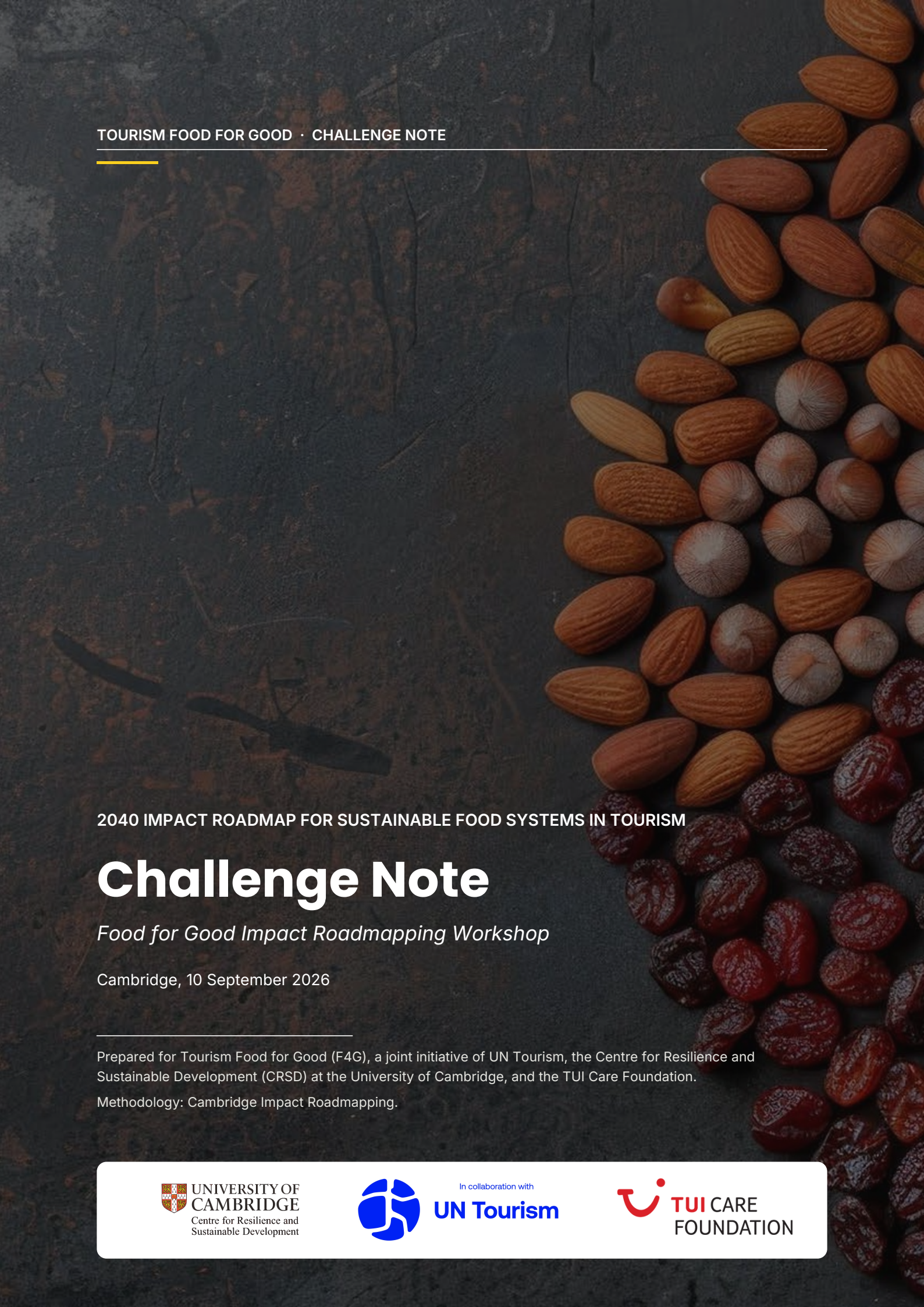


2040 IMPACT ROADMAP FOR SUSTAINABLE FOOD SYSTEMS IN TOURISM

Challenge Note

Food for Good Impact Roadmapping Workshop

Cambridge, 10 September 2026

Prepared for Tourism Food for Good (F4G), a joint initiative of UN Tourism, the Centre for Resilience and Sustainable Development (CRSD) at the University of Cambridge, and the TUI Care Foundation.

Methodology: Cambridge Impact Roadmapping.

UNIVERSITY OF CAMBRIDGE
Centre for Resilience and Sustainable Development

In collaboration with
UN Tourism

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About the Project

Tourism Food for Good: Co-Creating Sustainable Food Systems in the Tourism Sector, known as Tourism Food for Good (F4G), is a two-year, global action-research initiative to reshape how food is produced, sourced, served and reused across the tourism value chain. Launched in Berlin on 16 October 2025, F4G brings together policymakers, businesses, academics, civil society and local communities to identify practical, evidence-based responses to food loss, food waste and food insecurity in tourism destinations (TUI Care Foundation, 2025). Its central output is the 2040 Impact Roadmap for Sustainable Food Systems in Tourism, a framework intended to identify the leverage points through which tourism destinations, businesses and national administrations can transition toward more circular, resilient food systems (TUI Care Foundation, 2025). The initiative is delivered through three partner organisations, each contributing a distinct role.

The Centre for Resilience and Sustainable Development (CRSD) at the University of Cambridge's Department of Land Economy leads the initiative's research design and facilitation. Founded in 2014 and directed by Professor Nazia Mintz-Habib, CRSD works across sustainable investment, governance and responsible innovation, and applies participatory, systems-based methodologies, delivered publicly as Cambridge Impact Roadmapping, to convene stakeholders around complex, multi-actor policy problems (CRSD, University of Cambridge; Cambridge Enterprise). Within F4G, CRSD is responsible for the literature review, the NTA survey, stakeholder mapping and the design and facilitation of workshops such as this one, feeding directly into the construction of the 2040 Impact Roadmap.

UN Tourism, the United Nations specialised agency for tourism, contributes the sectoral mandate and technical foundation on which F4G builds. The initiative extends UN Tourism's Global Roadmap for Food Waste Reduction in the Tourism Sector, developed jointly with the United Nations Environment Programme, and situates F4G within UN Tourism's wider One Planet Sustainable Tourism Programme and its broader work on sustainable food systems, tourism statistics and destination policy (UN Tourism, input to the UN Secretary-General; TUI Care Foundation, 2025). UN Tourism's role within F4G includes convening national administrations, of which the F4G NTA Survey 2026 forms one instrument, and situating the initiative's outputs within intergovernmental tourism policy processes.

The TUI Care Foundation is F4G's primary funder and the partner through which the initiative connects to destination-level implementation. An independent charitable foundation established by TUI Group in 2016 and based in the Netherlands, it is currently supporting more than 70 projects across over 30 countries under ten global programs (TUI Care Foundation, Programmes). Within this portfolio, F4G is the Foundation's dedicated initiative on food systems and food waste across the tourism value chain, connecting the Foundation's destination-level networks and implementation experience to F4G's evidence base and, in time, to the practical delivery of the priorities the 2040 Impact Roadmap identifies (TUI Care Foundation, 2025).

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Disclaimer

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Executive Summary

Purpose of the workshop

Tourism Food for Good (F4G) is a two-year global action-research initiative led by UN Tourism and the Centre for Resilience for Sustainable Development at the University of Cambridge, enabled by the TUI Care Foundation. It aims to explore how tourism's purchasing power, supply networks and influence within destinations can help create food systems that are more sustainable, resilient and circular. Its central output will be the 2040 Impact Roadmap for Sustainable Food Systems in Tourism, identifying where stakeholders can intervene, individually and collectively, to create measurable economic, social and environmental value.

The Cambridge Impact Roadmapping Workshop, hosted by the University of Cambridge on 10 September is a critical step in developing that Roadmap. Its central question is:

How can stakeholders across the tourism food system align their capabilities and mobilise resources to create measurable economic, social and environmental value by 2040?

The workshop is not designed to present a finished diagnosis or a predetermined set of solutions. It is a structured co-creation process in which the evidence assembled during the initial phase of F4G will be tested against the knowledge and experience of the stakeholders in the room. Participants are therefore not simply being asked whether they agree with the Challenge Note. They are being asked to help improve it: to identify what is missing, challenge assumptions, explain how the system operates in practice, and determine where intervention could realistically create the greatest impact.

The outcomes of this process will feed directly into the development of the 2040 Impact Roadmap, moving F4G from diagnosis towards a genuinely co-created basis for action.

How we will work: Cambridge Impact Roadmapping

Cambridge Impact Roadmapping (CIR) method approaches the tourism food system as a complex system rather than a collection of separate problems. Procurement decisions, regulation, infrastructure, finance, consumer behaviour, food production, waste management and destination development interact with one another. Changes in one part of the system may enable progress elsewhere - or create unintended consequences.

The purpose of the method is therefore not to identify a single "best practice" and replicate it everywhere. It is to understand where the system can be influenced, by whom, in what sequence and under what conditions. CIR combines a shared complex-systems perspective, the testing of multiple working hypotheses rather than one preferred solution, and collective decision-oriented design.

Four elements are particularly important for the workshop:

- Systems boundaries - understanding what constitutes the tourism food system, at what geographical and institutional scales it operates, and where governance is present, absent or fragmented.
- Value-chain mapping - following the flows of food, resources and value from production and procurement through consumption to surplus, by-products and waste.
- Stakeholder knowledge - combining the evidence already assembled with the operational and lived

experience of businesses, governments, destinations, civil society, communities and other actors.

- Leverage and pathways - identifying points where intervention could generate significant change and sequencing those interventions into plausible pathways towards 2040.

Participants should therefore come prepared to think beyond the boundaries of their own organisation or part of the value chain.

The concepts to keep in mind

A central task of the workshop will be to identify where the tourism food system is not functioning as intended and where change could have disproportionate impact.

The Challenge Note uses four practical lenses:

- Blindspots - important information, actors or impacts that remain unseen or unmeasured.
- Bottlenecks - points where the movement of resources, information or action is constrained and therefore limits progress across the wider system.
- Dealbreakers - regulatory, financial, technical, institutional or other conditions capable of preventing an otherwise promising intervention from succeeding.
- Untapped assets - existing infrastructure, capabilities, knowledge, relationships or resources that could be mobilised but are currently underused.

Participants will also be asked to look for leverage points: places where a targeted intervention could generate wider systemic effects, rather than simply improving one isolated activity. Trust, relationships, shared incentives, institutional arrangements and coordination - the “social glue” connecting different parts of the system - are also treated as important elements of system resilience.

What the evidence currently suggests

The evidence base combines a review of more than 125 academic and institutional sources, a global survey of National Tourism Administrations and stakeholder mapping across the tourism food value chain. It points towards a system with considerable potential, but also significant structural constraints.

The Challenge Note organises this evidence around four categories that provide a common starting point for the workshop: Known Challenges, Known Responses, Known Opportunities and Known Unknowns. These are not presented as definitive conclusions. They are the current evidence-based diagnosis that participants are being asked to test, refine and, where necessary, challenge through their own experience.

Known Challenges

Definitional and measurement gaps remain substantial. While 35 of 45 surveyed NTAs report a tourism policy addressing food, only 8 currently collect tourism food-waste data. Definitions are also inconsistent: fewer than half report an official definition of food waste and only 27 per cent one for surplus food. Without common definitions and measurement, comparability, accountability and the tracking of progress remain difficult.

Institutional fragmentation operates across different scales. Food, tourism, waste, agriculture, transport,



environmental standards and biosecurity are governed through different institutions and regulatory systems. In some cases, requirements established at international level constrain what can be done with surplus food at destination level. Procurement - a potentially powerful lever - is often treated primarily as an operational matter rather than as a point for coordinated policy intervention.

The evidence also points to a pronounced gap between exposure and readiness. Small Island Developing States participating in the survey recorded substantially lower institutional readiness than non-SIDS respondents while reporting much greater dependence on imported food. Lower-income destinations similarly show weaker formal integration of local producers and MSMEs into tourism food policy, despite often facing greater food-import exposure and more fragile local supply chains.

Market concentration and ownership structures can further constrain action. In import-dependent destinations, a relatively small number of buyers may shape procurement decisions, while franchise and management-contract structures can separate operational responsibility from ownership and investment authority. This can make it difficult to scale successful interventions beyond individual properties or programmes.

Finally, the constraint is not simply a shortage of policy ideas. NTAs most frequently identify lack of awareness, funding, technical capacity and inter-institutional coordination, alongside enforcement and mandate gaps, as barriers to circular approaches to food in tourism. The question for the Roadmap is therefore not only what should be done, but what capabilities and enabling conditions are required to make action possible.

Known Responses

The Roadmap will not be starting from zero. National administrations and tourism businesses already report a range of policies, programmes and operational responses on which future action can build. Food-related tourism policy remains predominantly national, although destination- and city-level instruments are also emerging, providing a basis for intervention closer to where tourism food systems operate.

At sector level, the Global Roadmap for Food Waste Reduction in the Tourism Sector provides an existing hierarchy for action, prioritising prevention before redistribution, reuse, recycling and recovery, with disposal as the least preferred option. It also establishes 2030 reference targets for accommodation providers and cruise lines.

Industry-led responses demonstrate that many of the interventions under consideration are already being implemented, although unevenly. Large operators are using food-waste targets, measurement and AI-based tracking, biodigesters and other prevention and diversion approaches, while sector initiatives are developing common baselines and measurement methodologies. The workshop therefore needs to examine not only what works, but why existing responses remain fragmented and what would enable them to scale across different business and destination contexts.

Known Opportunities

The evidence also identifies a number of areas where the tourism food system may offer significant leverage. When NTAs are asked to look ahead to 2030 through a circularity lens, their priorities shift towards food-waste reduction, local sourcing and agrifood producer capacity-building. This suggests an opportunity to connect agendas that are often addressed separately: reducing waste, strengthening local supply chains and building producer capacity.

In import-dependent destinations, the evidence suggests that the challenge may often be less about creating demand for local food than about strengthening producers' ability to meet the volume, quality, certification



and consistency requirements of tourism businesses. This reframes local sourcing as a question of supply-side capacity and market linkage as much as one of procurement preference.

Further opportunities lie in moving beyond waste management towards bioeconomy approaches that keep organic materials and by-products in productive use, and in using training and capacity-building alongside infrastructure and investment. Existing examples also show how large tourism operators can act as anchor buyers or investors in local production by combining purchasing commitments with technical support to producers.

Importantly, the potential value is not limited to environmental outcomes. Local sourcing, food-waste prevention, redistribution and circular approaches can generate economic, health, food-security and social benefits simultaneously. The opportunity is therefore to understand where interventions can create multiple forms of value and broaden the coalition of actors with an interest in delivering them.

Known Unknowns

Important questions remain open. These are not reasons to postpone action; they are areas where participants' experience is particularly valuable.

The workshop should help determine:

- Measurement and valuation: What should be measured, by whom and at what level, given the current weakness of tourism-specific food-waste data and the limited evidence on the economic value of food-system leakage in some destinations?
- Sequencing of barriers: Are awareness, finance, technical capacity and coordination sequential constraints, or could progress in one materially unlock the others?
- Feasibility of local sourcing: Can local sourcing scale where tourism procurement is highly concentrated, or will producer capacity-building alone be insufficient to change purchasing behaviour?
- Scaling existing models: How can bioeconomy, training and local-sourcing models demonstrated by large businesses and foundation-funded programmes be adapted for smaller operators and resource-constrained destinations?
- Health, nutrition and equity: Who ultimately benefits from interventions such as local sourcing, and how should distributional, nutrition and equity effects be assessed alongside supply-chain efficiency?

Taken together, the evidence suggests that the gaps identified are structural rather than incidental. They arise from the way tourism food systems connect multiple actors, sectors and levels of governance, and from the very different structural conditions found across destinations. At the same time, existing responses and emerging opportunities provide grounds for measured optimism.

The workshop is therefore not searching for one universal intervention. The evidence instead points towards the need to build adaptive capacity - particularly around definitions, measurement, coordination and procurement - and to develop pathways that can respond to substantially different national and destination contexts.

What we ask participants to bring into the room

Participants' value to the process lies precisely in what cannot be obtained through desk research alone. Throughout the day, we invite participants to ask:

Does the system described here reflect how it actually works from where I sit? What is missing? Where are the real constraints? What assets or relationships are being overlooked? Where could intervention unlock change elsewhere in the system? What might prevent an apparently good solution from working in practice? And what would my organisation - or others in the system - need to do differently to make progress possible?

The aim is to leave Cambridge not with a definitive answer, but with a stronger shared understanding of the system, a clearer set of priority impacts and leverage points, and credible pathways towards action by 2040. The Challenge Note provides the evidence-grounded starting point; the workshop is where that evidence is tested, corrected and translated into the commitments and next steps that will underpin the 2040 Impact Roadmap.



Project Background

Tourism Food for Good (F4G) is a global action-research initiative founded on the thesis that tourism can become a powerful catalyst for food-system transformation, but that its potential remains constrained by fragmented evidence, competing priorities and insufficient coordination across the value chain. The research examines how the tourism sector's purchasing power, supply networks and influence within destinations can be mobilised to create food systems that are sustainable, resilient and circular. Sustainable food systems provide consistent and equitable access to food while protecting the environmental, social and economic resources on which future provision depends. Resilient food systems can anticipate, absorb, adapt to and recover from disruption while continuing to perform their essential functions. Circular food systems manage stocks and flows so that inputs, ingredients, by-products and waste remain in productive use for as long as possible, generating wider economic, social and environmental co-benefits across the ecosystem.

The Cambridge Impact Roadmapping (CIR) is a scientific method-workshop will test this thesis against scientific evidence and practitioner experience. Its central question is: **How can stakeholders across the tourism food system align their capabilities and mobilise resources to create measurable economic, social and environmental value by 2040?** The workshop will identify the interventions with the greatest potential for impact, the resources and capabilities they require, and the responsibilities of different actors. Its principal outcome will be an evidence-informed pathway towards the 2040 Impact Roadmap, designed to translate collective ambition into coordinated action and measurable value. For participants attending the workshop on 10 September 2026, the day will not consist of a conventional presentation of findings followed by comments. Instead, it will be a structured working session. Evidence from the extensive literature review and stakeholder surveys will be synthesised and presented through a Cambridge Challenge Note.

The Cambridge Challenge Note is a critical component of the collective-thinking process. It provides participants with a shared evidence base while creating space for that evidence to be questioned, tested and strengthened. The substantive work of validating the systems map, adding stakeholder knowledge, examining feedback loops, identifying leverage points, and uncovering blind spots, bottlenecks and dealbreakers can only be completed through participants' collective deliberation.

The outcomes will feed directly into the development of the 2040 Impact Roadmap for Sustainable Food Systems in Tourism. This process will ensure that the Roadmap reflects a genuinely co-created and critically deliberated position, rather than a synthesis based solely on desk research.

The Challenge Note is organised around five components that guide the workshop's critical-thinking process:

- Context
- Known Challenges
- Known Responses
- Known Opportunities
- Known Unknowns

The evidence base draws on three converging workstreams. The first is a scoping literature review of more than 125 academic papers, white papers and institutional reports on food systems, food waste and tourism. The second is the Food for Good Survey of National Tourism Administrations (NTAs), a 70-item global survey that had received 45 responses as of December 2025, spanning the full World Bank income classification and all six UN Tourism regional groupings, including six Small Island Developing States (SIDS), five Least Developed Countries and 26 Official Development Assistance recipient countries (F4G NTA Survey 2026). The third is a multi-scale stakeholder mapping exercise covering ten functional categories across the tourism food value chain, from airlines, hotels and resorts, importers and catering, cruise lines, tour operators and online travel agents, through to policy and regulatory actors, foundations and non-governmental organisations, industry associations, universities, and waste and circular-economy solution providers. Complementing the NTA survey, direct outreach beyond national tourism administrations extended to 53 non-NTA organisations identified through desk-based stakeholder mapping and invited to the workshop and Advisory Board, spanning airlines, cruise lines, hotel and resort groups, tour operators, UN agencies, foundations and NGOs, and waste-and-recycling operators (Food for Good Stakeholder Mapping, 2026.

Workshop Objectives

The Cambridge Impact Roadmapping Workshop is a deliberate scientific workshop to test, deepen and validate the systems mapping and evidence Tourism Food for Good (F4G) has assembled over its first year, together with the stakeholders whose engagement the 2040 Impact Roadmap will depend on. Four linked objectives structure the day:

- The first is to validate the systems mapping developed so far: to check that the initial mapping of the tourism food value chain reflects how the sector actually works, and to correct or refine it wherever participants' direct experience differs from what the literature review and F4G NTA Survey 2026 have been able to pick up from outside the room.
- The second is to bring that direct experience into the evidence base: airlines, hotels, cruise lines, tour operators, foundations and national tourism administrations each hold practical, on-the-ground knowledge that a desk-based review cannot supply on its own.
- The third is to identify feedback loops and leverage points, the specific points in the tourism food system where an intervention could realistically deliver the most progress on circularity and sustainability.
- The fourth is to surface blindspots, bottlenecks and dealbreakers, the barriers, coordination failures and untested assumptions that could otherwise derail policy innovation once the Roadmap moves from design toward delivery.

These four objectives build on one another rather than running in sequence, all in one day. Validating the map and adding participants' direct experience are what make it possible to answer the question of the workshop: **How can stakeholders across the tourism food system align their capabilities and mobilise resources to create measurable economic, social and environmental value by 2040?**

Taken together, the aim is to move the evidence gathered through the literature review and the F4G government and non-government Survey from a diagnosis to a genuinely co-created basis for the 2040 Impact Roadmap, in keeping with the wider purpose of Cambridge Impact Roadmapping: aligning public sector, private sector and civil society actors around a shared vision and plan of action.



Primer: Tourism Food Systems

How can stakeholders across the tourism food system align their capabilities and mobilise resources to create measurable economic, social and environmental value by 2040? To answer this question, this project undertook structured inquiry in global food systems and global tourism ecosystem, mapped shared interractions, and critical stakeholders. Before the workshop can identify where and how to intervene, participants need a shared understanding of what is meant by a food system, and by extension a tourism food system. The High Level Panel of Experts on Food Security and Nutrition defines a food system as gathering "all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the output of these activities, including socio-economic and environmental outcomes" (HLPE, Food Losses and Waste in the Context of Sustainable Food Systems, 2014). On this definition, a food system is not a single supply chain running in one direction from farm to plate, but the full set of actors, infrastructures, institutions and feedback loops through which food is produced, moved, prepared, consumed and, ultimately, wasted or recovered.

A tourism food system is this same set of elements, viewed through the lens of how tourism demand shapes them. Hotels, resorts, restaurants, cruise ships and airlines are not peripheral to global food systems; they are a distinct and very large source of food demand in their own right, one estimated to have served 80 billion meals to international and domestic tourists in 2019 alone (UN Tourism, *Global Roadmap for Food Waste Reduction in the Tourism Sector*, 2023). Tourism shapes food systems through three main channels:

- **procurement**, where hotel groups, tour operators and cruise lines set the specifications and volumes that determine what is grown, imported and stocked;
- **consumption,** where the scale, seasonality and cultural expectations of visitor demand differ from those of resident populations; and
- **waste & surplus** where food service is concentrated in particular places and times of year, creating both a distinctive food-waste profile and a distinctive opportunity for intervention, since a comparatively small number of large operators can plausibly act at a scale that would be far harder to coordinate across a fragmented resident food-service sector.

The evidence assembled for Tourism Food for Good (F4G) underscores that this system looks different depending on where one stands within it. United Nations agencies tend to frame the tourism food system holistically, covering its many stakeholders and cutting across several disciplines, while individual airlines, cruise lines and hotel operators tend to focus more narrowly on food safety, legality and profitability, leaving broader questions of sustainability, resilience and equity to be addressed elsewhere, as our literature review process found when comparing how UN Tourism, the International Air Transport Association, the International Maritime Organization and individual hotel and cruise operators each describe the same underlying system. Even within governance, priorities diverge: what looks necessary from an international vantage point can appear extractive or irrelevant at destination level, while community-level concerns about food access and livelihoods can sit in tension with national or regional priorities around efficiency, compliance or trade. This range of viewpoints is not a problem to resolve before the workshop begins; it is itself evidence of how complex the system is, and part of the reason the workshop is designed to bring the industry and government perspectives represented in the room into direct conversation with one another rather than settle between them in advance.



Primer: Systems Thinking

The conceptual foundation for this action-research applies complex adaptive systems thinking alongside political economy theories to better understand and co-create responses with a diverse range of actors. Cambridge Impact Roadmapping methodology is systems thinking: understanding a problem not by isolating its parts but by examining how those parts interact, feedback on one another, and produce outcomes that no single part could explain on its own. The approach traces back in large part to the general system theory developed by the biologist Ludwig von Bertalanffy, who argued that living, social and organisational systems share certain structural properties, feedback and self-regulation, non-linear interaction between components, and emergent behaviour, that are obscured when such systems are studied by breaking them down into isolated parts (von Bertalanffy, General System Theory: Foundations, Development, Applications, 1968). Applied to tourism food systems, this means that a hotel's procurement decision, a national food-waste regulation and a tour operator's contract terms cannot be understood, or changed, in isolation from one another; each is one part of a wider system, and how the system behaves depends on how those parts are connected.

Systems thinking's most direct practical legacy for this workshop is Donella Meadows' concept of leverage points: places within a system where a small, well-targeted change can produce disproportionately large results, in contrast to interventions that spend effort on parameters the system will simply absorb or route around (Meadows, *Leverage Points: Places to Intervene ina System*, 1999). Meadows distinguishes weaker leverage points, such as adjusting subsidies or standards, from more powerful ones, such as changing the rules, information flows, goals or underlying assumptions that govern how a system behaves (Meadows, 1999). For a tourism food system, this distinction matters directly: a destination that only adjusts individual parameters, for example, a single hotel's food-waste target, without addressing the informational and institutional rules that shape procurement and disposal across the sector, is unlikely to see that change spread beyond that one operator.

Identifying productive leverage points requires first understanding where and why a system is not working as intended. The analytical categories used in this workshop draw directly on this systems tradition. About two decades of action-research led by Professor Nazia Habib on sustainable development-related issues linked with equality, sustainability and innovation primarily within food and energy value chains identified three potential breaking points within complex political-economic systems: blind spots, bottlenecks and dealbreakers. Resilient systems thinking can be applied most effectively at these points.

Habib’s research argues that people operating across multiple layers of a complex system can strengthen its resilience by identifying these breaking points and understanding how they interact. Blind spots conceal important information or overlooked perspectives; bottlenecks restrict the movement of resources, knowledge or action; and dealbreakers are conditions that can prevent cooperation or cause an intervention to fail. Once identified, these weaknesses can be addressed through visible and invisible forms of “social glue”, including trust, relationships, shared incentives, institutional arrangements and coordinated action. Like an adhesive that strengthens a vulnerable joint, this social glue can reinforce connections, prepare the system for disruption and reduce the risk of sudden breakdown.

They are blindspots, bottlenecks and dealbreakers.

- **Blindspots** are aspects of the system that go unrecognised or unmeasured even by those well placed to act on them, such as a national administration with a tourism policy that addresses food but no data collection on tourism food waste, a pattern this note documents extensively below.
- **Bottlenecks** are constraint points through which a disproportionate share of a system's activity must pass, so that a single constrained point, for instance the quality and certification standards local producers must meet before supplying international hotel chains, limits outcomes across the wider system regardless of how strong demand is on either side of it.
- **Dealbreakers** are structured barriers or conditions, whether regulatory, financial, technical or institutional, that actively obstruct action even where everyone agrees on the underlying goal; these correspond closely to the awareness, funding, technical capacity and coordination constraints that NTAs report most frequently to the Tourism Food for Good (F4G) NTA Survey 2026.

Untapped assets, finally, are resources already present within the system, whether physical infrastructure, know-how, or social and professional relationships, that could be put toward a shared goal but currently are not; identifying these matters as much as identifying gaps, since a roadmap built solely around fixing deficits would overlook capacity that already exists and could be redirected.

The Centre for Resilience and Sustainable Development (CRSD) at the University of Cambridge has applied this systems approach across a range of complex, multi-actor policy settings, developing a "whole of system" methodology that integrates systems-based thinking with political-economic theory to improve decision-making in the face of complexity (Mintz-Habib, Takin and Parris, *Their Future, Our Action*, 2022). F4G applies this same systems lens to the specific case of tourism food systems, treating leverage points, blindspots, bottlenecks, barriers and untapped assets not as abstractions but as the practical categories through which the workshop's discussion will be structured.

Cambridge Impact Roadmapping (CIR) Method

A Cambridge Impact Roadmap is a scientific, evidence-informed framework for achieving defined short-, medium- and long-term impacts. It is developed through a structured method workshop that creates a quasi-experimental setting to test evidence, assumptions, and possible interventions against stakeholder knowledge and responses. The method also examines how trust, power, incentives and group dynamics influence decisions within a system. Working backwards from the desired impact, participants identify the actions, responsibilities, resources and milestones needed to create measurable economic, social and environmental value.

Traditional policy and programme design often relies on triangulation, a long-standing social science technique that tests the same causal question using multiple methods to validate conclusions. While analytically rigorous, triangulation frequently produces divergent—but internally valid—results. In highly contested policy domains, this can lead to prolonged methodological debate, uncertainty for decision-makers, and, ultimately, inaction.

Cambridge Impact Roadmapping addresses this challenge by shifting the focus from methodological contestation and deliberation over which methods are superior for decision-making to shared navigation of the system. By involving diverse stakeholders from across the relevant sectoral network at the outset, it fosters a collaborative approach that builds confidence and trust among practitioners and policymakers. Confidence and trust generated during the Impact Roadmapping workshop can lead to faster, better, and more impactful programme design.

Key features of the CIR method:

- **Shared complex systems perspective:** the methodology treats impact challenges as dynamic systems shaped by social, political, economic and environmental interactions, rather than as isolated technical problems.
- **Multiple working hypotheses:** Impact Roadmapping explicitly applies the scientific method of multiple working hypotheses (“strong inference”), enabling stakeholders to test alternative pathways, avoid confirmation bias and remain adaptive in data-rich and uncertain environments.
- **Collective decision-oriented design:** the approach is purpose-built for practitioners and decision-makers, clarifying where to intervene, in what sequence, and with what level of coordination to maximise net positive impact, empowering stakeholders to act with confidence and purpose.

In practice, Cambridge Impact Roadmapping combines four linked components that this workshop will draw upon directly:

1. Systems boundaries define the tourism food system under consideration, its relevant scales, and where governance of it is present, absent or asymmetric.
2. Value chain mapping traces flows from production through to consumption, surplus and by-products, across the destinations and operators the Roadmap covers.
3. Stakeholder engagement convenes public, private, civil society and community actors through structured workshops and interviews, so that operational and lived experience inform the analysis alongside desk-based evidence.
4. Leverage and pathways draws on this combined evidence base to identify the specific points in the system where an intervention could realistically deliver progress, and to sequence these into the pathways that make up the 2040 Impact Roadmap.

The Cambridge Challenge Note

Context

This section describes the wider system in which the challenge has emerged. It defines the scope of the inquiry, explains why the challenge matters, and provides participants with a shared starting point for deliberation. In this Challenge Note, the Context has two sections. The first highlights the principal findings from the literature review. The second presents key statistics which are ‘boundary data points’ like we have in geographical maps, help frame the global food system as a complex and dynamic system embedded within, and influenced by, the global tourism sector. Together, these sections establish the evidence base needed to examine the known challenges, responses, opportunities and remaining unknowns.

Literature Review

Tourism food systems are increasingly understood as complex adaptive systems: diverse groups of interacting actors, from importers and hoteliers to national regulators and international tour operators, whose collective behaviour cannot be predicted just from what any single actor intends, and which tend to produce outcomes shaped by history, feedback loops and emergent patterns rather than by central planning (Holland, 1995; Levin et al., 2013). This framing helps explain why the Tourism Food for Good (F4G) Survey finds such uneven institutional readiness across respondents: readiness is not simply a function of national wealth or political will, but of how food, tourism and waste-management sub-systems happen to be connected, or left unconnected, in a given jurisdiction. Systems like this tend to resist top-down redesign; interventions that ignore the existing pattern of connection between sub-systems tend either to be absorbed without effect or to trigger unexpected feedback elsewhere in the system, a caution directly relevant to how the 2040 Impact Roadmap should be framed.

Context describes the wider system in which the challenge has emerged. It defines the scope of the inquiry, explains why the challenge matters, and provides participants with a shared starting point for deliberation. In this Challenge Note, the Context has two sections. The first highlights the principal findings from the literature review. The second presents key statistics which are ‘boundary data points’ like we have in geographical maps, help frame the global food system as a complex and dynamic system embedded within, and influenced by, the global tourism sector. Together, these sections establish the evidence base needed to examine the known challenges, responses, opportunities and remaining unknowns.

A related literature on social-ecological resilience extends this systems framing by asking specifically how governance capacity is built, or eroded, within such systems over time. Resilience in this tradition is not defined as a return to a prior state, but as a system's ability to absorb shocks while still functioning as itself, and to adapt when that ability is exceeded (Folke, 2016). Governing for resilience in regional social-ecological systems has been shown to depend on institutions that can operate across different scales, from local to national to international, on access to diverse sources of information and expertise, and on room to experiment and learn, rather than a single fixed policy prescription (Lebel et al., 2006). Read against the F4G Survey, this suggests that the SIDS readiness gap documented below is not simply a resourcing shortfall but plausibly reflects a narrower capacity, in Lebel et al.'s sense, to absorb and act on cross-scale information about tourism food systems, a distinction with direct implications for the kind of support the Roadmap should prioritise for these destinations.



This connection problem has several well-documented dimensions. The first is definitional and operational: research on food waste management within the hospitality sector points to specific, recurring operational hot spots, including inaccurate forecasting of guest numbers, weak communication with local suppliers, and purchasing patterns poorly matched to perishable food provisioning, all of which are more tractable once a shared definition of food waste and surplus food is in place (Amicarelli et al., 2021). More recent research on circular economy strategies in hospitality corroborates this operational focus while broadening it: reviews of current practice find that circularity initiatives in hotels cluster heavily around waste prevention and food donation, with comparatively limited uptake of upstream measures such as circular procurement or by-product valorisation, and that the businesses furthest along this trajectory tend to be those with dedicated sustainability roles or explicit corporate targets rather than those responding solely to regulatory pressure (Bux and Amicarelli, 2023). The absence of shared definitions across many of the NTAs surveyed for F4G is therefore not a mere administrative gap; it is a barrier to the kind of measurement that would let destinations track progress against the operational and circularity-oriented interventions this literature identifies as most tractable.

The second dimension is institutional fragmentation. Where governance of a shared problem, such as food waste in tourism, is distributed across multiple agencies, levels of government and non-state actors with only partial overlap in mandate, research on collaborative governance networks shows that this fragmentation itself becomes a source of transaction costs and coordination failure, independent of the technical merits of any individual policy proposal (Berardo, Fischer and Hamilton, 2020). This is consistent with the F4G Survey finding that weak inter-institutional coordination is among the most frequently cited barriers to progress, and it suggests that the workshop's task includes not only technical and financial solutions but also the design of coordination mechanisms across the fragmented set of actors who each hold a partial claim on tourism food systems.

A third dimension, distinct from but closely related to institutional fragmentation, concerns the specific food security and supply-chain characteristics of Small Island Developing States. Research on the triple burden of malnutrition in SIDS situates high dependence on imported food within a wider set of structural vulnerabilities, including narrow domestic production bases, exposure to global commodity price shocks and climate-related disruption to both agriculture and shipping, and argues that improving local food production offers co-benefits for nutrition, resilience and foreign exchange exposure simultaneously rather than as separate policy goals (Hickey and Unwin, 2020). Complementary work synthesising perspectives from across SIDS on strengthening local food systems identifies land access, limited agricultural labour, market fragmentation and the pull of tourism-related employment away from agriculture as recurring constraints, alongside a consistent finding that top-down technical solutions transfer poorly across the diversity of SIDS contexts without adaptation to local governance and cultural conditions (Guell et al., 2022). This literature helps to explain why the import dependence documented among SIDS respondents to the F4G Survey should be read as a structural feature of these economies rather than a policy oversight correctable by any single intervention.

Read together, this literature suggests that the gaps documented below, in definitions, in measurement, in cross-scale governance capacity and in the structural conditions facing import-dependent SIDS, are not incidental shortcomings but structural features of a complex, multi-actor system operating under resource and informational constraints that vary systematically by context. Addressing them is therefore less a matter of transferring a single best-practice model than of building the kind of adaptive, cross-scale governance capacity that the resilience literature associates with sustained progress, calibrated to the specific coupling of food, tourism and waste-management sub-systems found in each destination.

For the design of the 2040 Impact Roadmap, this body of theory points toward several practical implications: interventions should be sequenced to build measurement and definitional capacity before, or alongside, ambitious reduction targets; coordination mechanisms should be treated as a deliverable in their own right rather than an assumed by-product of technical assistance; and differentiated pathways should be developed for import-dependent SIDS destinations rather than a single global template applied uniformly across highly heterogeneous national contexts. The workshop is designed to test each of these implications against participants' direct experience before they are carried forward into the Roadmap's design.

Boundary Datapoints

Boundary data points are selected quantitative indicators that define the scale, reach and pressures of the system under examination. They do not provide a complete diagnosis. Instead, they establish the empirical boundaries within which participants can interpret the challenge, test assumptions and identify priorities for the 2040 Impact Roadmap. The data below locate tourism's food footprint within the wider global food system and demonstrate both the urgency of the challenge and the value that could be created through intervention.

The scale of the underlying problem is substantial. However, we are only looking at problem condition to drive 2040 agenda. An estimated 80 billion meals were served to international and domestic tourists in 2019, equivalent to feeding a population of roughly 74 million people three meals a day for a year (UN Tourism, Global Roadmap for Food Waste Reduction in the Tourism Sector, 2023). Food service, of which tourism forms a significant part, generates 26 per cent of all food wasted at the consumption stage of the global value chain, and in Europe the hospitality and food service industries alone account for 12 per cent of total food loss and waste, valued at more than EUR 35 billion. The annual cost of food wasted across global hospitality and food service is estimated at over USD 100 billion (UN Tourism, 2023).

This sits within a larger food system picture. According to UN Tourism, Global Roadmap for Food Waste Reduction in the Tourism Sector, 2023. Tourism's food footprint is embedded within a much larger and highly interconnected global system, and we aim to reduce these data post 2040 assessment following a successful global roadmap execution:

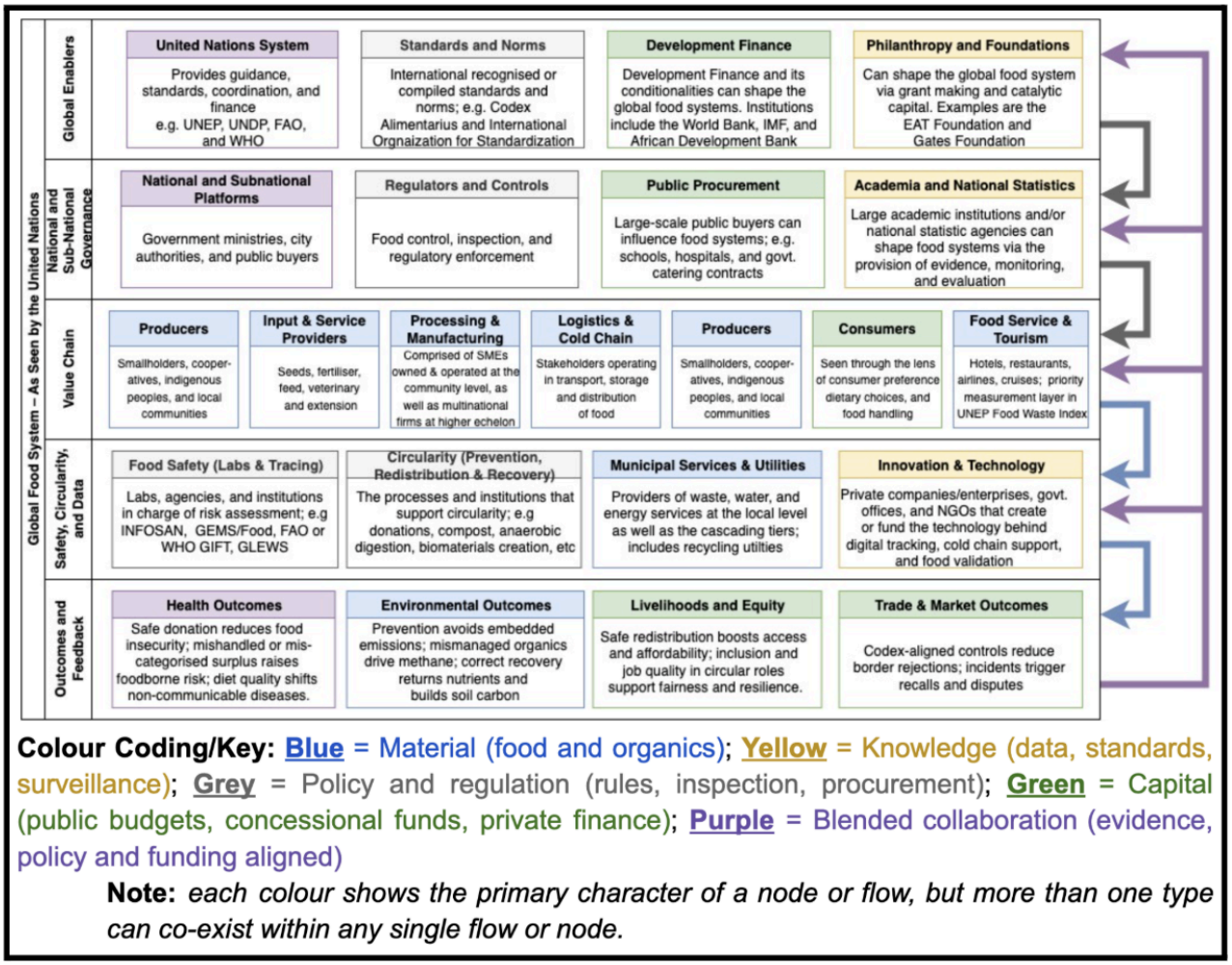
- The global food system generates approximately **34 per cent** of global greenhouse gas emissions.
- Food loss and waste alone account for an estimated **8 to 10 per cent** of global greenhouse gas emissions.
- Food production occupies approximately **half** of the world's habitable land and uses around **70 per cent** of global freshwater withdrawals.
- Approximately **14 per cent** of food is lost between harvest and the market.
- A further **17 per cent** is wasted at the retail and consumer stages.
- Without effective intervention, the economic cost of food loss and waste is projected to increase **by 60 per cent** by 2030, exceeding **USD 1.5 trillion annually**.

The business case for action within tourism is not purely theoretical. A cross-country study of 42 hotels across 15 countries participating in food waste reduction programmes found that for every USD 1 invested in measures to reduce kitchen food waste, hotels saved approximately USD 7, principally through reduced purchasing and disposal costs (UN Tourism, 2023).



This finding matters for how the workshop frames its recommendations: reduction measures need not depend solely on regulatory pressure or corporate social responsibility motivations, since well-designed interventions are also directly commercially attractive to individual operators.

Box 1: How the United Nations Understands Food Systems



Against this backdrop, the F NTA Survey 2026, a 70-item instrument fielded jointly with UN Tourism during 2025 and closed with 45 responses received as of December 2025, gathered responses from 45 national administrations, including six Small Island Developing States, to establish a baseline of institutional readiness ahead of the workshop. On a composite six-indicator readiness index spanning definitional, policy, programmatic, regulatory and data-collection capacity, the sample records a mean score of 3.07 out of 6 (range 0–6), with a pronounced gap between Small Island Developing States and other respondents discussed below. The workshop's task is to move from this baseline, and from the wider sectoral and global context set out above, toward a shared global roadmap for sustainable food systems in tourism to 2040.

Figure 1. Sample composition of the F4G NTA Survey 2026. Distribution of the 45 responding National Tourism Administrations by World Bank FY26 income group and by country category (SIDS, Least Developed Countries, Official Development Assistance recipients, EU member states) (F4G NTA Survey 2026).

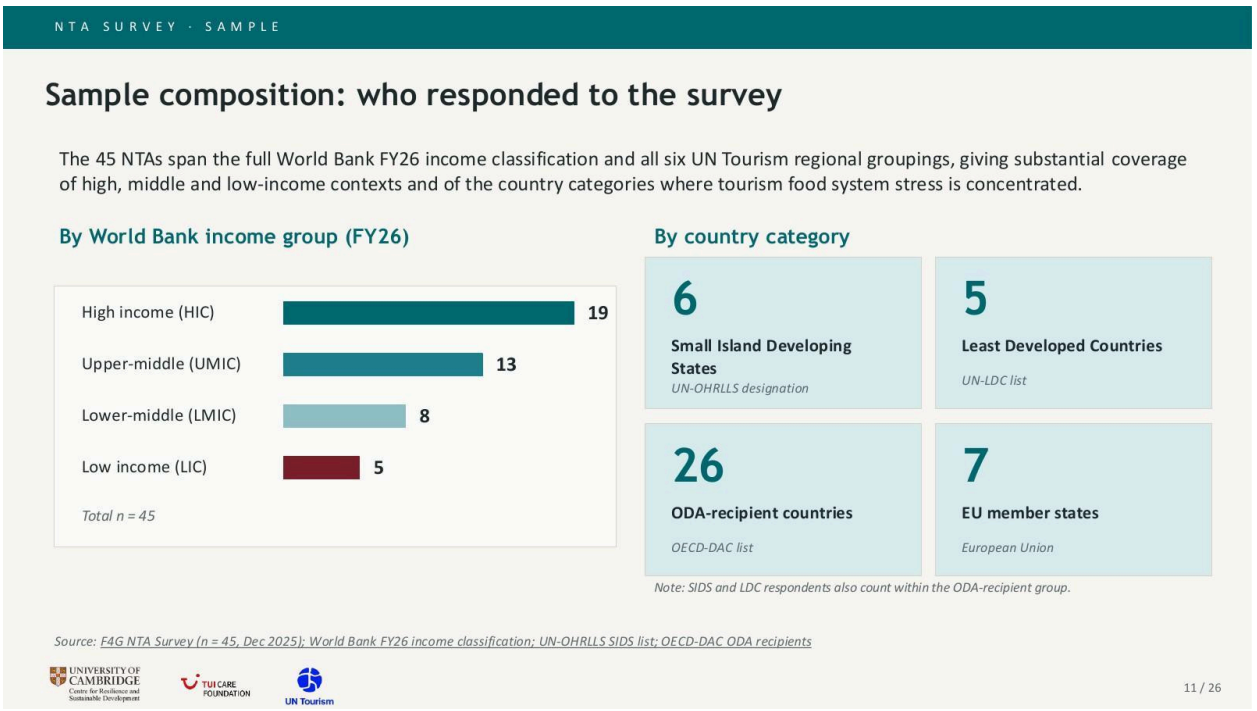


Figure 1a. Geographic distribution of the 45 responding National Tourism Administrations. Countries shaded in green submitted a response to the F4G NTA Survey (F4G NTA Survey, n = 45, December 2025).

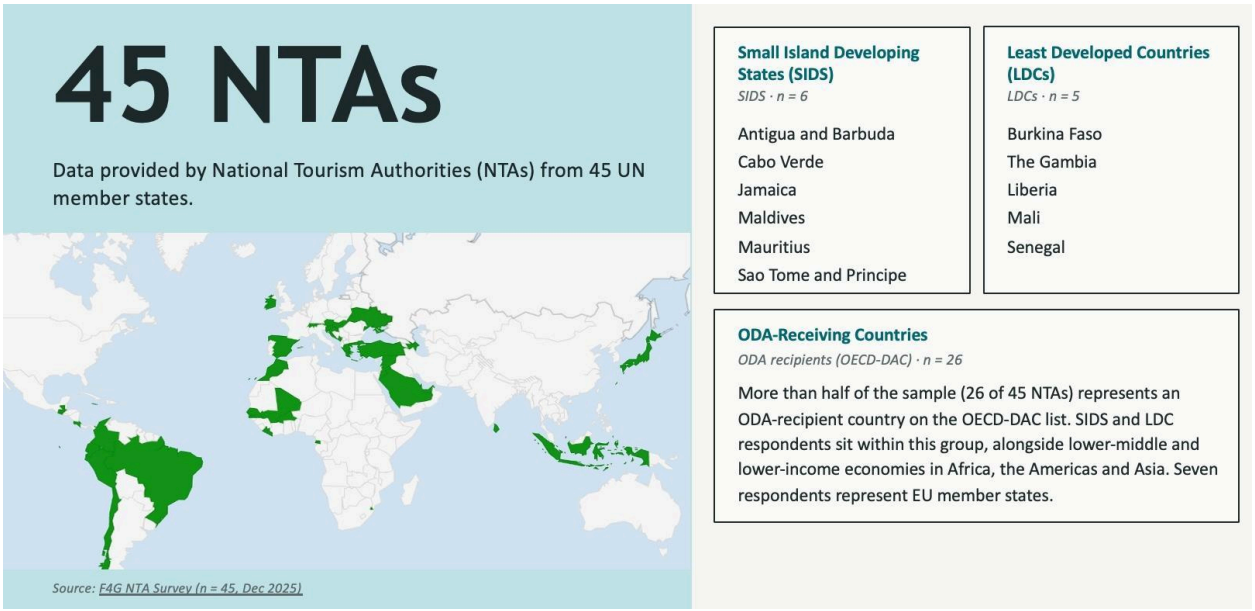


Table 1. Country classification of the 45 responding National Tourism Administrations. Income group per World Bank FY26 classification (effective 1 July 2025); Least Developed Country (LDC) status per the UN Committee for Development Policy list, with "Graduated" denoting a country that has completed LDC graduation; Small Island Developing State (SIDS) status per the UN-OHRLLS designation; Official Development Assistance (ODA) recipient status per the current OECD DAC List of ODA Recipients (F4G NTA Survey 2026; World Bank; OECD-DAC).

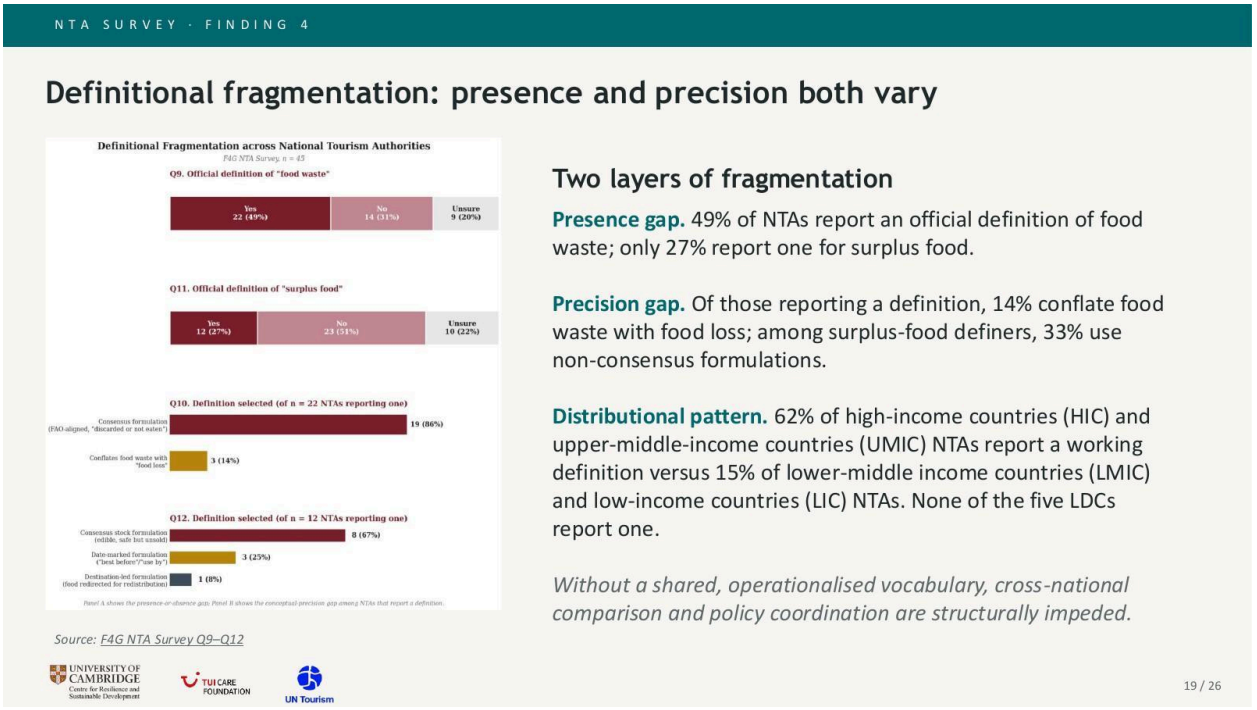
Country	SIDS	Income group (FY26)	LDC status	ODA recipient
Andorra	N	HIC	N	N
Antigua and Barbuda	Y	HIC	N	N
Austria	N	HIC	N	N
Azerbaijan	N	UMIC	N	Y
Bahrain	N	HIC	N	N
Brazil	N	UMIC	N	Y
Burkina Faso	N	LIC	Y	Y
Cape Verde	Y	UMIC	Graduated	Y
Chile	N	HIC	N	N
Colombia	N	UMIC	N	Y
Costa Rica	N	HIC	N	Y
Croatia	N	HIC	N	N
Ecuador	N	UMIC	N	Y
Equatorial Guinea	N	UMIC	N	Y
Gambia	N	LIC	Y	Y
Greece	N	HIC	N	N
Guatemala	N	UMIC	N	Y
Hungary	N	HIC	N	N
Indonesia	N	UMIC	N	Y
Ireland	N	HIC	N	N
Jamaica	Y	UMIC	N	Y
Japan	N	HIC	N	N
Jordan	N	LMIC	N	Y
Lebanon	N	LMIC	N	Y
Liberia	N	LIC	Y	Y
Maldives	Y	UMIC	N	Y
Mali	N	LIC	Y	Y
Mauritius	Y	UMIC	N	Y
Montenegro	N	UMIC	N	Y
Morocco	N	LMIC	N	Y
Peru	N	UMIC	N	Y
Qatar	N	HIC	N	N
San Marino	N	HIC	N	N
Sao Tome and Principe	Y	LMIC	Graduated	Y
Saudi Arabia	N	HIC	N	N
Senegal	N	LMIC	Y	Y
Slovenia	N	HIC	N	N
Spain	N	HIC	N	N
Sri Lanka	N	LMIC	N	Y

Country	SIDS	Income group (FY26)	LDC status	ODA recipient
Swaziland	N	LMIC	N	N
Switzerland	N	HIC	N	N
Syria	N	LIC	N	Y
Turkey	N	UMIC	N	Y
Ukraine	N	UMIC	N	Y
United Arab Emirates	N	HIC	N	N

Known Challenges

Definitional and measurement gaps. Fewer than half of surveyed NTAs (22 of 45, 49 per cent) report having an official definition of food waste, and only 12 of 45 (27 per cent) have one for surplus food (Tourism Food for Good (F4G) NTA Survey 2026). This constrains comparability of national data and complicates any attempt to set or track reduction targets. The gap is widest at the point where it matters most for accountability: while 35 of 45 NTAs (78 per cent) report a tourism policy that addresses food, only 8 of 45 (18 per cent) actually collect data on tourism food waste. Policy commitment is therefore substantially ahead of measurement capacity across the sample (F4G NTA Survey 2026).

Figure 2. Definitional fragmentation across National Tourism Administrations. Presence and precision of official definitions of food waste (Q9) and surplus food (Q11) across the survey sample, and the distribution of definitional formulations used by respondents who report having one (F4G NTA Survey 2026).



Institutional fragmentation across scales. Our stakeholder mapping process identified a layer of governance that sits above, and is largely disconnected from, destination-level tourism policy: food safety and environmental standards set by bodies such as Codex Alimentarius, the International Maritime Organization under MARPOL Annex V, and the International Civil Aviation Organization. International Catering Waste rules illustrate the effect directly: uneaten food from flights and ships that cross borders must be sterilised or incinerated to prevent biosecurity risk, which in practice precludes donation even where the food remains packaged and safe and the destination has both the infrastructure and the willingness to redistribute it. This scale mismatch compounds a more general pattern documented in the wider hospitality

literature: food waste in the sector has historically been under-researched relative to agricultural and environmental waste, with procurement decisions, though highly consequential for the volume and destination of food waste, typically treated as a background operational matter rather than a lever for policy (Filimonau and De Coteau, 2019). The result is a governance gap at precisely the point, procurement, where destinations, operators and regulators would need to coordinate most closely.

A pronounced SIDS readiness gap. Using a composite readiness index built from six indicators reported in the F4G NTA Survey 2026 (an official food-waste definition; a tourism policy or strategy that references food; a food-related tourism programme; a circular economy policy that includes food; food-waste regulation; and tourism food-waste data collection), SIDS score markedly lower than other respondents: a mean of 1.33 out of 6, against 3.26 out of 6 for non-SIDS NTAs, a gap of 1.93 points on a six-point scale. SIDS are also far more exposed to import dependence: five of the six SIDS respondents (83 per cent) describe their tourism food supply as "mostly" or "nearly all" imported, compared with 8 of 39 non-SIDS respondents (21 per cent) (F4G NTA Survey 2026). This gap carries the clearest equity implications in the sample: import dependence, market concentration, institutional fragmentation and narrower governance capacity combine to constrain the pace at which Small Island Developing States can realistically scale local sourcing and circular practice, as both our stakeholder mapping process and the F4G NTA Survey 2026 found (F4G NTA Survey 2026; IFC and World Bank, 2024).

Figure 3. Import dependence in tourism food supply, SIDS compared with non-SIDS. Share of NTAs reporting that the tourism sector is supplied mostly or near-totally by imports, disaggregated by SIDS and non-SIDS status (F4G NTA Survey 2026).

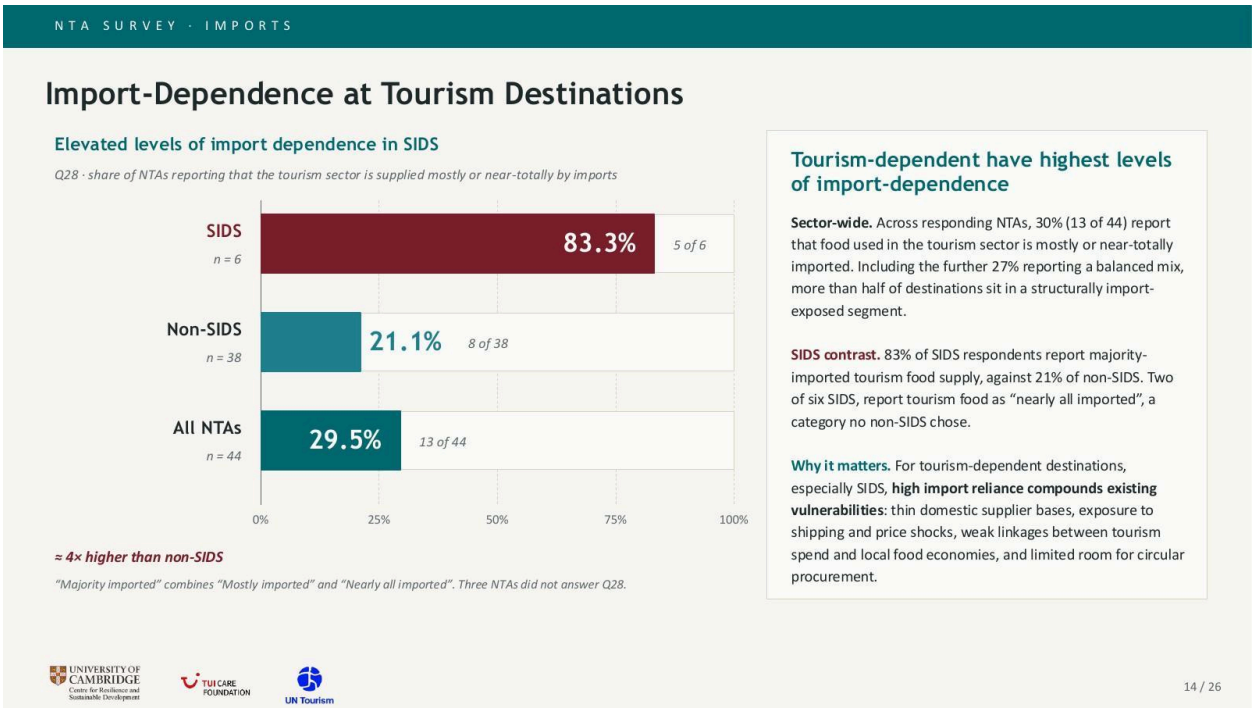
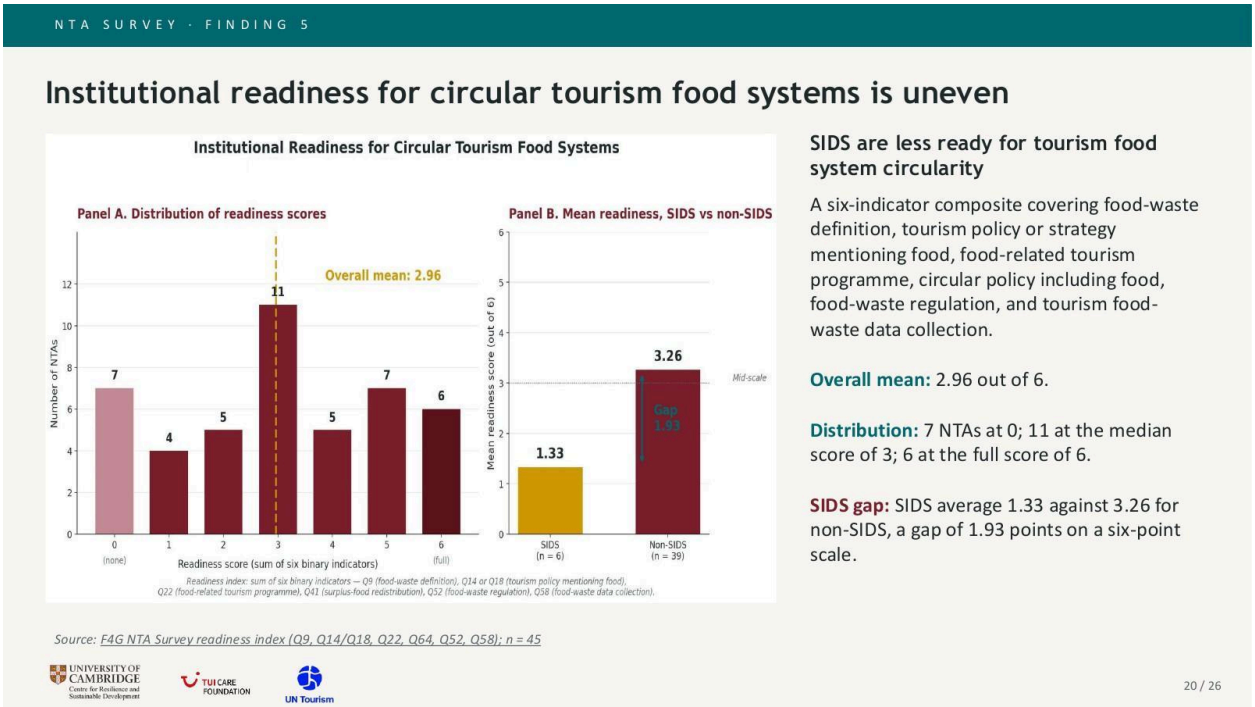


Figure 4. Institutional readiness for circular tourism food systems. Distribution of composite readiness scores across the full sample, and the mean readiness gap between SIDS and non-SIDS respondents (F4G NTA Survey 2026).



An institutional inversion between exposure and integration. Disaggregating the same survey by World Bank income group reveals a further layer to this gap. NTAs in lower-income countries, precisely those with the greatest food-import exposure and the most fragile local supply chains, report the weakest formal integration of local micro, small and medium enterprises and producers into tourism food policy. The gap between higher-income and lower-income respondents reaches 53 percentage points for food-waste regulation, 47 points for having an official food-waste definition, 37 points for food-related programmes, and 36 points for surplus-food redistribution mechanisms (F4G NTA Survey 2026). Written responses to the same survey describe these constraints as compounding rather than isolated: one Near Eastern respondent cited "policy, data, infrastructure and capacity gaps" together as key challenges, while a West African respondent noted that waste "is not sorted; all types end up in a dump site which is not engineered for the purpose" (F4G NTA Survey 2026). Read together, the destinations most exposed to import dependence and food-system fragility are also, on this evidence, the least institutionally equipped to act on it without external support.

Import dependence and market concentration: a structural pattern illustrated by one case. These dynamics recur, in varying degrees, across import-dependent SIDS more broadly. Research on the triple burden of malnutrition in SIDS situates high dependence on imported food within a wider set of structural vulnerabilities, including narrow domestic production bases, exposure to commodity price shocks, and climate-related disruption to agriculture and shipping (Hickey and Unwin, 2020), while comparative work across SIDS identifies land access, limited agricultural labour, market fragmentation and the pull of tourism employment away from farming as recurring constraints on local production (Guell et al., 2022). Cabo Verde, one of the six SIDS respondents to the F4G NTA Survey 2026, illustrates how these general patterns can combine with concentrated market structure within a single destination. Tourism directly contributes 25 per cent of GDP, rising to 44 per cent once indirect effects are included (IFC and World Bank, *Cabo Verde Country Private Sector Diagnostic*, 2024). Around 80 per cent of the food and beverages consumed in hotels and resorts is imported, even though tourism accounts for only about 20 per cent of total domestic food consumption; only an estimated 5 to 10 per cent of hotel food demand is met through local sourcing, and where local producers do attempt to supply the sector, roughly 30 per cent of their output is rejected on quality grounds, pointing to a capacity and standards gap rather than an absence of demand (IFC and World Bank, 2024). Arrivals are simultaneously concentrated commercially: a single international tour operator

controls approximately 47 per cent of the national market, rising to 83 per cent on the island of Boa Vista, and affiliated hotels generate 98 per cent of their business through international tour operators (IFC and World Bank, 2024). Import dependence and buyer concentration together shape procurement decisions well beyond the reach of national food or agricultural policy alone.

Ownership and management structures diffuse accountability. Beyond procurement concentration itself, our literature review process found that franchise and management-contract structures, common across large hotel groups, separate day-to-day operational control from asset ownership. Local managers frequently lack the authority or capital to replicate pilot sustainability projects developed elsewhere within the same brand, which constrains how proven interventions, including the local-sourcing and training programmes discussed under Known Opportunities below, scale beyond the individual properties where a corporate parent or foundation has directly intervened.

Structural barriers reported by NTAs. Asked what most constrains progress on circular approaches to food in tourism, respondents most frequently cited a lack of awareness (29 of 45 mentions), lack of funding (28), limited technical capacity (26), weak inter-institutional coordination (20), lack of enforcement (17) and lack of policy mandate (12). The pattern suggests that the binding constraint for many administrations is not the absence of a policy idea but the absence of institutional means to act on one, a finding consistent with the institutional fragmentation evidence discussed above.

Known Responses

NTAs already report a wide range of activity on which the workshop can build. Where food-related policy exists, it most often sits at national level (64 per cent of food-related policies), though a meaningful minority of respondents (17 per cent) report destination- or city-level instruments, indicating some willingness to work at the sub-national scale where tourism food systems actually operate (Tourism Food for Good (F4G) NTA Survey 2026).

Several SIDS respondents report a partial institutional foundation, for example a circular economy policy that includes food while remaining unsure or without regulation in other respects, a pattern consistent with the broader SIDS finding of partial rather than absent institutional foundations (F4G NTA Survey 2026).

At the sectoral level, UN Tourism's Global Roadmap sets out a hierarchy of food waste management strategies, from prevention (avoiding overproduction and improving storage), through redistribution and reuse (donation, animal feed, bio-based materials), to recycling and energy recovery, with disposal treated as the least preferred outcome (UN Tourism, 2023). The Roadmap also establishes 2030 targets that give the sector concrete reference points: accommodation providers are asked to halve food waste per guest night and divert all residual food waste from landfill or incineration (50 per cent where infrastructure does not yet exist); cruise lines are asked to halve food waste per guest day and eliminate discharge to sea by 2030 (UN Tourism, 2023). These targets, and the hierarchy underpinning them, provide a shared reference framework that the workshop's global roadmap can adopt and localise across diverse national and destination contexts.

Industry-led responses are also emerging at scale. Major operators have begun acting within, and in places ahead of, the hierarchy above. Hilton has committed to cutting food waste by half by 2030 across its portfolio, Accor and Costa Cruises have deployed AI-based waste-tracking tools such as Winnow in hotel and on-board kitchens, and Carnival Corporation has installed several hundred food-waste biodigesters fleet-wide, contributing to a reported 31 per cent reduction in food-waste intensity since 2019 (WTTC and Harvard, *Circular Economy: Learning Insights*). The World Travel and Tourism Council's Hotel Sustainability

Basics initiative and the World Sustainable Hospitality Alliance's hotel waste measurement methodology extend a similar logic across the wider sector by giving operators of every size a common baseline against which to report (WTTC, *Hotel Sustainability Basics*; World Sustainable Hospitality Alliance, *Hotel Waste Measurement Methodology*). These responses show that the prevention and diversion measures the Roadmap will need to scale are not speculative, but already operating, unevenly, across parts of the industry.

F4G ran a parallel Private Sector Survey to capture how tourism-linked businesses and sector bodies are already engaging with food-system sustainability. Table 2 lists the 59 organisations that completed the survey in full, alongside the scale of the portfolio each respondent reported on, its primary role in the food system, and its country of operation or headquarters.

Table 2. Organisations completing the F4G Private Sector Survey in full. Portfolio scope reflects the reach the respondent indicated they were answering on behalf of; country reflects the respondent's country of operation or headquarters, or is marked multi-country/global where the respondent indicated that scope (F4G Private Sector Survey, September 2026).

Company / organisation	Portfolio scope	Primary role in the food system	Country
"Chinazes"	Single entity	Food and beverage service provider	Ukraine
Aardvark Bioreserve	Single entity	Accommodation and hospitality provider	South Africa
Accor	Global	Accommodation and hospitality provider	France
Anigami, Miceli Social	Sub-national	Sector coordination / membership body	Spain (Catalonia)
ASSET Basilicata	Single entity	Sector coordination / membership body	Italy
Bartur Foods	Single entity	Upstream food producer/supplier/distributor	United States
Bergplaas Nature Reserve	Single entity	Accommodation and hospitality provider	South Africa
Bharat Travel Service Private Limited	Single entity	Accommodation and hospitality provider	India
Bristol Cathedral	Single entity	Food and beverage service provider	United Kingdom
Caribbean Tourism Organization	Multi-country	Sector coordination / membership body	Multi-country (Caribbean, 25 members)
Cathay Pacific Airways	Global	Transport operator with catering	Hong Kong
Central African Wilderness Safaris	National	Accommodation and hospitality provider	Malawi
CEOE	National	Sector coordination / membership body	Spain
Chumbe Island Coral Park (CHICOP) Ltd	Single entity	Accommodation and hospitality provider	Tanzania
Club Med	Multi-country	Accommodation and hospitality provider	France
Culinary Tourism Alliance	National	Sector coordination / membership body	Canada
Danish Palte Pvt Ltd	Global	Sector coordination /	India

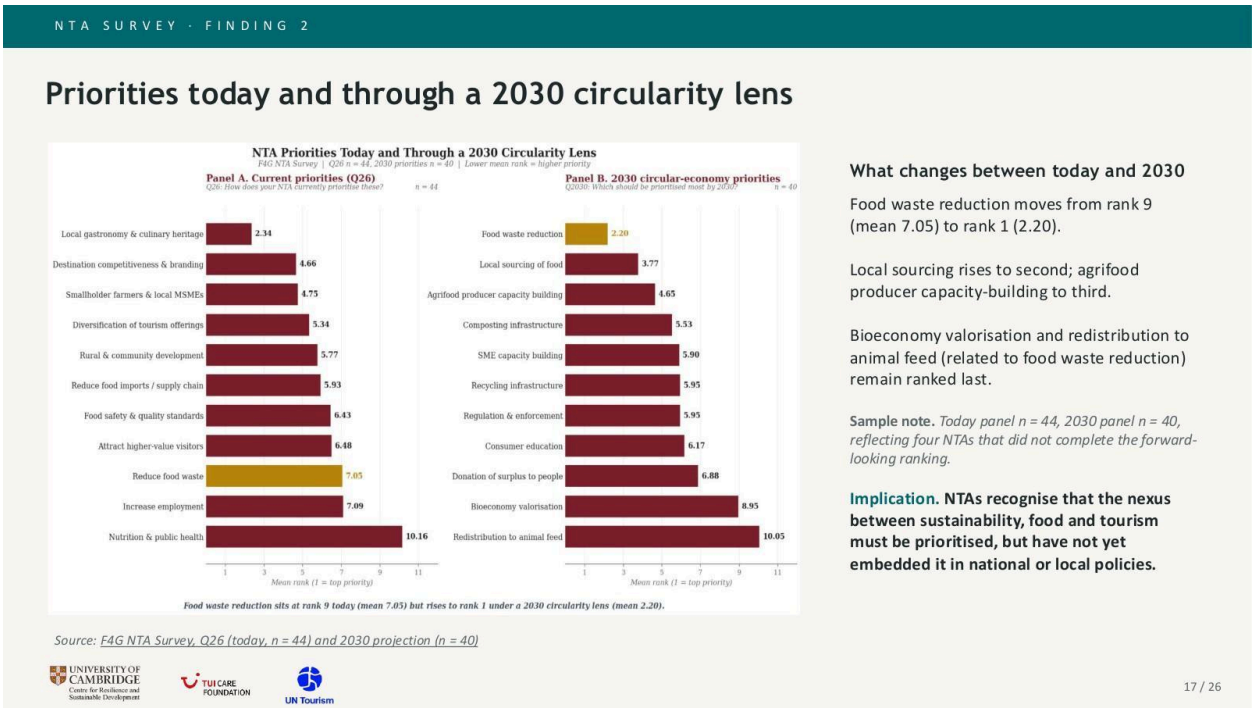
Company / organisation	Portfolio scope	Primary role in the food system	Country
		membership body	
Essentia Advisory	Single entity	Sector coordination / membership body	Maldives
Fundación Visit Valencia	Single entity	Sector coordination / membership body	Spain
Haltia Lake Lodge	Single entity	Accommodation and hospitality provider	Finland
Heikki Penttilä / Penttilän tila	Single entity	Upstream food producer/supplier/distributor	Finland
Holiday Club Resort	National	Accommodation and hospitality provider	Finland
Hotel Jardín Tecina	Single entity	Accommodation and hospitality provider	Spain
Jaramogi University	Single entity	Contract catering / food-service provider	Kenya
La Costa Verde LLC dba Andina	Single entity	Food and beverage service provider	United States
Langham Hospitality Group	Global	Accommodation and hospitality provider	Hong Kong
Matka-Launokorpi Oy/Turun Saaristomatkat Oy	Multi-country	Digital platform / intermediary	Multi-country (Scandinavia/Baltic states/Europe)
Monchasha Rural Tourism	Single entity	Accommodation and hospitality provider	India
Natural Prívate Reserve Ram Tzul	Single entity	Accommodation and hospitality provider	Guatemala
Nikoi Island	Sub-national	Accommodation and hospitality provider	Indonesia
Ninety-Six Hotel Collection	National	Accommodation and hospitality provider	Mauritius
Olio Exchange Limited	National	Charity / food-surplus redistribution platform	United Kingdom
Organic food supplies	National	Upstream food producer/supplier/distributor	Not specified
Oromia Tourism Commission	Single entity	Accommodation and hospitality provider	Ethiopia
Phakalane Estates Pty Ltd	Single entity	Accommodation and hospitality provider	Botswana
Pikidi Gardens Ecolodge	Single entity	Accommodation and hospitality provider	Kenya
Pipit Restaurant	Single entity	Food and beverage service provider	Australia
PONANT	Global	Transport operator with catering	France
Radisson Hotel Group	Global	Accommodation and hospitality provider	Belgium / United States (dual HQ)
RIGI BAHNEN AG	Sub-national	Food and beverage	Switzerland

Company / organisation	Portfolio scope	Primary role in the food system	Country
		service provider	
Secret Paradise Maldives	Single entity	Sector coordination / membership body	Maldives
Servicio Nacional de Aprendizaje SENA	National	Sector coordination / membership body	Colombia
Singita Grumeti Reserves	Sub-national	Accommodation and hospitality provider	Tanzania
Singular Places	Global	Digital platform / intermediary	Global (APAC/LATAM/Europe/Africa)
Six Senses Laamu	Single entity	Accommodation and hospitality provider	Maldives
The Lazizi Welfare Foundation	Sub-national	Accommodation and hospitality provider	Kenya
Thompson Okanagan Tourism Association	Sub-national	Sector coordination / membership body	Canada
Tiger Mountain (Pvt) Ltd.	Single entity	Accommodation and hospitality provider	Nepal
TMK Creamery	Single entity	Upstream food producer/supplier/distributor	United States
Travel Oregon	Sub-national	Sector coordination / membership body	United States
TUI Group	Global	Accommodation and hospitality provider	Germany
USTOA	National	Sector coordination / membership body	United States
Vedettes de Paris	Single entity	Food and beverage service provider	France
Vegan Hospitality and Tourism Worldwide	Global	Sector coordination / membership body	Global (APAC/EMEA/LATAM/North America)
Whatley Manor	Single entity	Accommodation and hospitality provider	United Kingdom
Wise Steps Impact	National	Sector coordination / membership body	Indonesia
Íslandshótel hf. (Íslandshótel Group)	National	Accommodation and hospitality provider	Iceland
МУЗЕЙ ІСТОРІЯ	Single entity	Accommodation and hospitality provider	Ukraine

Known Opportunities

When NTAs are asked to look ahead to 2030 through a circularity lens, their stated priorities shift markedly from where they sit today. Current priorities are led by local gastronomy promotion, destination competitiveness and branding, and support to smallholder farmers and micro, small and medium enterprises; by 2030, respondents instead rank food waste reduction, local sourcing of food and agrifood producer capacity building as their leading concerns (Tourism Food for Good (F4G) NTA Survey 2026). This shift indicates a latent institutional appetite for exactly the kind of intervention the workshop is designed to catalyse: connecting food waste reduction with local sourcing and producer development, rather than treating them as separate agendas.

Figure 5. NTA priorities today and through a 2030 circularity lens. Comparison of current stated policy priorities with anticipated 2030 priorities under a circular-economy framing, showing the marked rise in the ranking of food waste reduction and local sourcing (F4G NTA Survey 2026).



The illustrative SIDS evidence discussed above points to where that connection could be made concrete. Hotel managers report interest in sourcing more locally; the constraint is a mismatch between what local producers can currently supply at scale and the quality, certification and consistency that resorts require, rather than a lack of demand (IFC and World Bank, 2024). This reframes the opportunity as one of supply-side capacity building and market linkage rather than demand creation, a distinction with implications for how similar import-dependent SIDS contexts might be supported under the Roadmap.

Bioeconomy pathways beyond the waste hierarchy. Global analysis of circular food systems suggests that redirecting organic residues into productive use, rather than treating them purely as a cost to minimise, carries a substantial economic opportunity. The Ellen MacArthur Foundation estimates a combined benefit of USD 2.7 trillion a year by 2050 from three interlinked shifts in how food systems operate: healthier, more diversified production, which could reduce diet-related health costs by an estimated USD 550 billion; the elimination of waste and better use of by-products, worth a further USD 700 billion; and returning organic material to productive use, with better management of food waste and by-products contributing to an estimated 4.3 billion tonnes of avoided CO2-equivalent emissions globally (Ellen MacArthur Foundation, Cities and a Circular Economy for Food). Tourism destinations, where food service is spatially concentrated and organic waste streams are correspondingly easier to aggregate than across a dispersed resident population, are well placed to pilot the same logic at destination scale: hotel and resort by-products, particularly used cooking oil and organic residues, already feed emerging biodigester and bio-refinery applications in a small number of pilot sites, turning a cost centre into a source of energy or tradable material. Training-led programmes such as the World Wildlife Fund and American Hotel and Lodging Association's Hotel Kitchen initiative, active in more than a dozen countries since 2017 and reporting more than 6,000 hospitality professionals trained in prevention, donation and diversion practice, illustrate that this transition can be advanced through capacity building rather than capital investment alone (WWF and AHLA, Hotel Kitchen: Five Years Fighting Food Waste).

Large operators investing directly in local agriculture and training. Several destination-level examples suggest that large hotel and resort groups can act as anchor investors in local food production, rather than solely as buyers of it. Sandals Resorts' Farmers Programme in Jamaica, running since 1996, grew local produce sales to the group from around USD 60,000 to USD 3.3 million within three years by combining guaranteed offtake agreements with technical support to smallholders, and the group now reports sourcing 56 per cent of produce locally group-wide, and 90 per cent in Jamaica specifically (Overseas Development Institute; Sandals Resorts, Corporate Responsibility). The group's foundation has since extended this model into dedicated training infrastructure, including a community composting and growing programme in the Turks and Caicos Islands and an agricultural training college for new food producers (Sandals Foundation). Comparable commitments are visible elsewhere in the sector: Marriott International's Serve 360 programme and Iberostar's Wave of Change initiative both report substituting imported produce with regional and seasonal sourcing, across Caribbean and Latin American and Mediterranean resorts respectively, reducing the spoilage associated with long-distance imports while extending participation in local economies (Marriott International, Serve 360; Iberostar, Wave of Change). These examples suggest that where large operators have both a commercial incentive, reduced spoilage and supply risk, and an accessible mechanism, offtake guarantees paired with technical assistance, local sourcing can move beyond a stated preference to a functioning supply relationship, directly addressing the capacity and standards gap identified above rather than assuming it will close unaided.

Opportunities at the intersection of economic, health and social outcomes. The clearest opportunities identified across the evidence base sit not within a single domain but at the intersection of several. Money spent with local suppliers has been shown to circulate 1.4 to 2.5 times more within a community than money spent on imports, a multiplier effect that gives local-sourcing programmes an economic rationale independent of any waste-reduction benefit (Sacks, 2002). Diet quality and health outcomes are also implicated: destinations that reduce reliance on imported, less diverse food supplies may simultaneously address the nutritional vulnerabilities documented in the SIDS literature discussed above, while the diversified, less input-intensive production associated with circular food systems underlies the health-cost savings estimated by the Ellen MacArthur Foundation.

A study of circular economy approaches to hotel food waste in Zanzibar found that combining prevention, donation and composting interventions delivered environmental, cost and community benefits simultaneously, including redirected surplus supporting local food security, in a Small Island Developing State tourism context closely comparable to those surveyed for F4G (Ally et al., 2024). Read together, this evidence suggests that the workshop should frame local sourcing and food-waste interventions not as environmental measures with a social by-product, but as investments justified on economic, health and social grounds simultaneously, a framing likely to broaden the coalition of destination-level actors willing to support them.

At the global level, the scale of tourism's food footprint, 80 billion meals a year, cuts both ways: it represents a large and largely unmanaged source of food loss and waste, but it also means that comparatively modest improvements in prevention, diversion and local sourcing, applied consistently across accommodation and cruise operators, could deliver food-system, economic and social benefits at meaningful scale (UN Tourism, Global Roadmap for Food Waste Reduction in the Tourism Sector, 2023).

Known Unknowns

Several evidentiary gaps should inform how the workshop frames its ambition rather than being read as reasons for delay.

Measurement and valuation. Only 8 of 45 NTAs currently collect tourism food waste data, so most national and global claims about the scale of the problem rely on estimation rather than direct measurement (Tourism Food for Good (F4G) NTA Survey 2026); the Roadmap will need to specify how baseline measurement is established and by whom. Relatedly, the precise monetary value of food and beverage leakage from import-dependent SIDS tourism sectors, distinct from the volume and percentage figures reported above, is not established in the primary sources reviewed for this note and would benefit from further verification before being used as a headline figure in destination-level communications.

Sequencing of barriers. It is not yet clear from the available survey data whether the barriers NTAs report (awareness, funding, technical capacity, coordination) are perceived as sequential, meaning that funding or capacity gaps persist even where awareness and mandate exist, or as substitutable, meaning that progress on any one dimension would materially unblock the others. The institutional inversion documented above, in which the destinations with the greatest exposure report the weakest formal integration of local producers, sharpens this question: it is not established whether closing the formal-integration gap in lower-income destinations would itself improve outcomes, or whether deeper infrastructure and technical-assistance gaps are the binding constraint that formal integration alone cannot resolve. This distinction matters directly for sequencing recommendations in the Roadmap.

Feasibility of local sourcing against concentrated market structure. The relationship between market power and food concentration in destinations such as Cabo Verde and other island countries. The reality of developing countries are no different from small island countries where food system within the tourism sector are driven by global price, foreign tourists and local political economy where companies may or may not be able to apply circular economy principles in their day-to-day operations. Therefore, it is hard to empirically test local sourcing of food; the workshop may wish to treat this as a specific design question rather than assuming that supply-side capacity building alone will shift procurement behaviour where a small number of buyers control the great majority of demand.

Scaling bioeconomy and training models without comparable capital. The bioeconomy and local-training examples discussed under Known Opportunities are drawn overwhelmingly from large, vertically integrated operators or foundation-funded programmes with access to capital, corporate sustainability budgets, or philanthropic resources that most independent hotels, and most tourism-dependent SIDS destinations, do not have. Whether biodigester, training and offtake-guarantee models can be adapted to smaller operators and public-sector-led destination programmes, rather than remaining dependent on a single resort group's or foundation's balance sheet, is not established in the evidence reviewed for this note and represents a significant open design question for the Roadmap.

Health, nutrition and equity effects of local sourcing at scale. The health-cost savings associated with circular, diversified food systems are estimated at a global level; their applicability to tourism-dependent SIDS destinations specifically, where import dependence is bound up with the triple burden of malnutrition, has not been quantified. Nor is it established whether large-scale local-sourcing programmes of the kind described above distribute benefits broadly among smallholders, or concentrate gains among the subset of producers already best placed to meet resort certification and volume requirements, a risk consistent with the exclusion dynamics documented in the wider procurement literature. Both questions bear directly on whether local sourcing should be framed, and measured, as an equity intervention or purely as a supply-chain efficiency.

Conclusion

The wider evidence base suggests that these gaps are structural rather than incidental: they follow from treating tourism food systems as complex, multi-actor systems in which readiness depends on how sub-systems are coupled, on cross-scale governance capacity, and on the specific structural conditions facing import-dependent economies and concentrated procurement chains, rather than from any single missing policy instrument.

At the same time, the evidence points toward grounds for measured optimism. NTAs' stated priorities are already shifting toward food waste reduction and local sourcing when respondents are asked to look ahead to 2030; large operators are already demonstrating that bioeconomy pathways, local agricultural investment and training can be commercially and operationally viable at scale; and the demonstrated economic, health and social returns on these interventions suggest that well-designed action need not rely solely on regulatory pressure to gain traction (Tourism Food for Good (F4G) NTA Survey 2026; UN Tourism, 2023).

This has a direct implication for how the workshop should approach its task: the aim is not to identify one universal intervention but to build shared, adaptive capacity, definitional, measurement, coordination and procurement capacity in particular, that can be calibrated to markedly different national and destination contexts.

This Challenge Note, and the Cambridge Impact Roadmapping methodology through which it has been prepared, is intended to give workshop participants a shared, evidence-grounded starting point from which to test this diagnosis, correct it where participants' direct experience suggests otherwise, and begin translating it into the concrete commitments and next steps that will underpin the 2040 Impact Roadmap for Sustainable Food Systems in Tourism.

Agenda

The workshop takes place on Thursday, 10 September 2026, at the Institute for Manufacturing, University of Cambridge, with registration and coffee from 08:30 and the co-creation programme running from 09:00 to 17:30, followed by dinner from 18:30 at Gonville & Caius College. The confirmed running order, including four confirmed Lightning Talk speakers, is set out below.

Time	Session
08:30–09:00	**Registration and Welcome Coffee**
09:00–09:10	**Welcome, Introductions and Workshop Objectives**
09:10–09:30	**Lightning Talks** His Excellency Paul A. Gomez, High Commissioner of the Commonwealth of The Bahamas to the Court of St James's Professor Steve Evans, University of Cambridge – “Bio-Economy Opportunities for Circular Food Systems” Professor Rob Phaal, University of Cambridge – “The Cambridge Impact Roadmapping Methodology: From Evidence to Action” Zoritsa Urosevic, former Executive Director, UN Tourism, and Co-Founder of Tourism Food for Good
09:30–09:50	**Introduction to CRSD and Project Overview**
09:50–11:05	**Co-Creation Session 1: Asset-based Unintended Consequences Mapping**
11:05–11:20	**Morning Tea and Coffee Break**
11:20–12:35	**Co-Creation Session 2: Impact-focused Value Exploration**
12:35–13:35	**Lunch**
13:35–14:50	**Co-Creation Session 3: Priority Impacts Detection for Scaling**
14:50–15:05	**Afternoon Tea and Coffee Break**
15:05–16:20	**Co-Creation Session 4: Priority Pathways to Impact by 2040**
16:20–17:20	**NABC Session: Needs, Approach, Benefits and Competition** Speakers to be announced
17:20–17:	**Reflections, Commitments and Closing Remarks**

Time	Session
30	
18:30–21:00	**Dinner** Gonville & Caius College, Trinity Street, Cambridge, CB2 1TA

Appendices

Key Definitions & Concepts

Complex Adaptive Systems (CAS): The CAS framework emphasises that outcomes arise from the interaction of numerous heterogeneous actors, that relationships are nonlinear, and that history plays a crucial role in shaping future options. Unlike mechanical systems, CAS cannot be reduced to simple input–output equations. They are adaptive: actors respond to changing conditions, and their collective behaviour feeds back into the system, altering its trajectory. This framing is not abstract. FAO (2022) explicitly characterises food systems as CAS, stressing their interconnected ecological, economic, and social components. UNEP (2021) similarly frames food loss and waste as a systemic issue that requires cross-scale monitoring and feedback. The Ellen MacArthur Foundation (2021) applies CAS thinking in its circular economy approach, treating food systems as networks of material and biological flows that must be redesigned holistically. Academic literature provides the foundation: Meadows (2003; 2008) shows that the essence of CAS behaviour lies in stocks, flows, and feedback loops, while Kuhmonen et al. (2024) and Northcott et al. (2023) demonstrate how paradigms, attractors, and structures anchor food system trajectories over time.

Stocks and flows. A stock is any quantity that accumulates over time, while flows are the processes that increase or deplete it (Meadows, 2008). In food systems, stocks include inventories of edible food, packaging, nutrients, cold-storage capacity, and financial reserves. Flows are production, processing, logistics, retail, consumption, redistribution, or disposal. System behaviour emerges not from stocks or flows in isolation, but from their interaction. If flows into a stock outpace outflows, surpluses build; if outflows exceed inflows, shortages or losses occur. A practical example is cold storage: stock capacity in warehouses or hotels is finite, and when inflows from imports or procurement exceed this, spoilage results. Northcott et al. (2023) extend this logic to diet, showing how flows of ultra-processed foods have displaced minimally processed alternatives, leading to a decline in dietary diversity. FAO (2022) applies the same analysis to SIDS, where delayed shipments and fragile infrastructure can simultaneously reduce consumer stocks and overload cold-chain capacity, producing systemic losses.

Feedback loops. Feedback loops describe the recursive structures that shape system behaviour (Meadows, 2001; 2008). Positive (reinforcing) feedback loops amplify patterns: in food systems, hotel over-ordering to buffer uncertainty leads to chronic buffet surpluses, which normalise disposal and reinforce procurement assumptions of over-supply. Negative (balancing) feedback loops counteract these patterns by adjusting flows back toward stability. Measurement is critical to these loops: UNEP (2021) stresses that halving food waste under SDG 12.3 requires reliable measurement systems to close the **measurement → action loop**. WHO (2022) identifies a **safety → prevention loop**, where consistent application of food safety protocols upstream reduces downstream waste. Nayek and Waterson (2019) add that food safety failures often arise because organisations rely on localised, node-specific controls; by modelling food systems as CAS, they show that adequate safety depends on the design of negative feedback loops across multiple levels of production, logistics, and service.

Path dependencies. Path dependency explains why historical decisions shape a system's present and future states. Once infrastructure, contracts, or governance patterns are in place, they create "lock-in" effects that are difficult to reverse. Meadows (2008) describes these as "system traps," in which shallow interventions, such as tweaking parameters like volumes or prices, fail to alter the deeper rules or goals that structure outcomes. Kuhmonen et al. (2024) analyse food systems as being stabilised within **regime-level attractors**: ethical norms, economic paradigms, health concerns, or global market logics that anchor trajectories until major disruptions occur. Northcott et al. (2023) show this in the dominance of ultra-processed foods: subsidies, consumer demand, and supply chain investments reinforce one another, displacing alternatives. FAO (2022) highlights similar dynamics in global supply: concentration in input suppliers, processors, and retail channels means food is channelled through a few global nodes, amplifying vulnerability to shocks and constraining local alternatives.

Why CAS is the appropriate model. Treating food systems as CAS clarifies why interventions so often generate trade-offs or unintended consequences. Expanding cold chains reduces spoilage but raises emissions and locks in energy-intensive infrastructure. Tightening procurement standards improves liability management but increases packaging waste and excludes SMEs. Redistribution captures edible surplus, but without upstream adjustments, it may entrench overproduction. CAS theory explains these outcomes by emphasising that behaviour emerges from interdependent stocks, flows, feedback loops, and historical path dependencies rather than isolated decision points. This insight is well established in academic systems theory (Meadows, 2001, 2003, 2008; Nayek & Waterson, 2019; Northcott et al., 2023; Kuhmonen et al., 2024) and is increasingly recognised by international organisations (FAO, 2022; UNEP, 2021; Ellen MacArthur Foundation, 2021).

Ecological underpinnings. CAS theory also stresses that resilience and diversity are system properties. Meadows (2001, *Dancing with Systems*) highlights how resilience derives from diversity, modularity, and feedbacks that can absorb shocks without collapse. FAO (2022) similarly shows that ecological degradation, such as soil depletion, biodiversity loss, and water scarcity, reduces resilience and increases vulnerability to shocks. UNEP (2021) and EMF (2021) extend this to circular-economy practice, where closing biological loops (e.g., composting, anaerobic digestion) reduces dependence on external inputs and lowers systemic emissions.

How Standards and Reporting Shape Behaviour. Standards and reporting frameworks function as the rule-and-signal layer in food systems. They set expectations for hygiene, traceability, and sustainability, which are then filtered down through contracts, audits, and disclosures into the daily routines of kitchens, airlines, cruise ships, and hotels. In tourism, where food systems are particularly globalised and visible, these frameworks have a decisive role in shaping behaviour. They not only determine which suppliers can participate in the chain, but also how food is handled, what constitutes acceptable waste, and which recovery or circular options are feasible.

Codex, HACCP, and ISO. At the core of global food governance stands the Codex Alimentarius, particularly its *General Principles of Food Hygiene* (CXC 1-1969, Rev. 2020). This text underpins national law and buyer requirements across the world. Its annex on Hazard Analysis and Critical Control Points (HACCP) provides the architecture for managing hazards, identifying critical points, and maintaining safety. As Lawrence et al. (2024) observe, the Codex has a dual mandate: health protection and fair practices in the food trade. That said, "complying with Codex is the best way a country can avoid a challenge to its food laws and standards under the World Trade Organization dispute resolution mechanism." In practice, the trade mandate often overshadows nutrition or sustainability.

HACCP and ISO 22000 translate these expectations into daily practice. They are effective when competence, monitoring, and communication are strong, but risk becoming a paperwork exercise in weak contexts (Sikora & Nowicki, 2007). Evidence shows their potential: Baikadamova et al. (2024) document how a HACCP plan reduced heavy metal and radionuclide contamination in meat products in Kazakhstan, demonstrating concrete gains where systems are correctly applied. The key behavioural signal here is **compliance culture**, in which tourism operators require suppliers to provide certification and audit records, and internal kitchens must demonstrate HACCP adherence to pass inspections and brand audits.

Surveillance, traceability, and global public health. Beyond plant-level hygiene, food systems are governed by surveillance and traceability requirements. The World Health Organization's *One Health* framework stresses integrated monitoring of human, animal, and environmental risks (WHO, 2022). For tourism operators, this translates into supplier contracts that require traceability, recall readiness, and a documented chain of custody. Where national surveillance is weak, global brands may impose stricter requirements themselves, outsourcing risk management through audits. The behavioural effect is clear: suppliers must demonstrate traceability to remain in the market. The gap lies in the resources for effective surveillance, resulting in uneven protection and missed opportunities for prevention.

Reporting frameworks. Disclosure frameworks shape corporate priorities by making specific metrics visible to regulators, investors, and consumers. The Global Reporting Initiative (GRI, 2021), the Sustainability Accounting Standards Board (SASB, 2021), and the former Task Force on Climate-related Financial Disclosures (TCFD, 2017), now consolidated under the International Sustainability Standards Board (ISSB, 2023), are widely adopted. These frameworks elevate indicators such as food waste generation, recycling, and packaging. However, as Hadi et al. (2023) and Lebambo et al. (2016) note, the compliance burden often sidelines SMEs, privileging large, well-capitalised firms. This shapes behaviour in two ways: (1) large operators align disclosure with procurement and marketing strategies, and (2) smaller suppliers may be excluded altogether if they cannot meet reporting requirements.

Tourism operators have been early adopters of disclosure frameworks as a means of signalling responsibility. Marriott (2024) and Lufthansa Group (2023) report against GRI and SASB standards, highlighting food waste reductions, redistribution partnerships, and packaging initiatives. Here, reporting shapes behaviour by **making food waste visible as a corporate risk and opportunity**, forcing operators to measure, track, and act where they might not have previously. The weakness is superficiality: firms optimise what is measured, but deeper systemic change often remains out of scope.

Sector-specific rules: airlines, cruise, and hotels. In the tourism sector, regulations and standards strongly constrain behaviour. Airlines are bound by International Catering Waste (ICW) rules, particularly strict in the EU, where most international cabin waste is classified as Category 1 animal by-product. This blocks redistribution and recycling, forcing the destruction of even untouched food. IATA argues that "lack of harmonisation among national regulations results in costly inefficiencies and unnecessary disposal" and calls for risk-based reforms (IATA, 2023). In practice, airlines design menus, loading strategies, and waste segregation in line with these rules.

Cruise operators face the International Maritime Organization's MARPOL Annex V, which requires strict segregation, treatment, and disposal of food waste at sea. This drives investments in on-board treatment technologies and shapes contracts with ports for compliant disposal. Hotels, by contrast, are guided by national laws and buyer standards. Still, industry platforms like the World Sustainable Hospitality Alliance (WSHA) have promoted common reporting protocols on waste and energy, encouraging consistency and peer benchmarking. Case studies show that standardised measurement and staff training have led to measurable waste reductions in large chains.

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