

Action Track 2: Shift to sustainable and healthy consumption patterns

Synthesis Report of Game Changing Solutions
– second wave of ideas



Submitted to the UN Food Systems Summit Secretariat, 21 May 2021

Disclaimer: This paper presents an initial, second set (wave) of ideas submitted to the UNFSS Secretariat by Action Track 2. These ideas are not fully formed, they will be developed further and contextualized in the coming weeks and months, through active engagement with the relevant stakeholders. Ideas may be merged, moved to other Action Tracks, re-written, and so on. The ideas as presented in this document are emerging from a collaborative process in Action Track 2, a broad and diverse group with varied perspectives and opinions. That an idea is included here does not mean that it is endorsed by all members of Action Track 2 or their institutions.

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Abbreviations and Acronyms

Action Track – AT
Anti-microbial resistance – AMR
Asia-Pacific Association of Agricultural Research Institutions – APAARI
Consumer Goods Forum – CGF
Consultative Group on International Agricultural Research – CGIAR
Consumer Information Programme – CI-SCP
European Union – EU
European Food Safety Authority – EFSA
Food, Agriculture and Natural Resources Policy Analysis Network – FANRPAN
Food and Agriculture Organization of the United Nations – FAO
Food and Drug Administration – FDA
Food-based dietary guidelines – FBDGs
Food loss and waste – FLW
Food Reform for Sustainability and Health – FReSH
Front-of-pack labelling – FOPL
Food and Agriculture Organization – FAO
Forum for Agricultural Research in Africa - FARA
Global Alliance for Improved Nutrition – GAIN
Global Child Nutrition Foundation – GCNF
Green House Gases – GHGs
Gross Domestic Product – GDP
High-income countries – HIC
International Platform for Food System Science – IPFSS
International Crops Research Institute for the Semi-Arid Tropics – ICRISAT
Leadership Team – LT
Life Cycle Assessment – LCA
Low- or middle-income countries – LMIC
Non-Communicable Diseases – NCDs
One Planet Business for Biodiversity – OP2B
Pan American Health Organization – PAHO
Responsible Meat Initiative – ReMi
Science-policy interface – SPI
Short Food Supply Chain – SFSC
Sustainable Development Goal – SDG
UN Environment Programme – UNEP
UN Food System Summit – UNFSS
West and Central African Council for Agricultural Research and Development - CORAF
World Action on Salt, Sugar, and Health – WASSH
World Business Council for Sustainable Development – WBCSD
World Food Programme – WFP
World Health Organization – WHO
World Organisation for Animal Health – OIE
World Wildlife Fund – WWF
World Resources Institute – WRI

Introduction

Action Track 2 goals

This report presents the second wave of propositions to achieve the goals of Action Track 2: Shift to sustainable and healthy consumption patterns.

Guided by the best available scientific evidence, best practice and real-world examples, Action Track 2 aims to generate new and support existing game-changing solutions that can catalyze shifts in consumption through changes in food policy, food environments, private sector actions and offerings and consumer behavior. Policy responses to previous food crises have consistently focused on improving efficiency, but novel solutions — that may, yet be unknown — are now needed. A transition towards diets which are healthier, safer and more nature-positive, from food systems which are economically equitable and socially just needs to retain desirability while celebrating and sharing cultural identity. Key outcomes to which the proposed solutions should contribute include:

- A dramatic increase in the diversity, availability, accessibility, and affordability of safe foods that contribute to healthy diets from sustainable production systems, especially whole grains, legumes and nuts, and fresh vegetables and fruits. Particularly for vulnerable and poor population groups, sufficient quantities of healthy protein and micronutrient sources are needed, including sustainably produced dairy (for populations which can digest lactose), eggs, blue foods (marine and freshwater fish, shellfish and algae), meat or alternative protein or micronutrient-rich sources;
- A major shift in demand for and/or consumption of safe foods that contribute to healthy diets from sustainable production systems. including more than doubling the consumption of fruits, vegetables, whole grains, legumes and nuts;
- At the global level, and particularly with respect to more affluent populations, a reduction of excessive consumption of animal-sourced foods, especially red meat, and an increase in consumption of plant-rich diets and a switch to animal products from sustainable practices;
- A reduction in consumption of sugar-sweetened beverages and foods high in unhealthy fats, free sugars, and salt/sodium;
- Food safety ensured from production to consumption, food safety systems in LMICs are strengthened to improve traceability and the burden of food borne disease associated with biological or chemical hazards is reduced significantly;
- Halving per capita food waste at household, food service and retail levels by 2030 (SDG target 12.3) and transitioning to a circular food economy where recycling and repurposing food waste becomes the norm;
- Strengthened connections between consumers and producers of food, including by fostering development of more robust value and gender-responsive chains (local where feasible), creating solid alliances between farmers and civil society and harnessing the potential of food markets (including wet markets) to offer affordable healthy, safe, and territorial food options;
- Reduced household inequalities in allocation and consumption of healthy diets leading to better nutrition outcomes for women and girls;

- Celebration of indigenous and traditional food cultures, which could include public campaigns embracing native, diverse species and breeds where appropriate;
- Improved and reoriented social, economic, and environmental objectives of global value chains so that equitable international trade facilitates access to foods that contribute to healthy diets from sustainable production systems; and
- Widespread awareness of both the urgency and multiple co-benefits of food system transformation and increased political commitment at all levels to drive the transition towards healthy and sustainable consumption.

Achieving these outcomes would unleash enormous social, economic and environmental progress, and help achieve multiple SDGs, the Paris Agreement, the post 2020 biodiversity goals and other internationally-agreed commitments.

- Vision: By the time of the UN Food Systems Summit in autumn 2021 significant momentum is underway to shift consumption, with:
- An exciting menu of innovative game-changing solutions for shifting food consumption to healthy and sustainable patterns on the table.
- A critical mass of government, private sector, public sector, and other actors ready to announce significant commitments to take action in line with such solutions.
- A global movement, inspired by the passion and leadership of young people, making changes in their daily food choices and demanding action by governments and business to enable and accelerate healthy and sustainable food consumption, by making it affordable, accessible and desirable.

Action Track 2 structure

The work of Action Track 2 is now divided into two Action Areas (AAs):

AA 2.1 Enabling, inspiring and motivating people to enjoy healthy and sustainable options

This action area will work on policies, food environments and marketing to ensure people are supported to eat healthy and sustainably in a way that is just and fair for all. It will focus on the food offerings encountered in and around schools, shops and markets, restaurants, workplaces, neighborhoods, and virtual platforms. We need to transform our food environments in order to enable people to make informed decisions that ensure healthy, sustainable and culturally appropriate food consumption, while restricting inappropriate marketing of unhealthy products. We need to scale up effective policies and propose new evidence-based policy measures including regulation that supports good business and marketing practices. We need to bring back and revive traditional and local knowledge and bring in new ideas and innovations around the quality, taste, convenience, ownership and multi-sensory experience of healthy diets from sustainable production systems. We need better solutions that enhance consumer knowledge, motivation and capability.

AA 2.2 Slashing food loss and waste and transitioning to circular economy

This action area will develop initiatives that will engage and incentivize countries, businesses and citizens to play their part and collaborate to drive out/down food loss and waste. This will include adoption of the target, measure, act approach throughout the entire supply chain, citizen behavior change initiatives and increasing the focus on making the food system more circular e.g. through upcycling and development of alternative uses that make the best use of any inedible parts or wasted food.

Process preceding the proposed solutions

The second wave of solution propositions has been developed from 167 submissions received from a range of stakeholders via online survey, brainstorming in the AT2 Leadership Team, and through stakeholder outreach.

The types of stakeholders who submitted ideas for Wave 2, and the mechanism through which these ideas were submitted, are shown in Figure 1 (a) and (b) below. Member States, Civil Society, private sector, and research and academia are among the main solution submitters, with a balanced distribution between them. Youth and UN actors also submitted solutions. No solutions were received from producers. Most of the 167 ideas were sourced through the online survey, about one fourth were sourced from or via the AT2 Leadership Team, and a few ideas were sourced through stakeholder outreach.

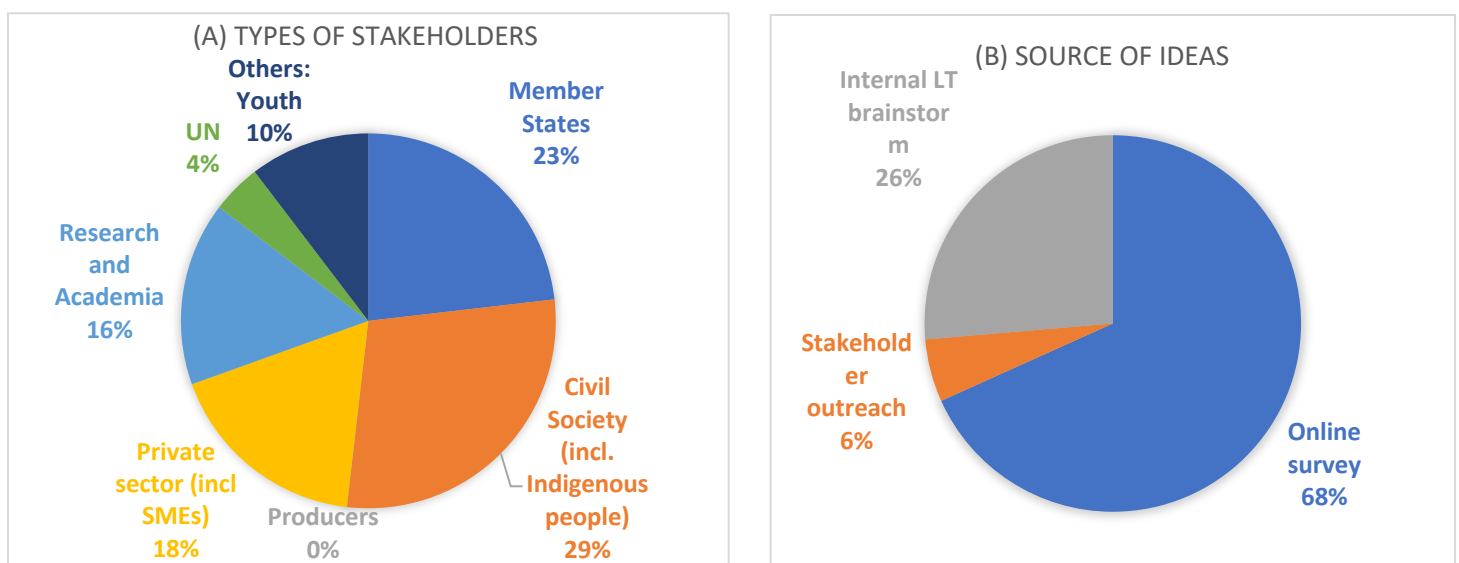


Figure 1: (a) Distribution of stakeholders who submitted ideas for wave 2. (b) Source of ideas for wave 2.

All the solutions received were analyzed and screened based on the three agreed upon key criteria for game changing, systemic solutions:

- **Impact:** provides long-term economic, environmental and societal value at scale, addresses the main and most urgent challenges facing food systems production and has synergies (and no/low trade-offs) with other actions and sustainable food systems already in place.

- **Actionability:** are designed to target a specific area of improvement, specifies the measurable outcomes, accounts for the given situation and resources to make sure the solutions are feasible to implement, and declares accountability for achieving the outcomes.
- **Sustainability:** has the ability to keep delivering to Sustainable Development Goals by 2030 and beyond.

This document reflects the 'second wave' of solution propositions emerging from the work of Action Track 2 as of 21 May 2021.

Summary of Wave 2 ideas

	Problem to be resolved	Solution proposed
1.1	Need to make nutritious foods from sustainable food systems the preferred choice for consumers.	To enable shifts in consumption of nutritious diets from sustainable production systems by shaping society-wide consumer preferences: Identifying relevant consumer food preference issues, building evidence and learning from effective social- or culture-change strategies to drive social norms that lead to shift in preferences and choice, and mobilizing cross-sector alliances in countries to deploy these strategies to shift preferences in the right direction.
1.2	Meat consumption is frequently associated with masculinity , which contributes – in some contexts – to production and consumption levels of meat which are considered to be damaging to health and unsustainable for the planet.	A UN-supported, concerted campaign to dissociate meat consumption and masculinity . This can attack the relationship between meat eating and stereotypically male traits like strength, decision autonomy, self-determination; and positively relate consumption of plant foods with these traits. The campaign can work through mass media, social media, and influencers like celebrity chefs.
1.3	Reliable, relevant, clear, transparent, and accessible information on nutrition and sustainability is rarely available to consumers, making it hard for them to change their shopping habits to be healthier and more sustainable.	Rethink how businesses engage with and inform consumers, and the role of regulatory standards for marketing, to build a marketplace where stakeholder more evenly share the responsibility for healthy and sustainable consumption, and consumers are empowered to make better choices. Four key levers: expand and enhance government regulation of marketing; generate new marketing tools and incentives ; standardize and streamline product labelling; engage and empower consumers by for example guaranteeing ownership of their data and creating mechanisms for the enforcement of consumer rights.
1.4	Ineffective public sector marketing in the nutrition sector. Need to motivate and empower consumers so they seek information in the food environment and respond to it by making better choices.	Treat diets and foods as a connected two-tier structure, because a good diet can be put together in many ways. Use emotions to motivate consumers (knowledge is unlikely to be enough). Work in parallel with ideas that create a 'level playing field' for promotion of healthy diets from sustainable production systems by restricting marketing that promotes unhealthy diets. Taxes on advertising that promotes unhealthy diets.
2.1	The gap between producers and consumers , which needs to be bridged to improve consumer information, awareness, and education; ensure farmers' fair income and promote local agriculture; reduce	Campagna Amica is an effective and instrumental tool in bridging the gap between producers and consumers. In Italy 15 million citizens make food purchases in Campagna Amica's markets. It shortens the supply chain,

	transportation, waste, and packaging; and more.	promotes sustainable production systems and seasonal products, has a key component of education to consumers, reduces the need for packaging, and gives farmers opportunity for diversified incomes. Campagna Amica operates under strict rules and controls regarding behavior, hygiene, transparency, labels, and controls, which inspires trust.
2.2	Food supply chains have become increasingly complex, with more processing and transportation stages. This reduces consumer prices and maximizes consumer convenience but does not maximize food healthiness or sustainability.	A complementary route is offered by various manifestations of short food supply chains , which in turn also allow smaller farmers and producers to survive and continue to provide a more sustainable alternative to mass production to the autonomous consumer. Short supply chains – with direct farmer to consumer sales as the extreme – offer many benefits in terms of sustainability and health but should be made more convenient (larger assortments, less effortful acquisition for the consumer). Initiatives to make supply chains shorter are developing spontaneously in the marketplace. They initially appeal to niche audiences (e.g., direct trade for coffee, farmers markets in cities), but need support to become more convenient and appeal to larger audiences.
3.1	Blue food production systems are increasingly undermined by the homogenization and intensification of commercialized food commodities that drive overexploitation and illegal practices; increase energy and fuel use demand; and undermine local food and nutrition security.	A food security kitemark (developed for blue foods but also applicable to other food-based systems), is a voluntary commitment designed to support government, businesses, and other non-state actors to enact on the principle of ‘no harm’. This involves requirements (to companies involved in transporting nutritious food): Local food security impact assessment, implement corrective measures (bolster local diets, support local markets, promote local and indigenous dishes), and a blue food ‘trase’ system for use in policy development and negotiation (to identify and monitor ‘keystone commodities’ that have been found to exacerbate overexploitation and food insecurity).
4.1	Food systems transformation will require clear, realistic, and affordable transition steps. Financing the necessary steps is likely to present substantial challenges, especially in LMICs (in the wake of COVID-19 in particular) and in cases where the actors who need to resource the necessary changes may be different from those who will benefit from the transformation over time.	The World Bank’s new Food Systems 2030 Trust Fund for food systems transition provides advice and analytical products to underpin policy options, funds to pilot innovative approaches, and information to build support for change in different country contexts. It helps steer and leverage the impacts of World Bank lending, engages with private sector and public-private partnerships, and complements other resources that support sustainable land use and food security by taking a more integrated, multi-disciplinary and catalytic

		<p>approach to food systems transformation. Activities funded by Food Systems 2030 will have a demonstrable positive impact on health, environment, and prosperity, with a strong narrative and results reporting that will capture these impacts.</p>
5.1	<p>Solving malnutrition requires a robust understanding of the role of the microbiome in nutrient absorption and modulating malnourishment.</p>	<p>Greater understanding of the role of nutrients on metabolic processes by way of gut microbiota will pave the way for functional foods (food as medicine) to help combat malnutrition. This can be done by centralizing research and knowledge about the issue and calling for an increased role of microbiome insight in food safety and regulation; defining a set of guidelines and strategies for evaluating foods' impact on the microbiome and targeting micronutrients for specific outcomes; and mobilizing cross-sector alliances to deploy these strategies to shift production and consumption towards healthy and sustainable options for the global population.</p>
5.2	<p>Policy interventions are needed to curb the rising health burden and premature mortality caused by increasing consumption of processed and ultra-processed foods – resulting in diets high in sodium, trans fat, and sugar-sweetened beverages, and low in fresh or minimally processed foods.</p>	<p>Government-led reformulation of packaged food allows governments to set targets for key categories of packaged food to limit the amount of nutrients, such as sodium, sugars, and trans-fat, permitted in packaged food products. This strategy changes the packaged food environment without requiring consumer action or even knowledge, thus making healthier choices the default. While mandatory targets are preferred, many countries have set voluntary targets as well.</p>
5.3	<p>Limited awareness of the different levels of food processing (from minimal to ultra) and their impacts on nutritional value and dietary health.</p>	<p>International and national authorities should review their dietary guidelines to assure that these emphasize preference for fresh or minimally processed foods and the avoidance of ultra-processed foods. National policy should be designed accordingly to promote a rich variety of fresh or minimally processed foods. The food manufacturing industry should develop or improve alternatives to ultra-processing of food to prolong shelf life and simplify culinary preparation.</p>
6.1	<p>Few countries engage consumers and consumer rights into the food system in a coherent manner. Policies, practices, and institutions which empower consumers and consumer rights are siloed, under-resourced, and inadequately enforced, and consumer engagement as a force for innovation is under-utilized. As a result, consumers are distrustful of change, disengaged from behavioral</p>	<p>Strengthen the voice of consumers in the development of healthy and sustainable food systems and reinforce the levers of consumer protection and empowerment as a means for food systems transformation. This includes: Strengthening the role of consumers and consumer rights in policy-making and standard-setting; creating institutions and mechanisms which effectively identify and address consumer harms; and incubating and</p>

	changes needed for net zero, and under-served by the marketplace.	scaling-up sources of innovation from consumer empowerment and engagement (e.g., data stewardship, product design, and supply chain solutions). Siloed problem-solving needs to be replaced by a more holistic approach, for example by bringing consumers and farmers together in dialogue.
7.1	FAO projects a 52% increase in the global demand for meat by 2050 relative to 2012, but there are not enough resources on our planet to meet this demand. Accelerating the diversification of proteins that are appealing, accessible, and affordable will be key to feeding 10 billion people within planetary boundaries by 2050.	In order to enable dietary shifts, a large toolkit is required. Options include but are not limited to: Plant-based and algae-based protein that mimic the taste and texture of their animal-based analogues and do not require new skills or cooking behavior; fermentation-derived proteins created via bacteria and fungi used as 'hosts' to produce different types of proteins from various substrates such as CO2 and sugar; and cultivated meat, which is real animal meat cultivated directly from animal cells. The proposed game changer aims to accelerate the scale up of alternative proteins by building evidence on science-based targets, pathways, key challenges, and opportunities ; developing strategies to scale up alternative protein production and consumption; and mobilizing cross-sector alliances to deploy these strategies at global and local levels.
7.2	Need to accelerate a shift whereby the meat that will be consumed now and in the future is responsibly produced, accessible and consumed as part of a sustainable food system .	The Responsible Meat (ReMi) initiative aims to develop a collaborative model that enables meat value chains from producers to consumers to recognize and optimize sustainability value – across key sustainability criteria including environmental performance, working conditions, and animal welfare. The ReMi initiative will develop business guidance on consumer demand for responsibly sourced products. A joint definition of sustainability performance will need to be established to give a definition of sustainability that is visible and traceable all the way along the value chain to consumers. The ReMi initiative will also establish cross-value chain workshops to improving communication and cooperation between consumers, farmers, businesses, civil society organizations and Governments.
7.3	Food systems heavily rely on 5 key commodities (staple crops). Dependence of food systems on very few crops is associated with a wide range of risks in relation to lack of nutrients and associated negative health outcomes, and to decreased climate and economic resilience.	Diversifying staples , due to their dominance, and if achieved with the right foods, can have huge impact on nutrition/health, the environment and farmer resilience. Bringing to market other major staples, one at a time with well developed value chains, will require dedicated focused efforts. Millets (broadly defined to include sorghum) are the first crops to diversify staples because they were the

		traditional staples across much of Africa and Asia and fit the criteria of a smart food.
8.1	Antimicrobial resistance (AMR) presents a serious health, social, and economic burden. It is important to reduce the use of antimicrobials and combat the rising tide of antimicrobial resistance, where misuse and overuse of antibiotics are rendering standard treatments ineffective and once treatable infections can now kill. AMR may be considered a central part of future pandemic preparedness.	This proposition addresses antimicrobial resistance through a One Health approach including different elements building towards enforcing global unify response to this slowly but constantly rising threat. Good hygiene and biosecurity measures as well as strong environmental controls need to be implemented at scale, from farm to fork, as well as in human health systems. The proposition elaborates on how this can be done.
8.2	Many countries have developed multisectoral AMR National Action Plans (NAPs) to address AMR and many have regulations to control antimicrobial use. Implementation at scale however is a major challenge, compounded by lack of awareness, resources, capacity and incentives to change behaviour	The Global AMR Multi-Partner Trust Fund (AMR MPTF) is providing a valuable vehicle to support coordinated action on AMR. In addition, the AMR Global Governance Structures including the Global Leaders Group (GLG), Independent Panel for Evidence on Action against AMR (IPEA) and the Public Private Partnership Platform on AMR are also key components to effecting change. Through the AMR MPTF, the Tripartite together The Netherlands, Sweden and UK Fleming Fund, is addressing AMR as a component of a sustainable food production system.
9.1	Life Cycle Assessment (LCA) is an important tool that food system actors use to assess the environmental impacts of food items, and consumers and policymakers use to compare the sustainability of different foods and diets. However, LCA methodological issues are undermining the ability of consumers and other food system actors and policymakers to make robust, evidence-based choices to encourage sustainable food systems from healthy diets.	This project will use research on ways to make LCA more robust and multi-dimensional to develop an internationally recognised best practice guide for assessing and comparing the environmental and nutritional impacts of different food items. The guide will: identify and propose solutions for the key LCA food item methodology issues; include recommendations on how to use LCA to represent a range of internationally agreed key environmental and nutrition impacts in a way that can be compared across food items common to diets across the world; and be developed by a group of independent internationally recognized LCA experts from a range of FAO member countries and be reviewed and published by the FAO.
9.2	Policy makers must be able to draw upon the best possible science and evidence when deciding on the steps needed for the fundamental transition of food systems. While there is already a great deal of science and evidence available from multiple sources, substantial problems remain: There are important gaps in the evidence base, and the advice provided by different research groups can sometimes be conflicting. There may also be a deficit of trust in some areas of research.	There are many ways to affect a step change in the science-policy interface (SPI) . It needs to address three priorities: establish and strengthen inter-governmental and global institutional mechanisms to better forge credible and authoritative consensus on scientific evidence, resolving controversies surrounding new research; improve the research performed so that it is more closely linked to the needs of policy makers, more streamlined and efficient, and with much better linkages across sectors; increase the legitimacy of scientific advice through

		transparency in a rigorous synthesis and assessment process which fully includes the perspectives and voice of low- and middle-income countries. One particular approach to delivering the necessary improvements that has been mooted in recent years relates to the creation of an IPCC-like organization for sustainable food systems (an ' International Platform for Food System Science – IPFSS ').
10.1	The informal food sector has enormous potential to contribute to improving the nutrition, health, and livelihoods of the poor, but faces significant challenges. Food in informal markets is often unsafe with high levels of contaminants and pathogens. The presence of hazards in informal markets are just one of the reasons why officials and planners often try to suppress this sector. Informal food vendors regularly face harassment and extortion by law enforcement officials. The challenges faced by vendors are largely due to the erratic governance of this sector.	The solution has two components. First, to engage with and secure commitment from all actors overseeing urban informal vendors, including relevant ministries as well as metropolitan and municipal governments. The proposition elaborates on specific actions to engage these actors in. Second, to support the formation of alliances between associations of informal food vendors, civil society actors, and consumer groups and use these as a platform to improve the healthfulness and safety of foods sold while maintaining affordability. Key areas of action include training, certification, and business and marketing interventions paired with provision of water and sanitation facilities.

Gap 1: Marketing and advertising – incl. social marketing

Solution 1.1- Demand generation for healthy and sustainable food

What problem is your proposition addressing?

To reach the SDG goals and to transform food systems, nutritious foods from sustainable food systems, must shift from niche to mainstream consumption. We need a radical change in how consumers think and act about food.

It is important to influence consumer consumption patterns through measures that improve choice offering (e.g., reformulation, sustainable sourcing, etc), with sign posting (e.g., choice architecture and front-of-package labelling) or price signals (e.g., taxes or subsidies) at points of sale. Yet deploying these interventions, even in combination, will unlikely shift consumption patterns as quickly and widely as needed to tackle malnutrition, climate change and biodiversity loss, because these do not address the underlying consumer preference at the societal level.

To enable shifts in consumption patterns, nutritious foods from sustainable¹ food systems must become the preferred choice for most consumers in each society.

Unfortunately, many of these foods, e.g., vegetables, legumes, small, dried fish, liver, plant-based meat alternatives, or plant-based dishes, can be perceived as either less palatable, not as enjoyable, not as filling, or not aspirational.

How does your proposition address the problem?

Each **society** has a differing value sets and preferences surrounding food, and this affects how systemic actors and individual actors behave within that society. But social transformation does not only happen organically; it can be helped by changing consumers' mindsets. The key tools available include communication technologies, shared cultural and social experiences, gender identities, social movements that draw on values, and symbols that represent powerful ideas of social norms, social change.

The level of societal change discussed above requires **collective action at society level**. It calls for **multi-sector collaboration** and new ways of working together, because no one actor can change demand on their own. It also means that we **collectively leverage social and cultural drivers** of food preferences.

Changing societal norms and perceptions can enable **better preferences** and better choices. There needs to be a push to portray nutritious and sustainable food as more desirable, or even 'cool'.

By addressing social norms and perceptions, we can complement and strengthen action already underway in food policy (taxes, agricultural subsidies, marketing restrictions), food environment (labelling), and behaviour change. Government's role is to support and ensure alignment between social and cultural initiatives and other policy efforts.

The **Demand Generation Alliance** seeks to enable shifts in consumption of nutritious diets from sustainable production systems by shaping society-wide consumer preferences. The DGA will do this by (a) identifying relevant consumer food preference issues, (b) building evidence & learning from effective social- or culture-change strategies to drive social norms that lead to shift in preferences and choice, and (c) mobilizing cross-sector alliances in countries to deploy these strategies to shift preferences in the right direction.

Is this a new solution or an existing solution that needs scaling?

New solution

¹ The DGA follows the EAT-Lancet Commission Summary Report and defines sustainable foods using economic (i.e., fair wages for producers), social (i.e., human rights, attractive opportunities, support resilience of producers), and environmental principles (minimal negative impact, reduces waste throughout the value chain).

Which organisation/s, institution/s or groups of individuals are associated with the solution?

The Global Alliance for Improved Nutrition (GAIN), Global Business School Network (GBSN), EAT, Consumers Goods Forum (CGF), World Food Programme (WFP) Nutrition Division, Thunderbird School of Global Management, and the World Business Council for Sustainable Development (WBCSD)

What is the scientific evidence that supports your proposition?

- Drivers of consumer demand for food reside at individual-level, food environment level, and enabling environment level – which are all impacted by multiple factors and actors^{2,3}.
- This complexity calls for collaboration⁴ because there is no one actor (e.g., government, private sector) who alone can shape or be responsible for shifting consumer demand.
- In the enabling environment, government-led policy and economic interventions tend to be more prevalent⁵. Society and culture are ‘enablers’ for consumer preference and choice,^{1,6} and there are growing calls for addressing culture, perceptions, and social norms^{7,8}.
- Preferences are drivers of consumption patterns for ‘less desirable’ nutritious foods (e.g., vegetables)⁹. Preferences can be actively shaped through culture and social norms^{8,9}.

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

This is a globally applicable idea because it builds on local cultural and social assets.

Who are the main actors that would put this action into place?

This is a multisector initiative requiring the action of the following actors: citizens and consumers, NGOs, academia, government, businesses, media, donors and investors.

Source and process

- Eva Monterrosa & Alia Poonawala, GAIN
- Ashish Deo, GAIN (AT2 Leadership Team member)
- Emeline Fellus, WBCSD (AT2 Leadership Team member)

² Committee on Food Security. Nutrition and food systems. HPLE Report #12;2017

³ See Turner C, Aggarwal A, Walls H, Herforth A, Drewnowski A, Coates J, et al. Concepts and critical perspectives for food environment research: A global framework with implications for action in low- and middle-income countries. *Global Food Security*. 2018 Sep 1;18:93–101

⁴ Committee on Food Security. Multi-stakeholder partnerships to finance and improve food security and nutrition in the framework of the 2030 Agenda. HPLE Report #13. 2018.

⁵ Swinburn B, Sacks G, Vandevijvere S, Kumanyika S, Lobstein T, Neal B, et al. INFORMAS (International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support): overview and key principles. *Obes Rev*. 2013 Oct;14 Suppl 1:1–12.

⁶ Monterrosa E, Frongillo EA, Drewnowski A, de Pee S, Vandevijvere S. Sociocultural influences on food choices and implications for sustainable healthy diets. *Food and Nutrition Bulletin*. 2020;41(2_suppl):59S-73S.

⁷ Vermeulen SJ, Park T, Khoury CK, Béné C. Changing diets and the transformation of the global food system. *Annals of the New York Academy of Sciences*. 2020;1478(1):3–17.

⁸ Moberg E, Allison EH, Harl HK, Arbow T, Almaraz M, Dixon J, et al. Combined innovations in public policy, the private sector and culture can drive sustainability transitions in food systems. *Nature Food*. 2021 Apr;2(4):282–90

⁹ De Bourdeaudhuij I, te Velde S, Brug J, Due P, Wind M, Sandvik C, et al. Personal, social and environmental predictors of daily fruit and vegetable intake in 11-year-old children in nine European countries. *European Journal of Clinical Nutrition*. 2008 Jul;62(7):834–41

Solution 1.2 - Challenging the masculinity of meat.

Support for public communication campaigns specifically attacking the established association between meat consumption and desirable masculine traits.

What problem is your proposition addressing?

The link between masculinity and meat is deeply imprinted in our psyche and supported by evolutionary narratives connecting 'hunting' (animals) to the masculine role, and 'gathering' (plant-based food) to the feminine role. While there is not much evidence for such strict role divisions (and quite some evidence to the contrary; Ember 1978, Rozin et al 2012), the narrative itself has become the basis for attributing meat consumption to masculinity. Meat as a nutrient provides males with physical strength, and as long as it was a limited resources in male dominated societies became the preferred food for males, and by extension the food that promotes manliness. Recent studies show that men tend to choose significantly more gender-normative masculine meal options, usually containing large portions with ample meat, while women do not object to lighter, vegetarian, plant-based foods (Sobal, 2005; Rothgerber, 2013). In addition, a male choice to not consume meat is often as threatening masculinity and male gender identity (Bogueva & Marinova, 2019; Gal & Wilkie 2010). As a consequence, femininity and greenness have become associated, which further distances males from ecologically friendly (food) consumption (Brough et al 2016). In addition the link between meat and masculinity also relates meat consumption to autonomy and power, which makes it an attractive target for those who currently have less social power. Meat, through its masculine connotation, has become an object of 'aspirational consumption'. The wide availability of meat and meat-based foods have then resulted in production and consumption levels of meat which are considered to be damaging to health and unsustainable for the planet.

How does your proposition address the problem?

I propose that UN supports a concerted campaign to dissociate meat consumption and masculinity. Such a campaign can directly attack the relationship between meat eating and desirable masculine traits (like strength, decision autonomy, self-determination, ...). It can also positively related plant-based food consumption to exactly these traits, which are stereotypically male but obviously desirable traits for women as well. Such campaigns provide support for an alternative for the meat-masculinity link, that is an important implicit driver of excessive meat consumption. By attacking this implicit base, it also provides support for other measures to curb meat consumption (regulation, pricing, development of product alternatives for meat) and helps those measures to be more successful. So, I see this as a supporting activity for other measures.

It can work through traditional advertising channels (mass media and social media) but can also use important influencers for food preparation and consumption. Vegetable based cuisine is often believed to be tasteless and the choice of those who cannot afford 'better options'. One way to counter the negative associations is to work with 'influencers' who have an impact on what people see as fashionable. I refer mainly to well-known culinary celebrities, or (male!) TV-chefs like Jamie Oliver or Yotam Ottolenghi. Every culture has their own celebrity chefs. They can have a tremendous impact on what people perceive as

suitable everyday cuisine. The UK is a very good example on how they have influenced food culture, making the UK one of the most vegetarian-friendly culinary environments in the world. There are books, TV programs, websites and social media that can be supported and where these well-known chefs can lend credence to plant-based alternatives.

Is this a new solution or an existing solution that needs scaling?

I am sure there must be examples of such communication initiatives in different countries, but there has to my knowledge never been a global effort, and I am not aware of any large-scale campaign trying to break the association between meat and masculinity, per se.

Which organisation/s, institution/s or groups of individuals are associated with the solution?

Government communication offices, health directorates, etc...

What is the scientific evidence that supports your proposition?

Brough, Aaron, James E. B. Wilkie, Jingjing Ma, Mathew S. Isaac, David Gal, Is Eco-Friendly

Unmanly? The Green-Feminine Stereotype and Its Effect on Sustainable Consumption, *Journal of Consumer Research*, Volume 43, Issue 4, December 2016, Pages 567–582,

Bogueva, D., & Marinova, D. (2019). Reconciling Not Eating Meat and Masculinity in the Marketing Discourse for New Food Alternatives. In D. Bogueva, D. Marinova, T. Raphaely, & K. Schmidinger (Ed.), *Environmental, Health, and Business Opportunities in the New Meat Alternatives Market* (pp. 260-282). IGI Global. <http://doi:10.4018/978-1-5225-7350-0.ch014>

Ember, C. (1978). Myths about Hunter-Gatherers. *Ethnology*, 17(4), 439-448

G, D & Wilkie, J. (2010), Real Men Don't Eat Quiche Regulation of Gender-Expressive Choices by Men," *Social Psychological and Personality Science*, 1, 291–301.

Rothgerber, H. (2013). Real men don't eat (vegetable) quiche: Masculinity and the justification of meat consumption. *Psychology of Men & Masculinity*, 14(4), 363.

Rozin, Paul, Julia M. Hormes, Myles S. Faith, Brian Wansink, Is Meat Male? A Quantitative Multimethod Framework to Establish Metaphoric Relationships, *Journal of Consumer Research*, Volume 39, Issue 3, 1 October 2012, Pages 629–643, <https://doi.org/10.1086/664970>

Sobal, Jeffrey (2005), "Men, Meat, and Marriage: Models of Masculinity," *Food and Foodways*, 13 (1–2), 135–58.

Is this idea applicable to a particular geography, demography, landscape, or other type of setting?

No, should be quite generally applicable.

Who are the main actors that would put this action into place?

Governments working with advertising agencies and media companies.

Source and process

- Luk Warlop (AT2 Leadership Team member)

Solution 1.3 - Maximizing the future of consumer information for healthy diets from sustainable production systems

What problem is your proposition addressing?

Consumers across the world are increasingly recognizing the value of healthy diets and [expressing a willingness](#) to change their shopping habits to reduce environmental impact. These consumers are [being let down](#) by [ineffective consumer information](#). To be able to act on their good intentions, they require [reliable, relevant, clear, transparent, and accessible](#) information on nutrition and sustainability. Currently, this is rarely available. The biggest investment in consumer information comes from companies in the form of marketing, which has the potential to be [a force for change](#), but must become fit for a sustainable and healthy future.

How does your proposition address the problem?

We need to radically rethink how businesses engage with and inform consumers, as well as the role of regulatory standards for marketing, in order to build a marketplace in which responsibility for healthy and sustainable consumption is shared more evenly between stakeholders, and in which consumers are empowered to make better choices.

There are four key levers for achieving this transformation:

1. Expand and enhance government regulation of marketing, setting clear standards on [transparency](#), [sustainability claims](#), and the targeting of [vulnerable consumers](#).
2. Generate [new marketing tools and incentives](#), replacing traditional techniques with an approach that centers the creation of value for people and planet.
3. [Standardize](#) and [streamline](#) product labelling, to provide straightforward and independently-verified information on food products.
4. Engage and empower consumers to [shape the future](#) of marketing and consumer information, for instance by guaranteeing [ownership of their data](#), and creating mechanisms for the enforcement of [consumer rights](#).

Improving consumer information alone is not enough to deliver healthy and sustainable consumption but is a crucial step that will create momentum for changes earlier in the value chain and inspire innovation from businesses.

UNFSS brings together representatives from government, the private sector, and consumer advocacy, all of whom must buy in to this transformation if it is to be successfully implemented. The summit will provide an opportunity for (1) governments to learn about best existing practices in the regulation of marketing, and to commit to [work with consumer advocates](#) to shape future legislation; (2) private companies to both share expertise and learn from others about new marketing tools and incentives, and also to commit to the realignment of marketing practices; (3) the advancement of the conversation on product labelling, bringing stakeholders from across the world and across all sectors together, to create a framework for the [standardization and streamlining](#) of labelling practices; (4) the sharing of best practices in the enforcement of [consumer rights](#), leading to government commitments, as well as connecting consumer advocates at national and international level with donors.

Is this a new solution or an existing solution that needs scaling?

New solution

Which organisation/s, institution/s or groups of individuals are associated with the solution?

[Consumers International](#), along with its membership of 200 consumer advocacy organizations across more than 100 countries. Consumers International is also co-lead of the UNEP One Planet Network's [Consumer Information Programme](#) (CI-SCP), which would be mobilized in support of the solution. We would also create a coalition of leaders from across business and government to explore this issue and build together.

What is the scientific evidence that supports your proposition?

The need to transform consumer information and marketing is clearly demonstrated by evidence that poor quality information is a barrier to healthy and sustainable choices; that existing marketing practices represent a missed opportunity to improve consumer information; and that there is strong consumer demand for clearer and better-quality information.

Each of the four levers identified by this solution draw on both research into shifting consumption patterns, and on the practical experiences of consumer advocates from around the world, who are best-placed to identify which solutions are most effective in engaging and empowering consumers. References to examples of evidence on both problem and solution are included within the proposition sections.

Is this idea applicable to a particular geography, demography, landscape, or other type of setting?

The impact of improving consumer information will be felt most strongly in higher-income contexts where consumers have more capacity to make purchasing decisions based on health and sustainability, but these solutions will also be of benefit to lower-income contexts, where consumer information is currently weakest.

Who are the main actors that would put this action into place?

National governments, private companies, consumer advocates, individual consumers

Source and process

- Helena Leurent – Director General of Consumers International, AT2 leadership team member
- Consumers International's UNFSS Task Force, comprising representatives from: Consumer VOICE (India), Rwanda Consumer's Rights Protection Organization, [Forbrukerrådet \(Norway\)](#), [Citizen Consumer and Civic Action Group \(India\)](#), [Consumentenbond \(Netherlands\)](#), [El Poder del Consumidor \(Mexico\)](#), [Instituto Brasileiro de Defesa do Consumidor \(Brazil\)](#), [Which? \(UK\)](#), [Consumers Lebanon](#), [Federacja Konsumentów \(Poland\)](#), and more

Solution 1.4. - Investing in better public sector marketing

Social marketing to create and sustain desire for specific foods and healthy diets from sustainable production systems

What problem is your proposition addressing?

Public sector marketing in the nutrition sector has not been as effective because:

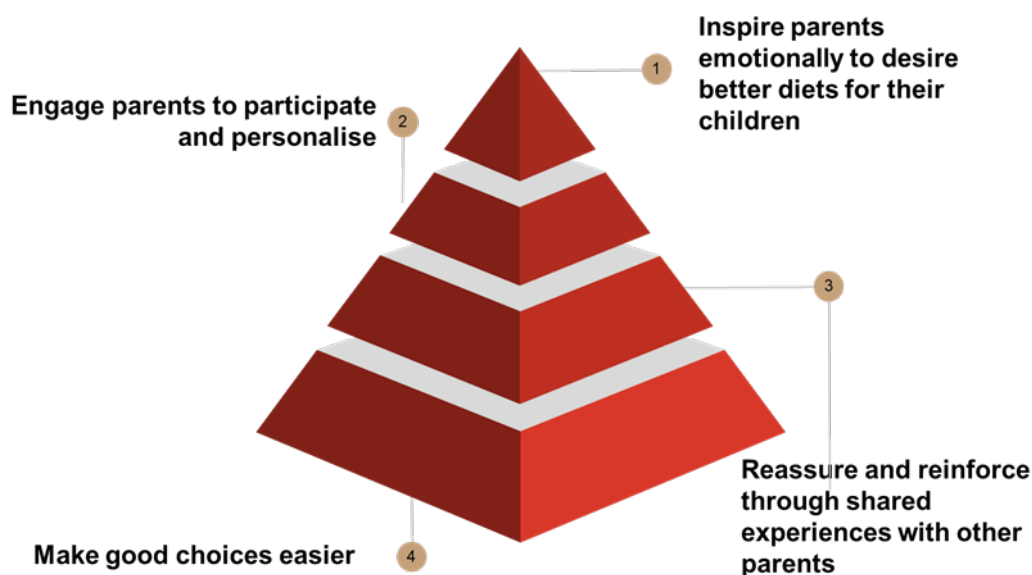
1. It does not effectively deal with the two-tier nature – diets and foods – of the issue. And leads to efforts that promote specific foods or behaviors, resulting in uncoordinated efforts creating communication overload for consumers, who then ignore many of these messages.
2. Most approaches are based on the belief that lack of knowledge (about the health benefits of good nutrition), or skills (how to prepare nutritious food) are the main barriers. So, while consumers say nutrition is important, they are not sufficiently motivated to practice better diets. Some success has been achieved using nudges to influence consumers' subconscious decision-making process, but it is unlikely to be enough.
3. There has been insufficient focus on simultaneously curtailing unhealthy dietary choices, and most importantly,
4. There is a lack of sustainable sources of large-scale funding required to support the long-term efforts required to bring about change and compete with commercial food marketing.

To create sustainable shifts, we need to create desire for healthy diets from sustainable production systems, even if it takes a long time. We must motivate and empower consumers, so they seek information in the food environment and respond to it by making better choices. Current approaches do not sufficiently leverage the role of consumer motivation and agency.

How does your proposition address the problem?

1. It treats diets and foods as a connected two-tier structure (because a good diet can be put together in many ways) and promotes them in a coherent way. A similar two-tiered approach has been used in family planning where desire for smaller families can be achieved through many different means of contraception.
2. Through use of emotions to motivate consumers. Emotions make the circumstances memorable and sufficiently compelling to action, especially if the information is relatable. We deliver compelling stories and create compelling contexts (e.g., memorable dining experiences) to sufficiently motivate consumers.
3. By working in parallel with the ideas in the 'Demand Package' from Wave 1 which create a 'level playing field' for promotion of healthy diets from sustainable production systems by restricting marketing that promotes unhealthy diets.
4. By using the 'sin taxes' – a crucial tool to curtailing bad choices – as the sustainable source of funding. This can be taxes on advertising of unhealthy diets or on foods that are central to such diets themselves.

It will use a layered communication strategy to promote better diets and specific foods together in a coherent way. The diagram below shows how it might work with parents, who as heads of households are primarily responsible for food purchases, and such households account for a large proportion of the population in most countries.



Such an architecture enables use of the right combinations of messages & channels but in a way that the consumers see as connected and coherent. Levels 1-2 create the motivation and desire for better diets, while levels 3-4 promote specific foods or behaviours; all 4 levels are under a single promotion strategy or 'brand'. A further advantage of levels 3-4 is that one can promote unpackaged / unbranded foods (legumes, vegetables) and packaged foods that are healthy (e.g., fortified flour).

Is this a new solution or an existing solution that needs scaling?

New solution

Which organisation/s, institution/s or groups of individuals are associated with the solution?

GAIN has been developing this idea for some time. But such an approach needs substantial long-term investment and accompanying regulatory actions. This means country govt support is essential for sustaining the solution, though donor support is required to get started. It might also need new institutional arrangements. Pawan Agarwal (who conceived & launched Eat Right India Campaign) noted the need for such arrangements in an AT1 call. Usually, a coordinating structure is required to support the campaign in countries, since the campaign will cut across many ministries. One opportunity might be to integrate this idea with the Eat Right India campaign, if the Indian govt can be persuaded.

Our consultations with Kenyan SMEs, who sell nutritious foods, showed that they believe such a public funded campaign will help their businesses enormously by boosting demand for healthier foods in general. Kenyan Govt representatives could also see the need for such investments to increase consumption of unbranded / unpackaged foods like vegetables and pulses / beans. However, more work is needed to work out how bigger food brands can align with and contribute to such a campaign. WBCSD and / or CGF could help here.

In an ideal scenario, this campaign would be connected to existing supply side initiatives, such as food safety at retail, increasing food availability through large and small food businesses. Or to ideas from Action Track 1 like Nutrition Sensitive Social Protection which will boost incomes / purchasing power in developing countries.

What is the scientific evidence that supports your proposition?

- The role of feelings in decision-making has been acknowledged in functional and constructivist theories on cognition and decision making¹⁰.
- The 'pyramid' shown here is standard best practice in advertising and communication.
- The effectiveness of comprehensive regulatory measures to curtail bad choices has been shown in Chile¹¹. However, without government investment in promotion, policies like warning labels, though well understood, are unlikely to be enough to improve diets – see¹².

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

It is broadly applicable; however, it has been informed by the developing / LMIC countries context for improved diets. It requires further work for applying in developed countries due to different structure of retail and markets (more packaged food, issue of overconsumption of calories and specific foods etc.)

Who are the main actors that would put this action into place?

Donors – for initial funding.

Country Govt – to ensure sustained funding and regulatory action.

Organizations like GAIN to develop and set up the programme.

Creative agencies to develop and implement these campaigns.

Food businesses who can align with the campaign. Consumers to engage and further drive issues of better diets and foods.

Source and process

- Ashish Deo from GAIN (member of AT2 Leadership Team) is the main source with inputs from two other LT members – Emeline Fellus from WBCSD and Daniel Vennard (WRI). Eva Monterrosa from GAIN has also contributed to developing this idea.

¹⁰ Petty RE, Cacioppo JT, Schumann D. Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement. *Journal of Consumer Research*. 1983;10(2):135–46.

¹¹ Taillie LS, Reyes M, Colchero MA, Popkin B, Corvalán C. An evaluation of Chile's Law of Food Labeling and Advertising on sugar-sweetened beverage purchases from 2015 to 2017: A before-and-after study. *PLOS Medicine*. 2020 Feb 11;17(2):e1003015

¹² Gregori D, Azzolina D, Lanera C, Ghidina M, Gafare CE, Lorenzoni G. Consumers' attitudes before and after the introduction of the Chilean regulation on food labelling. *International Journal of Food Sciences and Nutrition*. 2019 Oct 3;70(7):868–74.

Gap 2: Short Supply Chains

Solution 2.1- Campagna Amica

A Farmers' Market Network that promotes and valorises producers-led initiatives for more sustainable and informed consumption pathways, involving more than 10.000 farmers

What problem is your proposition addressing?

- Strengthen the link between farmers and consumers, provide consumers with transparent information on how food is produced
- Ensure farmers' fair income
- Raise awareness on the importance of healthy and sustainable food choices (seasonality)
- Promote local agriculture
- Reduce food waste, packaging and plastic use
- Reduce transportation costs and emissions
- Support and spur tourism and related activities in the countryside
- Support food education through education campaigns led by farmers

Campagna Amica (CA) is an effective and instrumental tool in bridging the gap between producers and consumers. It provides an effective and replicable way to build food environments that make sustainable and healthy dietary choices (the preferred ones) by also making clear, in a simple and direct way, the link between good nutrition and the environment.

How does your proposition address the problem?

Campagna Amica (CA) organises “physical points of excellence” of the Italian agri-food supply chain “zero kilometres”, shortening the supply chains, selling local products, and providing a direct physical contact between farmers and consumers.

Shortening the chain has - as a first immediate consequence - a fair payback to producers and transparency to consumers.

CA promotes a model of agriculture that respects soils and enhances biodiversity, through the promotion of an agricultural system strictly tied to territories: i.e. local production, seasonality, regenerative agriculture.

Education is at the core of CA's activities of (i) creating knowledge and information tools, in particular to children, on nutrition and environment, and (ii) promoting virtuous lifestyles towards both the environment and the consumption pattern. The direct educational exchange has the potential to influence how people understand food systems, make choices related to consumption, and acknowledge the importance of the origin of food.

Furthermore, direct selling enables to tackle the problem of over-packaging, cutting at the same time the use of plastic and, where necessary, imposing the use of only “fully recycled” plastic bags.

A key feature that makes CA's experience unique is represented by the strict set of rules and controls in terms of behaviour, hygiene standards, transparency, label and controls, which ensure both transparency and trust. All farms which participate to the Farmers' Markets of Campagna Amica (CA) accept to be under a triple control both on the documents that they provide and on the activities on the field.

CA gives the opportunity also to diversify incomes by including a network of 2.500 agritourist reception infrastructures that promotes the farmers' multifunctional activity.

The last available figures indicate that in Italy 15 million citizens make their food purchases also in the Campagna Amica's markets. In the last 5 years the percentage of people buying in Campagna Amica's farmers market increased from 29 to almost 50%.

They found as added value of these markets the trust in rules and controls, the seasonality of products that they find in the markets and the relation between cost and quality.

Is this a new solution or an existing solution that needs scaling?

Existing Solution that needs scaling. This is replicable at global level because it is a bottom-up initiative, led by a farmer organisation, that acts at local level in order to bring farmers together, set strict rules and controls paths in order to increase the trust of the consumer when they buy a product from farmers' markets.

Which organisation/s, institution/s or groups of individuals are associated with the solution?

- **Coldiretti** <https://www.coldiretti.it/>

With 1.6 million members, Coldiretti is the main farmers' organisation in Italy and across Europe. Coldiretti works to strengthen the links between producers and consumers to improve the functioning of the whole food supply chain.

- **Fondazione Campagna Amica:** www.campagnamica.it

Campagna Amica is a foundation promoted by Coldiretti, which developed a strong network able to link the interests of both producers and consumers. It involves more than 10,000 farms, 1,200 farmers' markets and 2,400 agritourisms.

- **World Farmers Organisation:** www.wfo-oma.org

The World Farmers' Organisation (WFO) is a member-based association, bringing together national farmers' organizations and agricultural cooperatives from all over the world.

Coldiretti is a member of the World Farmers' Organisation.

What is the scientific evidence that supports your proposition?

The last available figures indicate that in Italy 15 million citizens make their food purchases also in the Campagna Amica's markets. In the last 5 years the percentage of people buying in Campagna Amica's farmers market increased from 29 to almost 50%.

They found as added value of these markets the trust in rules and controls, the seasonality of products that they find in the markets and the relation between cost and quality.

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

The Campagna Amica (CA) Project is definitely a scalable "solution", given that it provides a framework, which includes a vast and rich way of examples that could fit with different areas, communities and countries across the globe.

As an example, Italy is characterized by very different geographic, morphologic, traditional, economic and social features. The capillarity of the project and the results achieved during the years, regardless of the location of the markets, show that scalability is not only possible

rather it represents its real added value.

Who are the main actors that would put this action into place?

- Farmers/fisheries
- Farmers' Organisations/Cooperatives
- Consumers (individuals)
- Governments
- Cities and municipalities

Source and process

- World Farmers' Organisation – AT2 Leadership Team member

Solution 2.2.- Supporting short food supply chains

Proposing a program to motivate national and local authorities to support direct trade relationships between producer and consumer

What problem is your proposition addressing?

Supply chains for the food industry have become increasingly complex with more processing and transportation stages, leading to larger scale industrial production and proliferation of hyper-processed foods (Kneafsey et al 2013). This 'system' developed in the competitive market because it reduces consumer prices, and at the same time maximizes convenience for the consumer. It does not maximize food healthiness and hurts sustainability. Mass production, hyper-processing and transportation all have considerable environmental costs. They also threaten the livelihood of small non-industrial farms and artisanal food producers (of bread, cheese, wine, etc...), who cannot compete in terms of unit costs with industrial large-scale producers. Because of the consumer benefits, this system will not be easy to change. Obvious measures like increasing taxes on or reducing access to unhealthy, hyper-processed foods will be met with popular and political resistance. A complementary route is to support the survival of alternatives to this system, such that they align better with consumers' self-interest, initially address the needs of a segment of consumers desiring more transparency and authenticity, with potential for growth. This alternative is offered by various manifestations of short food supply chains, which in turn also allow smaller farmers and producers to survive and continue to provide a more sustainable alternative to mass production to the autonomous consumer.

How does your proposition address the problem?

The term Short Food Supply Chain (SFSC) refers to any form of direct sale from farmers to consumer (Ilbery and Maye 2005), and it is often used in opposition to mainstream global food supply systems based on large-scale production and product standardization. They allow small farms and artisans producing minimally processed foods (like bread, cheese, wine, ...) to sell receive a larger proportion of the consumer price as income that traditional supply chains do. They offer transparency to the consumer, and provide opportunities for small scale farmers and artisans to work in more sustainable ways. SFSCs encompass multiple sales schemes such as: on-farm direct sales, farmers' shops, farmers' markets, and partnerships between producers and consumers, all aimed to minimize the number of intermediaries. Classic physical farmers markets typically take place in population centers, but are increasingly complements by initiatives that utilize the opportunities offered by the internet, eg., online ordering from multiple providers with local pick-up locations, coordinated by NGO's, and typically labeled as 'Alternative Food Systems' (Renting et al 2003). Good (and already international) examples of the latter are online farmer market platforms like <https://www.openfoodnetwork.org/> and <https://nous.laruchequiditoui.fr/>.

Short supply chains – with direct farmer to consumer sales as the extreme – offer many benefits in terms of sustainability and health but should be made more convenient (larger assortments, less effortful acquisition for the consumer). Initiatives to make supply chains shorter are developing spontaneously in the marketplace. They initially appeal to niche audiences (eg., direct trade for coffee, farmers markets in cities), but need support to become more convenient and appeal to larger audiences. Very concretely a UN initiative could (1) support local (and growing) direct trade initiatives. A UN program could help set transparency and quality standards for these platforms. (2) A UN program could support

local (city and regional) governments in setting up farmers markets (convenient locations in the city for physical markets, pick up locations for the online initiatives). Such initiatives re-connect farmers and food artisans to the local social fabric, and have additional benefits in terms of social capital.

For example, a 2015 study in Italy showed that a higher density of farmers' marketing in a region is associated with lower BMIs, suggesting that the presence of farmers' markets promotes healthier food habits and lifestyles (Bimbo et al 2015). Recently, research in the UK has documented positive associations between participation in local food initiatives and mental well-being (Bharucha et al 2020). None of these studies by themselves are conclusive, but they support the idea that fostering direct contact between farmers and consumers has benefits beyond contributing to more sustainable food habits (Chiffolleau & Dourian 2020).

Is this a new solution or an existing solution that needs scaling?

These initiatives develop locally and spontaneously. They are 'bottom-up', and that is a strength. They often remain more 'niche' than they could be due to lack of support, and lack of publicity. A large-scale support program for these local and scattered initiatives would be a new initiative. It could be coordinated at the UN level, support local authorities in providing space, time, and facilities for setting up classic markets, offer support for or access to convenient pick up locations for online initiatives. It could also convince national and supra-national authorities to facilitate and promote across-border direct trade, like the growing market for direct trade coffee in Europe and the US, in which coffee farmers directly sell to roasters, and the end consumer 'knows' the farm where his coffee was coming from (Gerard et al 2019).

Which organisation/s, institution/s or groups of individuals are associated with the solution?

Organizations of small farmers and artisans, NGO's, city and regional authorities,

What is the scientific evidence that supports your proposition?

Bharucha, Z. P., Weinstein, N., Watson, D., & Boehm, S. (2020). Participation in local food projects is associated with better psychological well-being: evidence from the East of England. *Journal of Public Health*, 42(2), e187-e197.

Bimbo, F., Bonanno, A., Nardone, G., & Viscecchia, R. (2015). The hidden benefits of short food supply chains: farmers' markets density and body mass index in Italy. *International Food and Agribusiness Management Review*, 18, 1-16.

Chiffolleau, Y., & Dourian, T. (2020). Sustainable Food Supply Chains: Is Shortening the Answer? A Literature Review for a Research and Innovation Agenda. *Sustainability*, 12, 9831.

Gerard, A., Lopez, M. C., & McCright, A. M. (2019). Coffee Roasters' Sustainable Sourcing Decisions and Use of the Direct Trade Label. *Sustainability*, 11, 5437.

Ilbery, B., and D. Maye. 2005. Alternative (shorter) food supply chains and specialist livestock products in the Scottish and English border. *Environment and Planning A: Economy and Space*, 37, 823-844

Kneafsey, M., L. Venn, U. Schmutz, B. Balázs, L. Trenchard, T. Eyden-Wood, E. Bos, G. Sutton, and M. Blackett. 2013. Short food supply chains and local food systems in the EU. A state of play of their socio-economic characteristics. *European Commission Report*.

Renting, H., T.K. Marsden, J. Banks (2003). Understanding Alternative Food Networks: Exploring the Role of Short Food Supply Chains in Rural Development, *Environment and Planning A: Economy and Space*, 35, 393-411, [10.1068/a3510](https://doi.org/10.1068/a3510)

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

Not particularly, although I see most potential in the more populated (city) environments of the Northern hemisphere.

Who are the main actors that would put this action into place?

Organizations of small farmers and artisans, NGO's, city and regional authorities,

Source and process

- Luk Warlop (AT2 Leadership Team member)

Gap 3: Blue Food

Solution 3.1- Food Security Kitemark

Protect and support local, diverse, nutritious blue food environments

What problem is your proposition addressing?

Local, wild, blue food production systems are characteristic of food commons in that they are widely distributed, employ large numbers of people (Cohen et al 2019), and support a diversity of nutritious foods and food practices that support more healthy diets (Bogard et al 2015, Thilstead et al 2015). However, these systems are increasingly undermined by the homogenization and intensification of commercialized food commodities that: 1) drive overexploitation and illegal practices; 2) increase energy and fuel use demand; 3) undermine local food and nutrition security.

Blue foods are the most traded food commodity globally (Gephart & Pace 2013); with even greater quantities moved through foreign and illegal fishing (Belhabib & LeBillon 2020). Yet, the majority of this flow is poorly documented and unregulated. Consequently, a limited number of mostly high income nations and corporations benefit disproportionately from global fishing (Osterblum et al 2015), often in nations where food and nutrition insecurity is of concern (e.g. Pacific nations, Bell et al 2015), or worsening (e.g. west Africa, Okafor-Yarwood 2019), and the benefits of trade remain ambiguous (Bene et al 2010, Asche 2009). This concentration of blue food influence presents a unique, and urgent, position for leverage based on principles of justice, that the UNFSS is well placed to negotiate.

How does your proposition address the problem?

A food security kitemark, developed for blue foods but with broader application to other food based systems, is a voluntary commitment designed to support governments, businesses, and other non-state actors to enact a principle of 'do no harm'. Through requirements:

1. **Local Food Security Impact Assessment:** Companies involved in transporting nutritious food (e.g. tuna, fishmeal and fish oil (FMFO)) will be required to evaluate the local state of food and nutrition security involving:
 - Minimum levels of participation from actors along local value chain (e.g. small scale producers, traders, consumers), key social groups (e.g. representatives across age, gender, class, ethnicity groups), with precedent given to female-headed households.
 - Existing local and global databases and guidelines will be made available to support this assessment (e.g. Food systems dashboard, Food composition databases, Global Dietary Database).
2. **Implement corrective measures:** Where a status falls below a bar, a commitment is triggered, and companies will be required to implement corrective measures such as:
 - Bolster local diets by channelling locally set portion of their nutritious products. These can be repurposed from discards, bones, heads, viscera, and produced for local school feeding or food assistance programs, for example in the form of dried fish powders (Byrd 2021).
 - Support local markets through price protections, purchasing contracts, investments into safe processing programs (e.g. drying).
 - Promote local and indigenous dishes through marketing, chef schemes, and fresh produce to school programs (e.g. small fish in w Africa).

3. Blue Food 'Trase' system for use in policy development and negotiation

(Gardner et al 2019): A global system to identify and monitor 'keystone commodities' (starting with FMFO and Tuna) that have been found to exacerbate overexploitation and food insecurity will be established. This system would build on systems developed to monitor soy (e.g. [TRASE](#)) and provide a system of transparency to monitor and support those accredited with a kitemark. This information will be used to support inclusion of FSK clauses in trade negotiations, multi- and bi-lateral agreements.

Is this a new solution or an existing solution that needs scaling?

Draws together existing ideas to develop a cross cutting solution that can be place based, but globally relevant.

Which organisation/s, institution/s or groups of individuals are associated with the solution?

Lancaster University, FAO, WorldFish, Stanford & Stockholm Blue Foods Assessment, SEABOS, (TRASE-to be established)

What is the scientific evidence that supports your proposition?

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Is this idea applicable to a particular geography, demography, landscape, or other type of setting?

Most applicable to west Africa, the Pacific, but also applicable to other regions with high fisheries yields but food security and environmental concerns. Can also be repurposed for other food systems (e.g. Soy)

Who are the main actors that would put this action into place?

Global blue food corporations (e.g. Thai Union), multilateral organizations (e.g. FAO, WFP, ActionAid), (e.g. SEABOS), governments, SME's, Small holder organizations- e.g.

Source and process

- Christina Hicks (AT2 Leadership Team member)
- Philippa Cohen (WorldFish)
- Molly Ahearne (FAO)
- Omar Riego (FAO)
- Hazel Healy (New Internationalist)
- Henrik Osterblom (SEABOS, Stockholm Resilience Centre)

Gap 4: Finance and investments

Solution 4.1- The creation of a dedicated Global Financing Facility for food systems transition

What problem is your proposition addressing?

The vision of transformed food systems that deliver healthy diets from sustainable production systems for all will only become reality if it is delivered through clear transition steps that are both realistic and affordable. While the transition will generate considerable returns over time (for example in terms of health, productivity of workforces, and the environment), financing the necessary steps is likely to present substantial challenges, particularly for LMICs which may be severely resource-constrained in the wake of COVID-19. It may also be problematic in cases where the actors who need to resource the necessary changes may be different from the eventual beneficiaries.

How does your proposition address the problem?

The World Bank's new Food Systems 2030 Trust Fund for food systems transition, has the potential to be a transformational, and game-changing development, and as such should be endorsed, and strongly supported.

Food Systems 2030 provides advice and analytical products to underpin policy options, funds to pilot innovative approaches, and information to build support for change in different country contexts. Food Systems 2030 helps steer and leverage the impacts of World Bank lending to better achieve a vision of food systems which deliver healthy people, a healthy planet and healthy economies. It engages with the private sector by supporting the design, piloting and de-risking of innovative public-private partnerships which advance development goals. And it complements other resources that support sustainable land use and food security by taking a more integrated, multi-disciplinary and catalytic approach to food systems transformation. Activities funded by Food Systems 2030 will have a demonstrable positive impact on health, environment, and prosperity, with a strong narrative and results reporting that will capture these impacts.¹³

It is suggested that particular priority be given to actions that further the objective of ensuring everyone can access and afford healthy diets that have been sustainably produced. More specifically, the Global Panel's 2020 Foresight report (see below) details priority actions around four key themes:

- Making sufficient nutrient-rich and staple foods available to all, produced sustainably.
- Ensuring foods move along value chains more efficiently, improving accessibility and resulting in lower cost and less loss.
- Ensuring healthy diets from sustainable production systems are affordable to all, with lower demand for ultra-processed products.
- Empowering consumers to make more informed food choices, fueling rising demand for healthy diets from sustainable food systems.

Is this a new solution or an existing solution that needs scaling?

It entails scaling up the World Bank's existing Food Systems 2030 initiative.

Which organisation/s, institution/s or groups of individuals are associated with the solution?

Primarily The World Bank. The World Economic Forum has also been involved.

¹³ <https://www.worldbank.org/en/topic/agriculture/brief/food-systems-2030>

What is the scientific evidence that supports your proposition?

The case for food systems reform and the need for adequate finance to achieve that was developed in the Global Panel's Foresight report: Global Panel on Agriculture and Food Systems for Nutrition. 2020. *Future Food Systems: For people, our planet, and prosperity*. London, UK. (See www.glopan.org).

The World Bank has also developed a detailed case for the Food Systems 2030 initiative.

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

Food Systems 2030 targets policymakers, knowledge-based organizations, the private sector, and civil society organizations in low- and middle-income countries, as well as organizations at the global level seeking transformative change.

Who are the main actors that would put this action into place?

The World Bank has already established the Food Systems 2030 initiative, and would scale it up with the support of contributing countries.

The UNFSS provides an important opportunity for countries to endorse the importance of this initiative, and to commit to supporting it.

Source and process

The Global Panel on Agriculture and Food Systems for Nutrition.

Gap 5: Appropriate food processing

Solution 5.1- Microbiome-Based Nutritional Intervention

Harnessing the Role of the Microbiome in Food as Medicine

What problem is your proposition addressing?

Current estimates suggest that up to [10% of the global population](#) is undernourished, while 39% of adults over 18 are considered overweight and [18% obese](#). The critical driver of both under- and overnutrition is the lack of healthy amounts of nutrients. There is [growing awareness](#) that malnutrition cannot be solved without a robust understanding of the [role of the microbiome](#) in nutrient absorption and modulating [malnourishment](#). A greater understanding of the role of nutrients on metabolic processes by way of gut microbiota will inform solutions across the spectrum of malnutrition and pave the way for functional foods (food as medicine). But developing these foods requires alignment with suppliers engaged in sustainable agriculture to produce nutrient-rich foods, with testable and factual product claims and regulatory alignment to support the agenda.

How does your proposition address the problem?

The proposed game changer aims to scale up the integration of microbiome knowledge, understanding and data to enable the design of foods as medicine for individuals suffering from malnutrition. The proposed project will do this by (1) centralizing research and knowledge about the issue, including from food regulatory agencies such as the [EFSA](#) and [NIH](#), calling for an increased role of microbiome insight in food safety and regulation; (2) defining a set of guidelines and strategies for evaluating foods' impact on the microbiome and targeting micronutrients for specific outcomes; and (3) mobilizing cross-sector alliances to deploy these strategies to shift production and consumption towards healthy and sustainable options for the global population. The solution will provide the necessary tools to various stakeholders—including public health interventions, food producers, and individuals—to incorporate microbiome science in their solutions for malnutrition. Following implementation, a greater number of low risk and easily accessible solutions in the form of functional foods will be accessible and advocated for as first-line treatment in malnutrition.

Is this a new solution or an existing solution that needs scaling?

Awareness of the role of Functional Foods and Food as Medicine are growing across global health programs. We need to scale that awareness and centralize existing research; however, scaling will require novel tools in microbiome analysis and novel standards implemented across sectors to evaluate these solutions. The game changer will provide cutting-edge expertise in microbiome data analysis to enable the design of guidelines.

Which organisation/s, institution/s or groups of individuals are associated with the solution?

This is multi-stakeholder collaboration effort, including:

- Formal proposal collaborators: Eagle Genomics, WBCSD.
- Potentially interested parties: EFSA; FDA; FAO; WHO; GAIN; GCNF; Kiss the Ground; Sustainable Harvest International; the Carbon Underground.

What is the scientific evidence that supports your proposition?

There is increasing scientific evidence for the critical role of the microbiome in nutrition. An imbalanced microbiome has been shown to play a causal role¹⁴ in the presence of certain kinds of malnutrition; and conversely, specifically formulated foods that improve microbiome health¹⁵ have demonstrated effectiveness in treating malnutrition. Despite this success, the lack of standardization and guidelines¹⁶ for microbiome-nourishing foods remains a blocker in further implementation to the global food system. With proper awareness and guidance, microbiome science has the opportunity to not only vastly improve outcomes in malnutrition but also replenish soils, invigorate regenerative agriculture efforts¹⁷, and more broadly support sustainable food system initiatives¹⁸.

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

These tools are universal and the microbiome-safe products that they help generate would be globally available. It is critical that the guidelines focus initially on the treatment of undernourishment malnutrition (the lack of essential nutrients) with microbiome-forward solutions; and secondarily look to the question of microbiome-forward solutions for overnutrition (the overconsumption of certain nutrients, most common in developed countries). The collected information on key ingredients and safety procedures could be transferred to local producers who can implement solutions on the ground, while global producers design fortified foods for distribution.

Who are the main actors that would put this action into place?

Government organizations who can set guidelines for nutritional content that incorporate microbiome science; public sector groups who can increase access to microbiome-healthy diets; private companies who utilize microbiome-science in their product development; individual researchers and academic institutions who further investigate the role of the microbiome in nutrition.

Source and process

- Anthony Finbow, **Eagle Genomics**
- Emeline Fellus, **WBCSD and Action Track 2 Leadership Group member.**

¹⁴ Smith, Michelle I et al. "Gut microbiomes of Malawian twin pairs discordant for kwashiorkor." *Science (New York, N.Y.)* vol. 339,6119 (2013): 548-54. doi:10.1126/science.1229000

¹⁵ Collins, Francis. "Targeting the Microbiome to Treat Malnutrition." *NIH Director's Blog*. July 23, 2019. <https://directorsblog.nih.gov/2019/07/23/targeting-the-microbiome-to-treat-malnutrition/>

¹⁶ Merten C, Schoonjans R, Di Girola D, Pelaez C, Sanz Y, Maurici D, Robinson T, 2020. Editorial: Exploring the need to include microbiomes into EFSA's scientific assessments. *EFSA Journal* 2020;18(6):e18061, 7 pp. <https://doi.org/10.2903/j.efsa.2020.e18061>

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¹⁸ D'Hondt, K., Kostic, T., McDowell, R. et al. Microbiome innovations for a sustainable future. *Nat Microbiol* 6, 138–142 (2021). <https://doi.org/10.1038/s41564-020-00857-w>

Solution 5.2- Government-led reformulation of packaged food products to reduce sodium and sugar and eliminate industrial produced trans fatty acids

What problem is your proposition addressing?

The retail food sector has seen dramatic growth over the last 2-3 decades, particularly in Latin America and Asia, with more recent growth observed in Sub-Saharan Africa. With this expansion comes an increase in the purchase and consumption of packaged and processed/ultra-processed foods, which are frequently high in sodium, sugar, and trans-fat. The widespread availability of these products has contributed to a nutrition transition for many countries, particularly in low- and middle-income countries, from undernutrition to overweight and obesity, as well as increased diet-related noncommunicable diseases, such as cardiovascular disease, diabetes, and cancers. Unhealthy diets now contribute to almost 8 million deaths each year (GBD 2019). Diets high in sodium, trans fat, and sugar-sweetened beverages and diets low in fresh or minimally processed foods such as vegetables, fruits, legumes, and whole grains contribute significantly to this burden. High sodium consumption alone leads to nearly 1.9 million deaths each year. Policy interventions are needed to curb the rising health burden and premature mortality caused by increasing processed food consumption.

How does your proposition address the problem?

As availability and consumption of packaged and processed/ultra-processed foods increase, governments have an opportunity and responsibility to ensure that consumers have access to a healthy diet. Government-led reformulation of packaged food allows governments to set targets for key categories of packaged food to limit the amount of nutrients, such as sodium, sugars, and trans-fat, permitted in packaged food products. This strategy changes the packaged food environment without requiring consumer action or even knowledge, thus making healthier choices the default. While mandatory targets are preferred, many countries have set voluntary targets as well.

Packaged food targets have most commonly been set for sodium. [As of 2019](#), 57 countries had set limits for sodium in at least one key packaged food category. Only nine countries have set mandatory targets for multiple categories, demonstrating a need for further action in this area. The World Health Organization recently released global sodium benchmarks for different categories of packaged foods in May 2021 to guide countries and industry in implementing best practice sodium targets. The Pan American Health Organization will similarly release updated regional sodium targets for packaged foods in 2021.

Targets have also been set to reduce sugar in packaged foods by a smaller number of countries. For example, the [UK](#) set voluntary targets in 2016 to reduce the overall sugar content of the food products that contribute the most sugar to children's intakes by 20% by 2020, and the [National Salt and Sugar Reduction Initiative in the United States](#) released revised voluntary targets for sugar in 2021 to promote gradual, achievable, and meaningful reductions in sugar content in packaged foods and beverages.

Mandatory limits on industrially produced trans-fat to 2 grams per 100 grams of total fat in all foods (including packaged foods), is a global best practice and has been adopted by over 40 countries globally and is in line with government-led packaged food reformulation.

Is this a new solution or an existing solution that needs scaling?

This is an existing solution that needs scaling.

Which organisation/s, institution/s or groups of individuals are associated with the solution?

[World Health Organization \(WHO\) headquarters](#)

[Pan American Health Organization \(PAHO\)](#)

[Resolve to Save Lives, an initiative of Vital Strategies](#)

[World Action on Salt, Sugar, and Health \(WASSH\)](#)

[The George Institute for Global Health](#)

What is the scientific evidence that supports your proposition?

There is strong evidence that comprehensive target setting for categories of packaged foods effectively reduces the sodium content in processed foods. Forty-one countries have set voluntary or mandatory targets for packaged food, with [many reporting reductions in salt levels in a variety of product categories](#). For example, [an evaluation in Argentina](#) found that more than 90% of the products included in the law were found to be compliant. Further evidence demonstrates that target-setting can lead to meaningful reductions in sodium intake. For example, as a result of the voluntary targets set for 85 food categories by the United Kingdom in 2005, adults' [salt intake decreased](#) by approximately 15% between 2003 and 2011, with additional decreases in average blood pressure in the population and deaths from CVD.

Reformulation of processed food to contain less sugar has been implemented less frequently, but evidence from modeling studies supports the effectiveness of this strategy on achieving reductions in [added sugar intake](#) as well as population health benefits, [such as reduced obesity](#) and [obesity related noncommunicable diseases](#).

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

This idea is global in scope: All countries can benefit from setting targets for key categories of packaged food to limit the amount of sodium, sugars, and trans-fat permitted in packaged food products. Target setting is typically implemented at the national level, although regions may also set targets for packaged food, for example, as seen previously in the Americas region.

Who are the main actors that would put this action into place?

Policymakers (government)

Public Health Authorities

Private sector

Source and process

- Funke Ajenikoko, Laura Cobb, Nicole Ide, Lindsay Steele, Resolve to Save Lives, an initiative of Vital Strategies

Solution 5.3.- Emphasis on appropriate food processing in all food and nutrition policies

What problem is your proposition addressing?

Most foods consumed today are processed in some way. But while many types of food processing contribute to healthy diets from sustainable production systems, others do the opposite¹. As set out by the NOVA food classification system, at one extreme, there are minimal processes that prolong the duration of whole foods such as drying grains, pulses and nuts, grinding grains into flour and pasta, chilling or freezing fruits and vegetables, pasteurizing milk, and fermenting milk into yogurt. At the other extreme are a sequence of industrial processes which convert a few whole foods into chemically modified food substances and formulate them with a myriad of additives to make products with highly attractive or even quasi-addictive sensory properties identified as ultra-processed foods².

How does your proposition address the problem?

The UN Food Systems Summit should urge:

- International and national health and food and nutrition authorities to review their dietary guidelines documents to assure that these emphasize both the preference for fresh or minimally processed foods and the avoidance of ultra-processed foods, in line with guidelines developed for example by the Pan-American Health Organization³ and by Brazil⁴, Uruguay⁵ France⁶ and Israel⁷;
- National governments to implement fiscal and other statutory instruments, marketing regulation, front-of-pack labelling, and food procurement policies designed to promote a rich variety of fresh or minimally processed foods, and to discourage consumption of ultra-processed foods, as now done by several countries^{8,9};
- The food manufacturing industry to develop or improve processing methods that prolong the duration of whole foods and make their culinary preparation easier, but ultra-processed foods should be replaced with processed or preferably minimally processed foods¹⁰.

Is this a new solution or an existing solution that needs scaling?

Existing solution that needs scaling, as described above.

Which organisation/s, institution/s or groups of individuals are associated with the solution?

The centres of research excellence headed by the signatories of this proposal, among others.

What is the scientific evidence that supports your proposition?

Evidence supporting fresh or minimally processed foods as the basis of healthy diets from sustainable production systems is abundant and has been known for a long time. But, in the last decade, analyses of national dietary surveys and a series of experimental studies have made clear that high consumption of ultra-processed foods drives gross nutrient imbalances in the diet, reduces intake of health-protective bioactive chemical compounds, increases intake of chemical compounds that act as endocrine disruptors or induce pro-inflammatory microbiomes, increases glycaemic responses and the energy intake rate, among several

other harmful effects^{11,12}. In the same period, findings from time-series food sales studies^{13,14}, meta-analyses of large cohort studies^{15,16}, and a randomized controlled trial¹⁷ when taken together show that increasing ultra-processed food consumption is a major contributor to the present pandemic of obesity, diabetes, and other diet-related non-communicable diseases, including in children¹⁸. There is also mounting evidence of the harmful effects of ultra-processed food on the environment, through carbon and water footprints and agro-biodiversity loss^{19,20}.

Is this idea applicable to a particular geography, demography, landscape or other setting?

These proposals are applicable in high-income countries where UPF consumption is already very high, and especially in low and middle income countries, where UPF consumption is rapidly increasing and displacing the consumption of minimally-processed foods and traditional dietary patterns.

Who are the main actors that would put this action into place?

Relevant UN agencies, national governments, national health and food and nutrition authorities, and the food industry, as above, plus professional, public interest and citizen action groups.

Source and process

Barry Popkin, University of North Carolina; Carlos Monteiro*, University of Sao Paulo; Christopher Millett, Imperial College, London; Gyorgy Scrinis, Melbourne University; Marion Nestle, New York University; Mark Lawrence, Deakin University. *AT2 Leadership Team member.

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Gap 6: Government policy/legislation

Solution 6.1- Empowering and mobilizing consumers within food systems to deliver sustainability

What problem is your proposition addressing?

Only 53% of countries are fulfilling the UN Guidelines on Consumer Protection ‘priority areas of essential concern for the health of the consumer’ (Consumers International Global Member Survey 2020). Only 30% of countries have a sustainable consumption plan. Few countries engage consumers and consumer rights into the food system in a coherent manner. Policies, practices and institutions which empower consumers and consumer rights are siloed, under-resourced, and inadequately enforced, and consumer engagement as a force for innovation is under-utilised. As a result, consumers are distrustful of change, disengaged from behavioural changes needed for net zero, and under-served by the marketplace.

How does your proposition address the problem?

Consumers who are more empowered and engaged in the future of food systems will have a greater stake in building this future. Our solution is to strengthen the voice of consumers in the development of healthy and sustainable food systems, and to reinforce the levers of consumer protection and empowerment as a means for food systems transformation. This includes:

1. Strengthening the role of consumers and consumer rights in policy-making and standard-setting.
2. Creating institutions and mechanisms which effectively identify and address consumer harms.
3. Incubating and scaling-up sources of innovation from consumer empowerment and engagement (e.g. data stewardship, product design, and supply chain solutions).

We need to ensure that consumer voices are heard in national, regional and international decision-making on food systems. Policies and standards that are informed by a strong and independent consumer voice are more likely to enhance consumers’ motivation and capacity to change behaviours. Businesses need to see consumer rights and empowerment as a tool for product design, enabling more agile and innovative decision-making. Finally, siloed problem-solving needs to be replaced by a more holistic approach, for example by bringing consumers and farmers together in dialogue.

UNFSS brings together representatives from government, the private sector, and consumer advocacy, offering a unique opportunity to integrate consumer rights advocacy into policy and business design.

The summit will enable: (a) the collective consumer voice to reach new audiences and increase its influence over food value chains; (b) consumer organisations to connect with government representatives and decision-makers to help inform policy formation; (c) discussions between companies and consumer organisations on how to involve consumers in the design process; (d) the sharing of mutually beneficial solutions between consumers, farmers, and other food systems actors whose voices are not often included in policy conversations.

Is this a new solution or an existing solution that needs scaling?

Existing solution that needs scaling

Which organisation/s, institution/s or groups of individuals are associated with the solution?

[Consumers International](#), along with our membership of 200 consumer advocacy organisations across more than 100 countries. Consumers International is also co-lead of the UNEP One Planet Network's [Consumer Information Programme](#) (CI-SCP), which would be mobilised in support of the solution. We would also create a coalition of leaders from across business and government to explore this issue and build together.

What is the scientific evidence that supports your proposition?

This solution draws on substantial evidence and research on the capacity of consumers to support and strengthen the processes of policy-making, standard-setting, and innovation, as well as on the practical experiences of consumer organisations from across the world.

This includes evidence on the [capacity of consumers to drive food systems transformation](#), through engagement with both [national governments](#) and [private sector actors](#); on international standards and best practices regarding [consumer rights](#) and [consumer policy](#); on the challenges of [enforcing consumer protection](#) in countries across the world; and on practical evidence of how engaging consumers can strengthen food systems in areas ranging from [supply chain solutions](#) to [data stewardship](#).

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

Consumer rights and consumer advocacy are applicable and necessary in all contexts.

Who are the main actors that would put this action into place?

National governments, private companies, consumer advocates, individual consumers

Source and process

- Helena Leurent – Director General of Consumers International, AT2 leadership team member
- Consumers International's UNFSS Task Force, comprising representatives from: Consumer VOICE (India), Rwanda Consumer's Rights Protection Organization, Forbrukerrådet (Norway), Citizen Consumer and Civic Action Group (India), Consumentenbond (Netherlands), El Poder del Consumidor (Mexico), Instituto Brasileiro de Defesa do Consumidor (Brazil), Which? (UK), Consumers Lebanon, Federacja Konsumentów (Poland), and more

Gap 7: Increasing supply of non-meat protein and crops diversification

Solution 7.1- Diversify the Global Protein Supply via Alternative Proteins

What problem is your solution addressing?

[FAO projects](#) a 52% increase in the global demand for meat by 2050 relative to 2012, but there are not enough resources on our planet to meet this demand. It is well established that the diversification of protein production and consumption can achieve transformative results in planetary and human health, including [conserving land for habitat, preserving biodiversity](#) and mitigating climate change. Furthermore, alternative proteins (including meat, seafood, and dairy products) can help address key social and health challenges of the coming decades such as reducing the risk of bacterial contamination, improving animal welfare, [reducing antimicrobial resistance](#) as well as [risks of another pandemic](#).¹⁹

While plant-based alternatives have started to flourish in a number of markets, accelerating the diversification of proteins that are appealing, accessible and affordable will be key to feeding 10 billion people within planetary boundaries by 2050. There are a wide range of 'game changing solutions' to achieve the required protein diversification and democratization globally, regionally, and locally. In order to enable dietary shifts, a large toolkit is required. Options include, but are not limited to:

- Plant-based and algae-based protein that mimic the taste and texture of their animal-based analogues. This makes it easy to integrate into daily life without the need to acquire new skills or change cooking behaviour, as they can easily be used in traditional cuisines.
- Fermentation-derived proteins created via bacteria and fungi used as 'hosts' to produce different types of proteins from various substrates such as CO₂ and sugar.
- Cultivated meat, which is real animal meat cultivated directly from animal cells.

To increase the diversity, availability, accessibility, and affordability of alternative proteins while ensuring that they are healthy and contribute to achieving rapid progress on biodiversity loss and climate change, progress is needed across stakeholders on a number of issues including science-based targets, regulation and policy-making, research, as well as targeted investment.

How does your proposition address the problem?

The proposed game changer aims to accelerate the scale up of alternative proteins by:

- 1) Building evidence on science-based targets, pathways, key challenges and opportunities;
- 2) Developing strategies to scale up alternative protein production and consumption; and
- 3) Mobilizing cross-sector alliances to deploy these strategies at global and local levels.

Building evidence and learning from existing as well as new research and development efforts touching on pathways, key challenges and opportunities

¹⁹ This proposal recognizes that a diversification of proteins should include a supply of protein-rich crops such as legumes, potentially complemented by limited quantities of animal products for all, and the alternative proteins noted in this proposal.

Protein diversification will vary based on local contexts.²⁰ 'Protein pathways' thus need to be developed that include specific targets, suitable product portfolios, regulatory and social barriers to overcome, and solution spaces at the global, regional and country levels. This will allow each stakeholder group to tailor its efforts and activities towards successful alternative protein solutions – in the form of adapted regulatory and policy frameworks, adapted investments, adapted communication, etc.

Developing strategies to scale up alternative protein production and consumption

Based on the findings of the first step described above, key stakeholder groups will need to develop strategies to adapt and tailor their efforts towards various alternative protein solutions by:

- Investing in open-access R&D to create new markets for entrepreneurs and farmers, including indigenous and women farmers, and offer affordable nutrition at scale.
- Providing infrastructure & workforce development loans (including support for re/upskilling of workforce to adapt to new production methods), debt-based financing or production purchase guarantees to incubate startups (prioritizing those in LMICs) and accelerate take-up.
- Developing science-based, agile guidance such as in the form of an ESG scorecard for all types of proteins, to facilitate decision-making by investors, food value chain companies & civil society.
- Developing favourable regulatory, labelling and marketing rules, allowing alternative proteins to be desirable, affordable and accessible, and not impede market entry for alternative proteins.

Mobilizing cross-sector alliances to deploy these strategies

Cross-sector alliances will need to be mobilized at the global, regional and local levels, to deploy the strategies identified in the second step described above.

Is this a new solution or an existing solution that needs scaling?

Existing solution

Which organisation/s, institution/s or groups of individuals are associated with the solution?

World Business Council for Sustainable Development (WBCSD), The Good Food Institute (GFI), World Resources Institute, CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), Compassion in World Farming, Brighter Green.

What is the scientific evidence that supports your proposition?

- See references embedded throughout plus:
- Clark, MA, et al. 2020. Global food system emissions could preclude achieving the 1.5° and 2°C climate change targets. *Science* 370, 6517, <http://doi.org/10.1126/science.aba7357>
- World Economic Forum. (2019). Meat: The Future A Roadmap for Delivering 21st-Century Protein. http://www3.weforum.org/docs/WEF_White_Paper_Roadmap_Protein.pdf
- Mertens, E., Biesbroek, S., Dofková, M., et al., 2020. Potential Impact of Meat Replacers on Nutrient Quality and Greenhouse Gas Emissions of Diets in Four European Countries. *Sustainability* 12, 6838. <https://doi.org/10.3390/su12176838>

²⁰ E.g., crops from local agricultural producers used as inputs, product types that suit local preferences and are easily integrated into local cultures and traditions

- Santo, R.E., Kim, B.F., Goldman, S.E., et al., 2020. Considering Plant-Based Meat Substitutes and Cell-Based Meats: A Public Health and Food Systems Perspective. *Front. Sustain. Food Syst.* 4, 1–23. <https://doi.org/10.3389/fsufs.2020.00134>
- Khan S, Loyola C, Dettling J, Hester J, Moses R., 2019. Comparative environmental LCA of the Impossible Burger with conventional ground beef burger. Quantis USA and Impossible Foods. <https://impossiblefoods.com/mission/lcaupdate-2019/>
- CE Delft, 2021. LCA of cultivated meat. Future projections for different scenarios. <https://cedelft.eu/publications/rapport-lca-of-cultivated-meat-future-projections-for-different-scenarios/>

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

This is globally applicable because it builds on local cultural and social assets. It is relevant to the global South and global North, where most of the alternative protein technologies have so far been developed.

Who are the main actors that would put this action into place?

This is a multisector initiative requiring the action of the following actors: citizens and consumers, NGOs, academia, government, businesses, media, donors and investors.

Source and process

Multiple proposals submitted via wave two of solution generation process combined by:

- Emily Hennessee, **The Good Food Institute (GFI), Innovation Lead for AT#2**
- Emeline Fellus, **World Business Council for Sustainable Development (WBCSD), AT#2 Leadership Group member**

Reviewed by:

- Dhanush Dinesh, CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)
- Adrian Leip, European Commission, Joint Research Centre (JRC)
- Angela Wright, Chief Scientific Adviser, Compassion in World Farming
- Carol McKenna, Special Advisor, Compassion in World Farming
- Mia MacDonald, Executive Director, Brighter Green, and deputy co-lead, WS1 of UNFSS AT2

Solution 7.2. - A consumer driven value chain framework for responsible meat **The Responsible Meat (ReMI) Initiative**

What problem is your proposition addressing?

Though we support the transition to alternative (more sustainable) forms of protein, this will not happen instantaneously. [FAO projects](#) a 52% increase in the global demand for meat by 2050 relative to 2012. In this context it is urgent and critical to accelerate a parallel shift, whereby the meat that will be consumed now and in the future is responsibly produced, accessible and consumed as part of a sustainable food system.

How does your proposition address the problem?

The proposed game changer aims to develop a collaborative, transferrable model (initially using the pork value chain as the vehicle) that enables meat value chains from producers to consumers to recognize and optimize sustainability value – across key sustainability criteria including environmental performance, working conditions, and animal welfare.

Empowered citizen consumers offer a huge lever for change in the meat value chain. Market signals from consumers demanding more sustainable products could trigger a significant shift in industry practice along the value chain. The ReMI initiative will develop business guidance on consumer demand for responsibly sourced products.

As a pre-requisite for such initiative to succeed, the meat sector urgently needs a definition of sustainability that is visible and traceable all the way along the value chain to consumers. A joint definition of sustainability performance will thus be established from farmers to processors and the consuming component of the value chain (food service, retail, consumers). In addition, partnerships along the value chain and beyond will be essential in taking collective responsibility for sustainability and health impacts and in adopting collaborative action. The ReMI initiative will establish a number of cross-value chain workshops to improving communication and cooperation between consumers, farmers, businesses, civil society organizations and Governments.

Is this a new solution or an existing solution that needs scaling?

We need to capitalize on the successful development of production standards such as organically produced foods, and Fairtrade; scaling the ReMI initiative into a holistic framework (covering environment, social impact, and animal rights) for meat value chains.

Which organisation/s, institution/s or groups of individuals are associated with the solution?

NGOs: The World Business Council for Sustainable Development (WBCSD), World Animal Protection, WWF, Forum for the Future, The Center for Food Integrity, Frej

Corporates: Danish Crown, Evonik, Ikea, ADM, Bayer, Buhler, Compass Group, C.P. Group, DSM, Maple Leaf, Protix, Rabobank, Tesco

What is the scientific evidence that supports your proposition?

Due to the size and influence of the global meat sector, even small changes have the potential for considerable aggregate positive impact- [WBCSDs protein pathways report](#) (2020) for example reveals potential GHG savings of 1.3-1.4gt from changes in ruminant productivity and animal feeding practices.

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

Primarily applicable to more economically developed countries all over the world, with an aim to scale up to other countries gradually.

Who are the main actors that would put this action into place?

- Meat value chain businesses; including producers, slaughterhouses, processors, and retailers.
- Consumers
- Regulators and policymakers

Source and process

- Emeline Fellus, **WBCSD and AT2 Leadership Group Member**

Solution 7.3. - Staple crops diversification

Beyond the “Big 5”

What problem is your proposition addressing?

Food systems heavily rely on 5 key commodities (wheat, rice, maize, potatoes, and soy). The top three account for an estimated 42.5% of the world's calorie supply. The figure is much higher in developing countries, e.g., in many parts of Asia, rice can provide 80% of caloric intake. Dependence of food systems on very few crops is associated with a wide range of risks in relation to lack of nutrients and associated negative health outcomes, and to decreased climate and economic resilience. Today the biggest part of the staple crops entering global trade and consumed worldwide, comes from 65% of the cultivated land which is owned by 1% of farms.

Is this a new solution or an existing solution that needs scaling?

Diversifying staples, due to their dominance, and if achieved with the right foods, can have huge impact on nutrition/health, the environment and farmer resilience. The proposed initiative recognizes that to successfully bring on the market other major staples, we should focus on only one or two crops at a time. This is because to be a major staple, crops need to have well developed value chains and be established global commodities. It will require dedicated focused efforts to achieve this. Millets (which were broadly defined to include sorghum) are selected as the first crops to diversify staples because they were the traditional staples across much of Africa and Asia and fit the criteria of a smart food – good for you (highly nutritious and targeting some of the biggest nutrition and health needs), good for the planet (environmentally sustainable) and good for the farmer (climate resilience). It is also recognized that this needs efforts from fork to farm, starting at the consumer and food processor end to drive awareness and demand for the selected foods.

Which organisation/s, institution/s or groups of individuals are associated with the solution?

The proposed solution draws on the experience of the Smart Food global initiative, and of the convening power of the OP2B and WBCSD business groups.

It is jointly proposed by:

- [One Planet Business for Biodiversity \(OP2B\)](#)
- The [FReSH project \(Food Reform for Sustainability and Health\)](#) of the World Business Council for Sustainable Development (WBCSD)
- [Smart Food initiative](#), led by an Asian-African Executive Council: International Crops Research Institute for the Semi-Arid Tropics ([ICRISAT](#) – host organization); Forum for Agricultural Research in Africa ([FARA](#)), the West and Central African Council for Agricultural Research and Development ([CORAF](#)), the Food, Agriculture and Natural Resources Policy Analysis Network ([FANRPAN](#)), the Asia-Pacific Association of Agricultural Research Institutions ([APAARI](#))

What is the scientific evidence that supports your proposition?

There is a large body of scientific evidence showing that a food system relying on a few staple crops causes several nutritional, environmental, social and economic disruptions. There is indeed a strong association between dietary diversity, particularly micronutrient density of the diet, and nutritional status. Research has also demonstrated that crop diversity provide yield stability at country level which is equivalent to the benefits of irrigation.

- Food systems heavily rely on five key commodities (wheat, rice, maize, potatoes, and soy), with the global calorie production concentrated around a limited set of commodity crops grown using highly intensive methods (Foley et al., 2011).
- Intensive crop production of maize, rice and wheat has almost doubled over the past 50 years (Traoré et al., 2012). Today, these three commodities account for an estimated 42.5 percent of the world's calorie supply. It is much higher in developing countries, e.g. in many parts of Asia rice alone can provide up to 80% of caloric intake (Awika, 2011).
- Over the last decades, massive economic incentives have been deployed for the expansion of a few staple crops, resulting in lock-in effect that hinders the development of crops other than the traditional 'Big 5' ones dominating our food system (Gladek et al., 2017).
- There is a strong association between dietary diversity, particularly micronutrient density of the diet, and nutritional status (Hoddinott & Yohannes, 2002; Moursi et al., 2008).
- A large body of evidence shows that many plant species are better adapted to their local environments, and therefore more resilient to local environmental pressures than foreign ones (Becker et al., 2006; Bucharova et al., 2017; Padhee, n.d.; Raabová et al., 2011).
- Crop diversification enhances biodiversity, pollination, pest control, nutrient cycling, soil fertility, and water regulation without compromising crop yields (Tamburini et al., 2020)..

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

- Global relevance: for creating new commodity and food markets that have a lower carbon footprint and highly nutritious.
- Developing country relevance: as diversifying staples, typically 70% of a meal in developing countries, will have major impact on diet-based nutrition and health.
- Drylands globally: which provide 60% of the world's food production, will have the biggest benefits for environmental sustainability and adaptation to climate change.

Who are the main actors that would put this action into place?

All players across the value chain have a pivotal role to contribute to staple crops diversification.

The objective of this initiative is to mobilize cross-sector alliances to deploy these strategies to shift production and consumption into the right direction.

- Business leadership - from farmers to input providers, traders, manufacturer and retailers - is needed to identify solutions for such diversification at production, trade, procurement and consumption levels, creating new markets and business opportunities that can align with and contribute to the UN Sustainable Development Goals (SDGs).
- Policy makers are indispensable to create a minimum a level playing field, and preferably an incentivization fostering diversification of the "Big 5" to alternative staple crops to ensure local market development. It will also be critical for

governments to develop policies to support the true value of food that would foster crops providing better health and resilience benefits.

Source and process

- Joanna Kane-Potaka, Smart Food, ICRISAT
- Florence Jeantet, Managing Director, OP2B
- Emeline Fellus, Director, FReSH, WBCSD – AT2 Leadership Group Member

Gap 8: One Health

Solution 8.1- Antimicrobial resistance (AMR) – The silent pandemic

Engaging globally to combat AMR via One Health approach in order to address transnational and multi-sectoral nature of this threat

What problem is your proposition addressing?

AMR presents a serious health, social and economic burden. It is estimated to be responsible for 700,000²¹ deaths per year globally. Inaction is projected to cause millions of deaths globally: it has been estimated that AMR might cause more deaths than cancer²² by 2050. Apart from the human suffering caused by that development, AMR also pushes up the cost of treatment and diminishes productivity due to illness. The World Bank²³ has warned that, by 2050, drug-resistant infections could cause global economic damage on a par with the 2008 financial crisis. In the high AMR-impact scenario, the world will lose 3.8 percent of its annual GDP by 2050, with an annual shortfall of \$3.4 trillion by 2030²⁴. AMR also threatens the achievement of several of the United Nations' Sustainable Development Goals. Additionally the development and spread of antimicrobial resistance in the environment is of growing concern²⁵.

At the same time, the discovery, development, manufacture and marketing of new antimicrobials has significantly slowed down in the past 20 years. A sustained One Health response with a shared vision and goals is essential to tackle AMR and achieve the Sustainable Development Goals. It is important to reduce the use of antimicrobials and combat the rising tide of antimicrobial resistance, where misuse and overuse of antibiotics are rendering standard treatments ineffective and once treatable infections can now kill.

How does your proposition address the problem?

This proposition addresses antimicrobial resistance through a One Health approach including different elements building towards enforcing global unify response to this slowly but constantly raising threat caused by overuse and misuse of antimicrobials in human, animal and plant sectors.

Good hygiene and biosecurity measures as well as strong environmental controls need to be implemented at scale, from farm to fork, as well as in human health systems.

These can be done through:

- updating of the 2015 Global Action Plan under the leadership of the Tripartite Plus in order to cover all the One Health dimensions: public health, animal health and welfare, but also plant health and the effects of the release of antimicrobials into the environment and their contributions to the global spread of AMR implementation of AMR National Action Plans. Major obstacles to change behaviours are lack of awareness, resources, capacity and incentives. Collaboration between sectors is

²¹, ² https://amr-review.org/sites/default/files/160525_Final%20paper_with%20cover.pdf

²³ World Bank, 2016, 'Drug-Resistant Infections: A Threat to Our Economic Future', Washington, DC

²⁴ <http://documents1.worldbank.org/curated/en/323311493396993758/pdf/final-report.pdf>

²⁵ <https://www.unep.org/explore-topics/chemicals-waste/what-we-do/emerging-issues/antimicrobial-resistance-global-threat>

required to ensure that strategies to implement sustainable changes take into account the needs and constraints of each sector.

- prudent use of antimicrobials in food production is essential to minimize AMR in all foods. The “One Health” approach is key to achieve these targets. This interdisciplinary way of working ensures that AMR is mitigated through communication and cooperation between multiple sectors, and is highly scalable to ensure local, national and international needs.
- surveillance of AMU and monitoring of AMR in order to gain knowledge on the trends and impact concerning the risk posed to human health by foodborne AMR based on already existing tools like Danish “One Health” monitoring programme which serves as an important tool when identifying areas of concern and where efficient action can be taken.
- supporting the translation of policies and objectives into evidence-based practices towards sustainable solutions with a particular focus on the challenges in low- and middle-income countries as pursued by the International Centre for Antimicrobial Resistance Solutions (ICARS)
- developing new treatments for drug-resistant infections that pose the greatest threat to health as supported by the Global Antibiotic Research and Development Partnership (GARDP)
- the development and implementation of international standards and guidelines by Codex, OIE and IPPC are prominent examples of these ongoing efforts on the fight against AMR;
- strengthening AMR global governance structures, including the Global Leaders Group (GLG), Independent Evidence Advisory Panel (IPEA) and soon to be established Partnership Platform for Action against AMR;

Is this a new solution or an existing solution that needs scaling?

An existing solution that needs scaling.

Which organisation/s, institution/s or groups of individuals are associated with the solution?

Governments, relevant civil society organizations and initiatives, educational institutions and academia, international organisations and forums, including WHO, FAO, OIE, UNEP, G7, G20.

What is the scientific evidence that supports your proposition?

Antimicrobial resistance is well known and recognised as a global threat²⁶ that needs to continuously be addressed by international fora. The COVID-19 pandemic has shown the ease with which infections can spread, threaten global health security and destabilize economies, lives and livelihoods. As a present and growing pandemic, AMR may be considered a central part of future pandemic preparedness, and a topic relevant for the proposed Pandemic treaty discussions.

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

²⁶ <https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance>

The idea is global and should be adapted accordingly to the needs of the region or a country.

Who are the main actors that would put this action into place?

Policymakers (governments), civil society organisations, veterinarians, doctors, farmers.

Source and process

Proposals submitted by the Tripartite, the European Commission, and Denmark for wave 2. All proposals are not necessarily supported by all parties.

Solution 8.2. - Coordinated action to combat AMR

Working together to enhance capacities and catalyse investments for One Health/AMR National Action Plans and concrete implementation

What problem is your proposition addressing?

Antimicrobials play a crucial role in the health of humans, animals and plants, as well as in food safety and food security. However, antimicrobial resistance is an ever-increasing global threat, driven by overuse and misuse of antimicrobials in human, animal and plant sectors. Good hygiene, biosecurity measures and strong environmental controls are effective counter-mechanisms, but must be implemented at scale, from farm to fork, as well as across human health systems.

Most countries have developed multisectoral AMR National Action Plans (NAPs) to address AMR and many have regulations to control antimicrobial use. Implementation at scale is however a major challenge, compounded by lack of awareness, resources, capacity and incentives to change behaviours. Collaboration between sectors is required to ensure that strategies take into account the needs and constraints of each sector to effect sustainable change.

Given the stark reality that global food production needs to increase to meet a growing population (predicted to reach almost 10 billion by 2050), combined with the fact that 75% of people in extreme poverty live in rural areas and depend on agriculture for their livelihoods, measures to transform our food systems to become more sustainable and resource efficient are pressing. This includes measures to curb the risk of overuse and implement responsible and prudent use of antimicrobials in animal health, plant health and agriculture production in order to preserve the possibility of curing infectious diseases and co-manage our One Health for the future.

Addressing AMR as a component of the sustainable food production and food hygiene systems, and actively engaging with all stakeholders will help develop practices that strengthen hygiene and biosecurity measures from farm to fork. Understanding the opportunities and barriers to changing behaviours and supporting responsible use of antimicrobials will contribute to sustainable food production and livelihoods. This requires concerted coordinated action at all levels, from local to global, including support from the set of AMR Global governance structures, to support advocacy and multistakeholder momentum.

How does your proposition address the problem?

The Global [AMR Multi-Partner Trust Fund](#) (AMR MPTF) is proving a valuable vehicle to support coordinated action on AMR. In addition, the [AMR Global Governance Structures](#), including the Global Leaders Group (GLG), Independent Panel for Evidence on Action against AMR (IPEA) and the Public Private Partnership Platform on AMR are also key components to effecting change.

The UN Secretary-General, has firmly recognized the AMR MPTF as the mechanism to ensure coordinated development funding to the Tripartite organizations (FAO, OIE and WHO). The core aim of which is to support countries in implementing their action plans against AMR and counter the global emergence and spread of resistance. The UNSG also called for the setup of AMR Governance Structures to advocate, bring the evidence and enable a movement for change across a broad spectrum of actors.

Through the AMR MPTF, the Tripartite, alongside a key group of development partners (The Netherlands, Sweden and UK Fleming Fund) is addressing AMR as a component of a sustainable food production system and supporting the multisectoral delivery of a One

Health NAPs across 11 countries *focusing support to low and middle income countries).
The expected results desired impacts include:

Expected Results	Impact
<ul style="list-style-type: none"> • Risks and benefits related to AMU and AMR reflected in national budgets and in development/ multi-lateral partner sector-wide investments • Increased comprehensiveness, quality and intersectoral collaboration of the policy dialogue and practice • Evidence based/representative data on AMR/AMU improved for policy-makers and sectors implementing AMU best practices • Use of antimicrobials reduced, and used prudent in all sectors of the One Health spectrum • Improved understanding of AMR risks and response options by targeted groups • Multi-sectoral coordination strengthened at national level • Momentum on Global AMR Agenda sustained 	<ul style="list-style-type: none"> • Countries make explicit commitments (policies, investment plans, programmes, legal frameworks, resources allocation) on AMR based on evidence and quality data • Responsible and prudent AMU and associated practices sustainably improved in critical sectors • Multi-sectoral approach to the AMR agenda strengthened globally

Is this a new solution or an existing solution that needs scaling?

This is an existing solution in need of upscaling, aiming to substantially scale up support to a broader spectrum of countries.

Which organisation/s, institution/s or groups of individuals are associated with the solution?

- Tripartite FAO, OIE, WHO
- AMR Global Leaders group
- UNGA Call to Action on AMR specifically flagged the need to “ Ensure a strong and relevant AMR focus as part of the work for the UN food systems summit in 2021,”
- AMR Multi-Partner Trust Fund Resource partners (Sweden Netherlands and UK Fleming Fund)
- Multipartner Trust Fund Office (MPTFO)– Fund Administrator

What is the scientific evidence that supports your proposition?

- 3.8 percent loss in the world’s annual gross domestic product (GDP) predicted by 2050, in a high AMR-impact scenario (World Bank 2017)
- 133 countries report quantitative data on the intended use of the antimicrobial agents in animals to OIE (OIE 2021)
- 107 countries provide surveillance data on AMR and antimicrobial consumption in humans to WHO (WHO 2021)
- 143 countries have developed National Action Plans on AMR (WHO 2021)

One of the keys to implement National Action Plans on AMR is to have a functional Multi-Sectoral coordination group on AMR at the country level. The AMR MPTF provides an effective channel to finance cross sectoral support to One Health responses in low and middle income countries and at global level. Addressing AMR as a component of the

sustainable food production and food hygiene systems, and actively engaging with all stakeholders is a proven means to develop practices that strengthen hygiene and biosecurity measures from farm to fork. Understanding the opportunities and barriers to changing behaviours and supporting responsible use of antimicrobials will contribute to sustainable food production.

In the first instance, the Tripartite with partners through the AMR MPTF will aim to scale up country and global operations, to broadly:

- Leverage the collective expertise of the Tripartite and its networks collaborating on a One Health approach to bring about change at global, regional and national levels
- Enhance lesson learning internationally and locally (what can work and why)
- Catalyze greater public and private investments in One Health, particularly at country level, including through International Financial Institutions, national budgets and private sector investments, among others

The Fund is already providing support to 11 countries and providing critical global backstopping support on areas including data and surveillance, legal frameworks, environmental components with UNEP and on monitoring and evaluation for change. Demand from the country level calls for the AMR MPTF to expand and to catalyze broader investments for the countries themselves.

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

Applicable to all regions and countries.

Who are the main actors that would put this action into place?

Policymakers (government), Private Sector, Civil Society, Public Health Authorities, Agricultural Extension services, Farmers/fisheries and Consumers (individuals)

Source and process

- Gunilla Eklund, Anna Strömgren, Sweden
- Rosa M. Peran i Sala, Netherlands
- Junxia Song (FAO), Olafur Valsson (OIE), Elizabeth Tayler (WHO), Tripartite Joint Secretariat (FAO, OIE, WHO)

Gap 9: The role of data sharing and transparency

Solution 9.1- Developing a best practice LCA to assess and compare the environmental and nutritional impacts of food

What problem is your proposition addressing?

Life Cycle Assessment (LCA) is an important tool that food system actors use to assess the environmental impacts of food items, and consumers and policymakers use to compare the sustainability of different foods and diets. However, LCA methodological issues are undermining the ability of consumers and other food system actors and policymakers to make robust, evidence-based choices to encourage sustainable food systems from healthy diets from sustainable production systems. Key problem areas include that most food item LCAs:

- only focus on one environmental impact, usually climate change contribution, and often do not include impacts for other environmental areas such as water use, which prevents LCAs from providing a clear picture of the overall environmental sustainability of food items;
- compare different food items on a mass or volume basis (e.g. tonne of GHG emissions per kg of unit product), which can mean the contribution of different foods to nutritional outcomes may be overlooked or mis-represented; and
- only use the climate change metric GWP100, which can underestimate the short-term and over-estimate the long-term global warming potential of short-lived gases such as methane (which is prevalent in ruminant livestock and rice production foods systems).

In addition, different indicators (with different levels of accuracy) are often used in LCAs to assess the same environmental impact, and results are often presented as a single integrated value. This makes it difficult to compare LCA impacts across similar and different food items, and over time.

How does your proposition address the problem?

This project will use research on ways to make LCA more robust and multi-dimensional to develop an internationally recognised best practice guide for assessing and comparing the environmental and nutritional impacts of different food items. The guide will:

- identify and propose solutions for the key LCA food item methodology issues;
- include recommendations on how to use LCA to represent a range of internationally agreed key environmental and nutrition impacts in a way that can be compared across food items common to diets across the world; and
- be developed by a group of independent internationally recognised LCA experts from a range of FAO member countries and be reviewed and published by the FAO.

This FAO-led approach to developing a best-practice LCA guide will gain the international recognition needed to encourage food system actors across the world to use more accurate LCAs to measure and compare environmental and nutrition impacts of food items. This will equip consumers and policymakers to make more robust, evidence-based choices to encourage sustainable food systems from healthy diets (and could be used as a tool to underpin several game changing solutions within AA2.1). Assisting food system actors and policymakers to make more sustainable and healthy choices will play a critical role in achieving the SDGs, especially the nutrition and environmental sustainability goals.

Is this a new solution or an existing solution that needs scaling?

While there is published research that outlines potential ways to address LCA methodological issues, there is no internationally agreed best-practice methodology for developing an environmental and nutritional LCA for food items. As a result, most food item LCAs do not address the key methodology issues identified in this paper. This project is unique in its aim to gain agreement about a best-practice LCA approach across researchers from a range of countries (who study a range of food systems and impacts) and in having this approach endorsed and promoted by the FAO. We consider it is important to use this new approach to successfully drive a global shift to consumers and other food system actors and policymakers using more robust and accurate environmental and nutritional information.

Which organisation/s, institution/s or groups of individuals are associated with the solution?

The FAO is leading this proposal with support from a group of approximately 30 researchers. The FAO short-listed researchers based on subject matter expertise (Food LCA, Environmental LCA, Food systems and Nutrition Science), and ensuring good gender balance and geographic representation. New Zealand has provided (and Ireland will soon give) funding to run the project, and each researcher is providing in-kind contributions (with the support of their host countries).

What is the scientific evidence that supports your proposition?

There is a large body of research which identifies the key LCA methodology issues and potential solutions outlined in this paper. Some of the key papers are referenced below.²⁷

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

This project will provide an LCA guide which could be used to assess the environmental and nutritional impacts of foods from a wide range geographies, landscapes and demographics i.e. to assess the impact of most meat (including livestock and fish), plant, and dairy products.

Who are the main actors that would put this action into place?

The FAO is leading this project and will be promoting and gaining buy-in for the research findings.

Source and process

- Don Syme, New Zealand (AT2 Leadership Team member)
- Jamie Morrison, FAO (AT2 Leadership Team member)
- Feedback from the AT2 Leadership Team members has indicated that the EU, Lucia Reisch, and Emiline Fellus would be interested to work on this solution.

²⁷ Nutritional LCA: [Heller et al., 2013](#); [Van Kernebeek et al., 2014](#); [Hallström et al., 2015](#); [Nemecek et al., 2016](#); [Hallström et al., 2018](#). GHG metrics: [IPCC, AR5](#); [UNEP, 2019](#); [Lynch et al., 2020](#); [Allen et al., 2018](#); [Cain et al., 2019](#); [Frischknecht and Jolliet, 2016](#); [Balcombe et al., 2018](#); [FAO, 2019](#); [Muñoz et al., 2010](#). Wider environment impacts: [Eme et al., 2019](#); [Payen et al., 2018](#); [van Dooren et al., 2018](#); [Bayart et al., 2010](#); [Strassmann et al., 2008](#); [Mottet et al., 2017](#); [Frischknecht and Jolliet, 2019](#); [Huijbregts et al., 2016](#); [Azevedo et al., 2013](#). LCA harmonisation: [Finkbeiner et al., 2006](#); [Poore and Nemecek 2018](#); [Drew et al., 2020](#); [Clune et al., 2017](#); [OECD, 2020](#).

We suggest that this proposal is merged with other key game-changing data improvement proposals. While making these LCA improvements will encourage consumers and other food system actors and policy makers to use more accurate nutritional and environmental data, there are also other key data improvements and programmes needed to encourage a global shift to using more robust and accurate information to encourage sustainable food systems from healthy diets.²⁸

²⁸For instance countries will need to also promote leading LCA research through platforms such as this [EU LCA initiative](#)

Solution 9.2.- A step change in the support provided by research and evidence to decision makers

What problem is your proposition addressing?

It is vital that policy makers are able to draw upon the best possible science and evidence when deciding on the steps needed for the fundamental transition of food systems. They also need to have confidence and trust in research findings:

- i) The necessary transition of food systems will present entirely new challenges for many policy makers. They will need to adopt a much broader and more integrated approach to food-system transition, in contrast to operating in silos as many have done in the past. They will also need to grapple with new trade-offs: balancing health implications, sustainability and the natural environment, jobs, equity, and protecting the poor.
- ii) Policy makers will need to engage with the complexity of food systems – which are both dynamic and comprising many interacting subsystems. Distilling this complexity down to clear policy decisions will present considerable challenges.
- iii) The necessary transformation of food systems is likely to be far reaching and potentially contentious – for example involving shifts in subsidies, taxation and regulation, and diets. Policy makers will need the strongest possible case to justify difficult decisions.

While there is already a great deal of science and evidence available from multiple sources, substantial problems remain. There are important gaps in the evidence base: for example, there remain very considerable uncertainties about what policy actions work best in the context of low- and middle-income countries (LMICs), and about the diets that people actually consume. Also the advice provided by different research groups can sometimes be conflicting, with the underlying reasons often buried in the detail of the work undertaken. There may also be a deficit of trust in some areas of research. This may be due to conflicting research messages, but also due to perceptions (real or imagined) of vested interests associated with research funding.

How does your proposition address the problem?

There are many ways to effect a step change in the science-policy interface (SPI). However, whichever is chosen needs to address three priorities:

- i) Establish and strengthen inter-governmental and global institutional mechanisms to better forge credible and authoritative consensus on scientific evidence, resolving controversies surrounding new research – *conflicting advice translates to indecision and ineffective policies*;
- ii) Improve the research performed so that it is more closely linked to the needs of policy makers, more streamlined and efficient, and with much better linkages across science regarding climate, natural resources, food, health, and nutrition – *'joined up' science is essential to inform multi-sectoral policies*;
- iii) Increase the legitimacy of scientific advice through transparency in a rigorous synthesis and assessment process which fully includes the perspectives and voice of low- and middle-income countries – *confidence in science will translate to science-led policies*. This goes far beyond the remit of any existing science advisory bodies for policy at national or international levels.

One particular approach to delivering the necessary improvements that has been mooted in recent years relates to the creation of an IPCC-like organisation for sustainable food systems (an 'International Platform for Food System Science – IPFSS'). This idea now gathering support from major stakeholders.

Is this a new solution or an existing solution that needs scaling?

The proposed new arrangements would be new, but would build on existing research, and the work of existing organisations. Their added value would lie in drawing these existing activities together so that they much better serve the needs of policy makers that are faced with planning and implementing the transition of food systems.

Which organisation/s, institution/s or groups of individuals are associated with the solution?

The idea for the IPFSS in particular, has been worked on in detail by an IPFSS Expert Group, which has been convened by the European Commission. This group has submitted a paper in support of this idea to Dr Joachim von Braun, the head of the UNFSS Science Group. (Note: the proposal contained herein is broadly consistent with that proposal).

What is the scientific evidence that supports your proposition?

The detailed justification for the need to improve the science-policy interface was developed in the Global Panel's 2020 Foresight report: Global Panel on Agriculture and Food Systems for Nutrition. 2020. *Future Food Systems: For people, our planet, and prosperity*. London, UK. This provides further references within its analysis and discussion.

Is this idea applicable to a particular geography, demography, landscape or other type of setting?

The idea is applicable to the totality of food-system transition post UNFSS. It has the potential to support policy making at all scales: global, regional, national and subnational. It will also relate to all parts of food systems, and have bearing on all actors, including: policy makers in the public and private sectors, international organisations, non-governmental organisations, researchers, donors and civil society.

Who are the main actors that would put this action into place?

The detail of the institutional arrangements, and who would put the action into place would need to be informed by international discussion. It is essential that a consensus develops on how to take this forward, and to that end, there is a clear case for the UNFSS to: i) explore practical options for improving science-policy interfaces (SPIs) relating to, and needed for, transformative food systems actions; ii) propose language that would entail a commitment to urgently establish enhanced SPI mechanisms post-Summit; and iii) identify adequate funding targets and mechanisms to allow for long-term functionality of enhanced SPI activities.

Source and process

The Global Panel on Agriculture and Food Systems for Nutrition.

Gap 10: Informal food vendors

Solution 10.1- Empowering the informal food sector to deliver healthy, safe, and affordable diets and support livelihoods and income in urban areas

What problem is your proposition addressing?

Urban residents in low- and middle-income countries primarily depend on informal vendors for daily food purchases. Informal markets are the key source of fresh foods (fruits and vegetables, blue foods, and animal source foods) for the urban poor. In addition, informal food trading and vending are the primary livelihood source for a large proportion of the urban population and play a particularly important role for women. Despite its importance for diets and income, the informal food sector faces significant challenges. Food in informal markets is often unsafe with high levels of contaminants and pathogens. The presence of hazards in informal markets are just one of the reasons why officials and planners often try to suppress this sector. Informal food vendors regularly face harassment and extortion by law enforcement officials. The challenges faced by vendors are largely due to the erratic governance of this sector.

The informal food sector has enormous potential to contribute to improving the nutrition, health, and livelihoods of the poor, but this potential is yet to be unleashed.

How does your proposition address the problem?

Our solution has two key components. **First, we will engage with and secure commitment from all actors overseeing urban informal vendors**, including relevant ministries as well as metropolitan and municipal governments. Specific actions will, among others, include: consolidate policies and regulations, identify where greater policy coherence is needed, and reform policies and regulations to balance vendors' right to livelihoods, on the one hand, and nutrition, public health, and food safety, on the other; develop transparency mechanisms (such as scorecards) that inform vendors how the operating licenses/fees they pay are used and what share are reinvested into infrastructure; identify market infrastructure deficiencies through scorecards and mapping in order to help municipal governments recognize where they need to target resources or where certain procurement practices (e.g., outsourcing trash collection to a private sector collector) are not working; map market and vendor locations and their accessibility to consumers to inform urban planning departments who oversee market upgrading initiatives; set up memoranda of understanding between municipal governments and street hawkers to allow for trading on certain streets at certain times of the week.

Second, we will support the formation of alliances between associations of informal food vendors, civil society actors, and consumer groups and use these as a platform to improve the healthfulness and safety of foods sold while maintaining affordability. Key areas of action include training, certification, and business and marketing interventions paired with provision of water and sanitation facilities. Vendors will be empowered with new knowledge and skills in business management, food safety, and nutrition and healthy diets; and will be certified when meeting all criteria. Communication training will help traders better articulate their needs/positions to urban governments and to the public via the media. Actions will be gender- and youth-sensitive and will pay particular attention to the challenging position of women and youth in the informal food sector.

Is this a new solution or an existing solution that needs scaling?

New solution

Which organisation/s, institution/s or groups of individuals are associated with the solution?

Submitting organization: International Food Policy Research Institute.

When selected, the game changing solution will be developed further by a consortium of organizations that may include the Global Alliance for Improved Nutrition (www.gainhealth.org), Women in Informal Employment: Globalizing and Organizing (www.wiego.org), the Milan Urban Food Policy Pact (www.milanurbanfoodpolicypact.org), the World Sustainable Urban Food Centre (cemas.global/en/) and the International Livestock Research Institute (www.ilri.org).

What is the scientific evidence that supports your proposition?

Notwithstanding the trend of supermarket expansion, urban residents in low- and middle-income countries depend heavily on informal vendors for daily food purchases. Key reasons include the accessibility and the greater affordability of foods given that informal vendors often sell in smaller quantities and on credit (1). In African cities up to 70% of households source food and meals from informal markets/vendors (2). In addition to being a key food supplier to the urban poor, the informal food sector is an important source of income, especially for women. Nearly 80% of the female African labor force works in the non-agriculture informal sector (3). Women are the primary sellers of street foods and perishable goods, such as fruits and vegetables (4–6).

Despite its importance for food security, diets, and income, the informal food sector faces several challenges. Partly due to the lack of clean water and sanitation facilities, the food sold in informal markets is often unsafe, containing high levels of contaminants and pathogens (7). Consumption of unsafe foods is responsible for 600 million foodborne illnesses and nearly 500,000 deaths yearly, with 98% of this burden in low- and middle-income countries (8); consuming unsafe foods reduces nutrient bioavailability and thus negatively affects nutritional status, a particular concern for children under 5 who carry 40% of the foodborne disease burden (8–10).

Informal vendors are often accused of violating food safety regulations and threatening public health; they fall victim to extortion and demands for bribes by police officers and other enforcement officials; they face arrests, confiscation of merchandise, demolition of stalls, physical harm, and forced relocation (11–13). Many of the challenges faced by informal food vendors are due to poor governance, which is a consequence of a lack cross-ministerial coordinating mechanisms and poor coordination and competition between oversight authorities at the national and municipal or metropolitan levels.

Efforts to support informal food markets and vendors (many of which are women) and improve the food safety and nutritional value of their products are critically important not only for their livelihoods but also to deliver affordable, safe, and healthy diets for the urban poor.

Is this idea applicable to a particular geography, demography, landscape, or other type of setting?

This idea focuses on **informal vendors** in **urban areas** in **low-and middle-income countries**.

Who are the main actors that would put this action into place?

The development and implementation of this idea will require close collaboration and coordinated action from **policy makers, cities, the private sector, civil society organizations, public health authorities, and consumers**.

Source and process

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