDG 2						
Queen's University (Canada)			x	x		
Oklahoma State (USA)				x		
Lincoln (New Zealand)	x					

Source: author based on (Bournemouth University, 2024; King's College London, 2024; Lincoln University, 2022; Oklahoma University, 2024; Queens University, 2024; Simpson, 2023)

Table 11.2: Classifications within SDG assessment/guidance frameworks for Universities

Times Higher Education Impact Rating (THE)	**Sustainability Evaluation Tool for Higher Education Institutions**	**Education for the Sustainable Development Goals (ESDG)**	**Quacquarelli Symonds (QS) Sustainability Rankings**

	(SET4HEI)		
Research	Research	Research	Environmental & Social Impact
Teaching	Teaching and Learning	Education	Environmental & Social Impact
Stewardship	Governance and non-academic services	Operations and Governance	Governance
Outreach	Engagement	External leadership	Environmental & Social Impact

Source: Author based on (Quacquarelli Symonds, 2025; SDSN, 2020; THE, 2024; UNESCO-ISEALC, 2023)