



SUSTAINABLE FOOD SYSTEM

**POLICY PAPER
2018**

TABLE OF CONTENTS

Foreword by the Task Force Chair, Luis Pagani.....1

Executive Summary3

Key Policy Recommendations and Action Plan.....5

Introduction to the Sustainable Food System taskforce.....12

Topic 1: Eradicate malnutrition, undernourishment and obesity 13

Topic 2: Ensure Environmental Conservation; Mitigation and Adaptation to Climate Change.....20

Topic 3: Foster Technology Development and Adoption28

Topic 4: Reduce Barriers to Global Food Trade..... 35

Topic 5: Minimize Food Loss and Waste43

Annex.....49



FOREWORD BY THE TASK FORCE CHAIR LUIS PAGANI

It is with great pride that we bring the B20 Argentina Policy Paper on Sustainable Food System (SFS) to the G20 Policy Dialogue process. The paper is the culmination of an intense period of constructive work, collaborative dialogue and consensus building regarding the policy recommendations and private sector initiatives that are needed to further the worldwide development of sustainable food system. This is both a central challenge for the support of human life in our planet, given the pressures to feed a growing population with a declining resource base, and a key pillar for the achievement of the 2030 Sustainable Development Goals (SDGs).

I would like to thank President Mauricio Macri of Argentina, holding the G20 Presidency in 2018, for introducing the global challenge of SFS as one of the three main priorities this year; B20 Chair Daniel Funes de Rioja for newly incorporating this important subject into the B20 agenda; as well as our SFS Task Force co-chairs, concept, knowledge and network partners, and business members – including senior business executives, business associations, international organizations – for their commitment, efforts and valuable contributions.

We identified five most important challenges facing the global food system, which are necessary for the G20 leaders to address: 1) eradicating malnutrition, undernourishment and obesity; 2) ensuring environmental conservation, mitigation and adaptation to climate change; 3) fostering technology development and adoption; 4) progressively eliminating barriers to global food trade; and 5) minimizing food loss and waste.

The effective response to these challenges requires progress in policy formulation at the international and domestic levels, a new positive agri-food trade liberalization agenda for the multilateral trading system, as well as public-private sector collaboration and multi-stakeholder partnerships.

We reached important conclusions regarding how to face these challenges and proposed policy recommendations.

However, we did not stop our engagement here. We as private sector representatives have committed to a number of transformative actions, complementing the policy recommendations to G20 leaders, so as to effectively contribute to solving the five main challenges identified.

I strongly believe that the contribution of the private sector is key both for the global development of sustainable food system and for the achievement of the 2030 SDGs and ensuring a more prosperous and inclusive future for people in the world.

At this time in the current world environment, as B20, we want to express our firm commitment to a multilateral and international trading system that is open, rules-based, and non-discriminatory, a system that should level the playing field for all countries and sectors in the world economy, including the agri-food sectors. We must

acknowledge that after 71 years of the initial GATT agreements, and 23 years since its transformation into the World Trade Organization following the conclusion of the Uruguay Round and the Agriculture Agreement, very little progress has been achieved regarding the commitment of an ongoing trade reform to incorporate the agri-food sectors into the rules and disciplines of free multilateral trade. This is a necessary condition for the sustainable growth of the world economy and, particularly, for the sustained growth and inclusive development of our region, Latin America, of Africa and parts of Asia. Protracted poverty, hunger and undernourishment will not be eliminated by 2030 otherwise. Business as usual is not an option anymore.

I honestly hope that the relevance of the challenge of enhancing the well-being of humanity and the conservation of our planet, plus our initial work resulting in a set of well-founded policy recommendations, collaborative public-private sector initiatives and private sector commitments, will ensure the SFS agenda's continuity in future G20 meetings as well as the continuity of this task force in future B20 meetings.

The world has agreed on a long-term agenda, the SDGs 2030, for global sustainable development, the elimination of poverty and hunger, and the integral improvement of people's lives and well-being. Its achievement faces several challenges. The main lesson learned is that the G20 process, and the dialogue with and among the engagement groups, is a key enabling institutional platform to deliver on this long-term sustainable development agenda.

Sincerely,

A handwritten signature in black ink, appearing to be 'Luis Pagani', written in a cursive style.

Luis Pagani

Chair of the B20 Task Force on
Sustainable Food System
President of Arcor Group

EXECUTIVE SUMMARY

In an era marked by volatility and uncertainty, the world prepares to feed a growing population with a declining resource base. Sustainably increasing production to levels required to ensure global nutritional security is one of today's world greatest problems.

According to United Nations data, by 2050 the world's population will reach 9.7 billion people, with growth and increased urbanization particularly pronounced in Asia and Africa¹. This demographic shift will directly affect consumption patterns, increasing demand for industrial food and value-added products. This growth comes at a time where substantial parts of the global population still experience food insecurity. With roughly 815 million people currently living under food insecurity, production must also increase to feed those that are already hungry. This food needs to be globally accessible and nutritious, with a particular focus to ensure healthy development early in life. UNICEF estimates that more than 150 million children experienced stunting in 2017, roughly 22 percent of children globally². The total number of chronically undernourished population in the world is estimated to have increased to 815 million (11% of world population) in 2016, up from 777 million in 2015. At the same time, the incidence of obesity is growing in virtually all regions of the world. As of 2017, there were approximately 600 million obese adults³. Additionally, obesity is associated with other diseases such as diabetes and congestive heart failure. Undernourishment, malnutrition and obesity are all critical challenges that create hardship throughout the world, reducing the quality of life for those affected, and increasing the economic costs to societies and governments.

Without action, increased production of food will drive additional use of critical environmental resources (e.g., water, land, carbon, etc.). Today the agricultural sector, broadly defined, accounts for 69 percent of water use⁴, 36 percent of land use⁵, and 20-24 percent of total greenhouse gas emissions⁶. Amidst global demographic growth and a changing global climate, it is imperative to turn the food value chain into a positive environmental actor that sustainably utilizes and restores natural resources. Climate change is already contributing to more frequent natural disasters that reduce food availability and generate price volatility. In order to continue feeding future generations, global food producers must broadly adopt sustainable agricultural practices to mitigate, adapt to and increase resilience to climate change. Many of these practices already exist and have demonstrated the potential to increase yield while decreasing the negative environmental impacts (e.g., soil conservation or carbon sequestration). In addition to broad global adoption of existing agricultural best practices, new and innovative technologies need to be developed and deployed across the food value chain to increase yields in a resource efficient way. The average annual yield growth of the last decade (around 1%) needs to increase to produce the food necessary to meet demand from the world's growing population⁷. New technologies (e.g., biotechnology, digital technology, etc.) will play key roles in increasing

¹ United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, Key Findings and Advance Tables. Working Paper No. ESA/P/WP.241.

² UNICEF/WHO/World Bank (2018). Joint Child Malnutrition Estimates, accessed June 7th, 2018, <https://data.unicef.org/topic/nutrition/malnutrition/>

³ Food and Agriculture Organization of the United Nations (FAO), IFAD, UNICEF, WFP and WHO. (2017). The State of Food Security and Nutrition in the World. Rome: FAO.

⁴ FAO (2017). "Water for Sustainable Food and Agriculture. A report produced for the G20 Presidency of Germany"

⁵ FAOstat database. Accessed May, 2018. <http://www.fao.org/faostat/en/#data/RL>

⁶ Smith P.; Bustamante, M.; Ahammad, H.; Clark, H.; Dong, H.; Elsiddig, E.A.; Haberl, H.; Harper, R.; House, J.; Jafari, M.; Masera, O.; Mbow, C.; Ravindranath, N.H.; Rice, C.W.; Robledo Abad, C.; Romanovskaya, A.; Sperling, F.; Tubiello, F. 2014, "Agriculture, Forestry and Other Land Use (AFOLU)"

⁷ FAO. (2017). The future of food and agriculture - Trends and challenges. Rome: FAO.

production yields and maximize resource efficiency to minimize environmental impact.

Alongside enhanced production, the global trade of food must function fluidly while minimizing waste to ensure food security. Global food trade has a critical role to play in feeding the world; by matching food supply to global demand, efficient markets ensure that food is accessible and properly priced across the world. Barriers to global food trade undermine gains from comparative advantage and discourage investment in food production and innovation. In addition to ensuring efficient markets across countries, food value chains must function more efficiently and reduce (or find alternative uses for) food that is lost or wasted. The UN estimates that one third of food is either lost in the pre-harvest, harvest, or processing stages or wasted by distributors and end consumers⁸. Minimizing loss and waste can be one of the most effective ways to achieve a more sustainable food system that provides food security in a resource-efficient way. Creating self-sustaining and efficient secondary food markets or circular economies can decrease the negative environmental and societal effects from food loss and waste.

Based on this context, the task force working group has focused on five primary issues for the G20 leaders to address: eradicating malnutrition, undernourishment and obesity; ensuring environmental conservation and mitigating and adapting to climate change; fostering technology development and adoption; minimizing food loss and waste; and reducing barriers to global food trade.

In planning public policy to address malnutrition, it is essential to consider instances of public-private cooperation and dialogue. Policy should aim to strengthen regulatory frameworks and promote nutritional and healthy lifestyle programs. B20 final recommendations involve reinforcing multilateral food regulatory frameworks, strengthening the role of the Codex Alimentarius as an internationally approved set of guidelines, promoting consumer education and developing food value chains that ensure food availability in developing countries.

G20 leaders should also develop policies, incentives and capabilities to encourage the adoption of new technologies and practices that increase sustainability and resilience of food chains. These should increase productivity and the efficiency of resources while minimizing loss and waste, mitigating climate change, and enhancing soil conservation and ecosystem services that sustain food production. Final recommendations include creating economic benefit systems that incentivize the efficient use of resources, financing the creation and adoption of new technologies, developing public-private partnerships to boost ecosystem management programs, investing in rural productive infrastructure and educating consumers to build responsible consumption habits.

The B20 remains committed to a multilateral trading system that is open, non-discriminatory, and rules-based. However, advances are required to help achieve SDGs throughout global food value chains. Business as usual is not an option. The trading system should progressively eliminate and correct barriers and distortions in global food and agricultural markets, enabling a greater integration of SMEs in developing countries into regional and global value chains. Final policy proposals regarding trade focus on the transparency of non-tariff measures and reducing non-tariff barriers, minimizing tariff barriers and distortive domestic support and promoting the harmonization of regulatory frameworks, following international science-based guidelines established in Codex and other multi-lateral avenues of consensus to prevent new

⁸ 12.3 Champions. 2017. "SDG Target 12.3 on food loss and waste: 2017 progress report."

NTBs.

KEY POLICY RECOMMENDATIONS AND ACTION PLAN

TOPIC 1: ERADICATE MALNUTRITION, UNDERNOURISHMENT, AND OBESITY

Recommendation 1: Educate consumers on the importance of a healthy lifestyle and a balanced diet starting even from pregnancy and early childhood, by designing general communication and school education campaigns with a comprehensive approach on food, physical activity, social issues, environment, and culture

Policy Action 1.1: Analyze nutritional guidelines from several countries to determine impact on environmental sustainability and overall public health, with a particular focus on childhood and maternal nutrition

Policy Action 1.2: Design educational strategies and programs that enhance the training of key stakeholders (e.g., healthcare providers, teachers, parents, etc.) and a comprehensive approach to teaching the public health benefits of improved nutrition

Policy Action 1.3: Develop simple, easy-to-understand, and science-based dietary and government endorsed nutritional recommendations that are developed with input from key stakeholders across business, policy, non-profit, and public health communities

Policy Action 1.4: Ensure that the food and beverages available in schools are representative of government endorsed nutritional guidelines for a balanced and healthful diet

Recommendation 2: Ensure access to and visibility of clear and precise dietary information through food product labelling to allow consumers to make informed purchase and consumption decisions

Policy Action 2.1: Analyze the impact of existing labeling systems on their desired outcomes

Policy Action 2.2: Adopt a harmonized, multi-lateral (e.g., Codex-based), and science-based labeling system across countries that clearly provides information required to select products at time of purchase or consumption, ensuring that:

- a. Consumers are transparently informed of nutritional information
- b. Companies are motivated to improve product formulation
- c. Food and beverages are considered as part of an overall balanced diet, without any isolated negative or unscientific characterizations of specific ingredients and products

Policy Action 2.3: Create a public-private governance system to monitor adherence and alignment with multi-lateral labeling guidelines across countries (e.g., via Codex)

Recommendation 3: Facilitate the development of food-producing value chains in developing countries (through public-private partnerships) to ensure accessibility of the local food supply and provide better employment opportunities

Policy Action 3.1: Partner with local governments, relevant business, non-profit, and community-based stakeholders to identify and address key risks to food security in specific countries and parts of the value chain

Policy Action 3.2: Foster the development of local supply chains that lead to employment and economic activity in rural communities through long-term and market-efficient income earning opportunities

Policy Action 3.3: Launch small-scale pilot programs to test and learn from different models of partnership before expanding the pilots within and across at-risk countries

TOPIC 2: ENSURE ENVIRONMENTAL CONSERVATION; MITIGATION AND ADAPTATION TO CLIMATE CHANGE

Recommendation 4: Create economic benefits to encourage efficient and sustainable use of key resources across food production systems in at most a minimally trade-distorting manner

Policy Action 4.1: Identify environmental impact of current economic policies and key opportunities for improvement or harmonization across countries (e.g., use of biogas in electricity generation)

Policy Action 4.2: Reallocate existing financial support and economic incentives to encourage the adoption of environmentally sustainable practices (e.g. access to credit, soft loans, and other incentives)

Policy Action 4.3: Improve and standardize the measurement of the environmental impact of agriculture across countries, crops, and livestock

Recommendation 5: Stimulate the development and adoption of innovative technologies and practices to anticipate the impacts of, adapt and build resiliency to, and mitigate climate change

Policy Action 5.1: Identify key environmental or climate-related threats to estimate the socio-economic impact on local and global agricultural markets, with a particular emphasis on developing or low income countries

Policy Action 5.2: Evaluate different agricultural practices that mitigate the long-term impacts on the environment and build resiliency to high, medium, and low-likelihood climate threats

Policy Action 5.3: Develop accessible, government-sponsored, and comprehensive risk management strategies to combat the impact of climate threats to SMEs and other agricultural producers (e.g., through insurance programs, government-backed financial instruments, etc.)

Policy Action 5.4: Along with business and non-profit stakeholders, establish an integrated policy and strategy action plan to preserve food production amidst climate and environmental risks

Recommendation 6: Promote and finance the creation of ecosystem management programs through public-private partnerships focused on early landscape planning, landscape level management, sustainable land management, and other programs

Policy Action 6.1: Identify critical or at-risk ecosystems and geographic areas (e.g., forests, freshwater sources, etc.)

Policy Action 6.2: Partner with business and non-profit stakeholders to develop and promote specific management and preservation initiatives (e.g., soil conservation techniques and regenerative agriculture such as no-till)

Policy Action 6.3: Provide funding for the training and adoption of ecosystem management practices

TOPIC 3: FOSTER TECHNOLOGY DEVELOPMENT AND ADOPTION

Recommendation 7: Promote and foster the development of innovative technologies to increase sustainable food production across the world (e.g., through biotechnology, digital technologies, etc.)

Policy Action 7.1: Develop and implement public policies to ensure that domestic regulatory frameworks broadly encourage investment in research and development of innovative technologies

Policy Action 7.2: Promote cooperation between academic and business stakeholders to identify challenges to domestic agricultural sustainability and address them by prioritizing key areas for innovation (e.g., soil degradation, water efficiency, GHG emissions, etc.)

Policy Action 7.3: Further expand use of existing multi-lateral funding mechanisms (e.g., CGIAR, GFAR, CABI) to foster early-stage foundational research into agricultural science, ensuring a focus on technologies that improve environmental sustainability and resource efficiency

Recommendation 8: Facilitate technology adoption in developing countries and SMEs, throughout the food value chain, that experience productivity gaps

Policy Action 8.1: Identify productivity disparities across countries and enterprises and quantify the case for change to attract the partnership of non-profit, business, and local stakeholders

Policy Action 8.2: Establish financing mechanisms for long-term capital investments and knowledge sharing forums to help build capabilities and capacity to improve yields

Policy Action 8.3: Convene relevant business and non-profit stakeholders to build an open-source (and free-to-use) knowledge platform of key agricultural technologies, practices, and other relevant information so that SMEs across the world have equal opportunity to build their capabilities and access markets

Recommendation 9: Increase investment for sustainable and resilient rural infrastructure to foster SME technology adoption and improve access to markets and knowledge

Policy Action 9.1: Identify critical domestic infrastructure gaps and quantify their impact on agricultural inefficiency (e.g., due to lack of accessible transportation, electricity, storage, telecommunications, water management systems, etc.)

Policy Action 9.2: Ensure that existing infrastructure funding mechanisms prioritize agriculturally important regions

Policy Action 9.3: Partner with local business stakeholders to raise the necessary funds for long-term improvements in infrastructure

Policy Action 9.4: Invest in alternative and environmentally resilient methods of transport for rural communities (e.g., ports, rivers, roads, trains, etc.)

TOPIC 4: REDUCE BARRIERS TO GLOBAL FOOD TRADE

Recommendation 10: Enhance the design, transparency and implementation of non-tariff measures applied to and affecting agri-food trade, and reduce and eliminate existing non-tariff barriers to trade

Policy Action 10.1: Strengthen the criteria for domestic support to be considered non-trade-distorting, including in respect of policies with environmental or sustainability objectives

Policy Action 10.2: Ensure that existing national and regional agri-food trade regulations are fully consistent with WTO SPS and TBT Agreements, suppressing all standards that are not technically-justified or science-based and striving to build on internationally approved and recognized standards

- a. For SPS: Codex, OIE and IPPC
- b. For TBT: Strengthen the role of Codex in the definition of principles for guiding countries in the development of labelling systems, in order to avoid unilateral advances that become technical barriers to trade

Policy Action 10.3: Enforce application of SPS and TBT agreements among WTO member states, making use of its faculties for dispute resolution

Policy Action 10.4: Ensure that the development and implementation of NTMs is transparent and fully consistent with WTO rules

Recommendation 11: Commit to eliminating or significantly reducing the effects of tariff barriers and trade-distortive domestic support by fully implementing negotiated WTO agreements regarding agriculture (including the Bali and Nairobi packages), implementing the new WTO Trade Facilitation Agreement and supporting continued WTO Negotiations to enhance agri-food market access, prioritizing liberalization in markets and sectors of interest in developing countries dependent on agricultural trade

Policy Action 11.1: Prioritize WTO negotiations to continually reduce tariffs on agricultural trade in ministerial conferences, with special focus on reducing tariffs on products that affect developing countries

Policy Action 11.2: Ensure full implementation of the Nairobi package agreement of 2015 regarding agricultural export subsidies, with special urgency on products produced by developing countries

Policy Action 11.3: Renew negotiations on reducing trade distortive domestic support to achieve a successful agreement in the next WTO ministerial conference

Policy Action 11.4: Put an end to harmful and illegal fisheries subsidies that are enhancing fishing capacity in a situation of international overfishing

Policy Action 11.5: Implement remaining Bali package decisions regarding public stockholding of food, quota administration, services that qualify for Green Box support, reduction of export subsidies and enhancement of transparency and monitoring

Recommendation 12: Move towards regulatory coherence at a country and regional level of rules that impact trade of agri-food products (e.g. front-of-pack labeling, consumer care, trade, among others) aiming to achieve global equivalence, mutual recognition, and incremental progress to convergence, striving to build on internationally approved standards:

- a. For SPS: Codex, OIE, IPPC
- b. For TBT: Strengthen the role of Codex in the definition of principles for guiding countries in the development of labelling systems, in order to avoid unilateral advances that become technical barriers to trade

Policy Action 12.1: Work with the private sector to assess country-level and regional regulations negatively impacting trade of agri-food products

Policy Action 12.2: Conduct research in collaboration with Codex to determine the impacts of different labeling systems and their impact on consumer decisions and foreign trade

Policy Action 12.3: Define international standards setting bodies such as Codex-OIE-IPPC as the unique forum for discussion of conflictive regulations and setting of internationally recognized rules

Policy Action 12.4: Align regulations impacting trade to ensure compliance with international standards setting bodies, avoiding the establishment of these as effective barriers

TOPIC 5: MINIMIZE FOOD LOSS AND WASTE

Recommendation 13: Design and implement an adequate framework of regulation and incentives that promotes circular economies, strengthening the role of non-profits and community organizations dedicated to reducing waste by leveraging every possible use case of food

Policy Action 13.1: Standardize and harmonize measurements and methodologies to quantify food loss and waste across countries to enable an accurate assessment of social and environmental impact and data-driven comparisons across countries

Policy Action 13.2: Reflect the environmental impacts of food loss by establishing a prioritized structure of for the uses of discarded food

- a. Prioritize donations of consumable food before using it in animal feed or composting, and finally disposing it in an environmentally efficient manner

Policy Action 13.3: Develop a legal framework to reduce the legal liability of food donations

- a. Compare the benefits and impacts of different donation models of countries that have similar regulations to limit legal liability of donors and encourage food donations (e.g., USA's Good Samaritan Laws)
- b. Approve a domestic legal framework to achieve best results and ensure health safety, with the input of the private sector (to allow for flexibility of different operating models and room for innovation)
- c. Strengthen the role of non-profits and community organizations involved in the food donation model

Policy Action 13.4: Establish economic incentives that discourage waste and establish markets for alternative or secondary uses of food

- a. Foster early-stage development of these markets through credits, tax incentives, loans, or subsidies until markets have viable scale to be economically self-sustaining

Recommendation 14: Incentivize investments towards storage facilities, energy availability, transportation, access to telecommunications and other infrastructure to reduce food losses in developing countries

Policy Action 14.1: Create a fund (e.g., through World Bank's IDA) dedicated to identifying critical value chains and the most important gaps in infrastructure causing food loss in developing countries

Policy Action 14.2: Finance infrastructure works such as roads, collection points, cooling systems, access to energy, access to telecommunications, and access to market information

Policy Action 14.3: Partner with businesses to stimulate the adoption of technologies and farming practices at the pre-harvest and harvest stages that aim at reducing food damages and leakages (e.g., through providing microcredits or other financing programs)

Recommendation 15: Educate consumers on how to reduce food waste at the household level

Policy Action 15.1: Design an education campaign for consumers to raise awareness and encourage them to reduce household waste

Policy Action 15.2: Include information that can help consumers planning or purchasing groceries for meals, checking food stocks, making shopping lists, developing recipes for leftovers, better using of refrigerators and freezers for storage, better understanding date labels

Policy Action 15.3: Create a public-private partnership to implement the campaign through different media channels (e.g., radio, digital, television, print, etc.) and distributions at retail locations, public events, or other community engagements

INTRODUCTION TO THE SUSTAINABLE FOOD SYSTEM TASKFORCE

In the 2018 edition of the B20 hosted by Argentina, President Mauricio Macri designated a group of Argentinian business leaders to guide work in each of the summit's taskforces, coordinated by B20 Chair Daniel Funes de Rioja and B20 Sherpas Fernando Landa and Carolina Castro. Of the eight taskforces present in this 2018 edition, seven give continuity to issues addressed in 2017 under Germany's presidency of the B20⁹, and only one represents a new inclusion: Sustainable Food System.

In 2014, the FAO HLPE defined a Sustainable Food System as follows:

“A sustainable food system (SFS) is a food system that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised”

(HLPE, 2014)

Following this definition, this taskforce not only revisits but also broadens a topic that had been absent from the B20 agenda since it was last addressed in 2012 under the Mexican presidency of the G20, under the title Food Security. As the definition suggests, this working group not only addresses food security and nutrition, but also the economic, social and environmental sustainability of food system, taking a holistic approach that is direly needed to meet the challenge of feeding an increasing world population with declining environmental resources.

The inclusion of this working group as a B20 priority area is a clear reflection of not only the Argentinian presidency's focus on pursuing zero poverty, zero hunger and sustainable development goals as part of the G20 agenda, but also the massive impact that working towards a more sustainable global food system can have in achieving such goals. It is also a recognition of the fact that governments cannot strive to achieve these goals on their own, and that participation of the private sector through multi-stakeholder partnerships is crucial. According to the UNDP, this collaborative approach to accomplishing the SDGs can bring an enhanced result in terms of sustainable development, and create at the same time an estimated US\$12 trillion in market opportunities in four major economic systems: food and agriculture, cities, energy and materials and health and well-being.¹⁰ Thus, addressing the issues covered by the Sustainable Food System taskforce as a joint endeavor becomes one of the top priorities for all stakeholders involved.

⁹ The seven taskforces continued from Germany 2017 are Employment & Education, Digital Economy & Industry 4.0, Financing Growth & Infrastructure, Trade & Investment, Energy, Resource Efficiency & Sustainability, SME Development and Integrity & Compliance.

¹⁰ Business & Sustainable Development Commission (2017) Better Business, Better World Report

TOPIC 1: ERADICATE MALNUTRITION, UNDERNOURISHMENT AND OBESITY

Summary

The key actors in the global food system need to increase efforts to ensure food security and adequate nutrition in order to eradicate hunger and all forms of malnutrition by 2030, in line with the UN SDG 2. Improving levels of undernourishment and obesity requires close collaboration between the public and private sectors, as both actors have key roles to play in the development and implementation of a sustainable solution. Together, these actors can further develop supply chains, ensure year-round availability and affordability of safe and nutritious food in all regions of the world, and enable consumers to make informed dietary and lifestyle choices.

Context and main challenges

Eliminating all forms of malnutrition is a complex endeavor, but it is a critical component of global sustainable development, as stated by the UN in its 2030 SDGs

Today, nearly one in three persons globally suffers from at least one form of malnutrition - undernutrition (stunting, wasting, underweight), micronutrient deficiency, or overweight and obesity - and a large part of the world's population is affected by diet related non-communicable diseases.¹¹

The root causes and factors contributing to malnutrition are complex and multidimensional, and include:

- Poverty, underdevelopment, unemployment and low socio-economic status in both rural and urban areas, often aggravated by the impact of conflict, humanitarian emergencies and protracted crises, including natural disasters
- Inequity and inequality, poor infant and young child feeding and care practices, poor sanitation and hygiene, lack of access to education, quality health systems and safe drinking water, foodborne infections and parasitic infestations and ingestion of harmful contaminants due to unsafe food production or preparation practices
- New and emerging challenges and trends such as climate change, pressures from population growth, urbanization, changing lifestyles and consumption patterns

The negative impacts of malnutrition on development, society, health and well-being are serious and long lasting for individuals, families, communities and countries. Thus, eliminating malnutrition in all its forms is imperative to break the intergenerational cycle of poverty, and reach the Sustainable Development Goals set by the UN for 2030

[Additional effort is needed in order to eradicate hunger and undernourishment](#)

In 2016 the number of chronically undernourished people in the world is estimated to have increased to 815 million (11% of world population), up from 777 million in 2015, although still down from about 900 (14.7%) million at the beginning of the 21st century¹²

¹¹ FAO, IFAD, UNICEF, WFP and WHO. (2017). The State of Food Security and Nutrition in the World. Rome: FAO.

¹² Ibid.

Sub-Saharan Africa remains the region with the highest prevalence of undernourishment at 22.7 percent of its population in 2016 and has shown very limited progress since the year 2000, achieving only a 20 percent total reduction. In absolute terms, however, the largest undernourished population is in Asia, where 520M people do not have access to sufficient food¹³. In addition to the human suffering and adverse health impacts of hunger, undernourishment also imposes an economic cost on afflicted societies. In Asia and Africa, this cost is estimated at 11 percent of GNP¹⁴.

A 2017 report by FAO cites the growing number of conflicts around the globe as a key driver of severe food crises and recently re-emerged famines¹⁵. Notwithstanding this particular cause, increased effort is required from both the public and private sector to reach the global target of eliminating hunger by 2030. Current projections estimate that due to regional population and production increases, this target will not be met, and ~8 percent undernourishment will prevail among the world population¹⁶.

Food insecurity calls for a dual approach, combining investment in social protection to raise food consumption of the extremely low income with investment in productive activities (especially food production, processing and storage) to increase local food supply and create sustainable income-earning opportunities.

Other forms of malnutrition are on the rise, caused partially by consumption habits

Obesity is on the rise among both children and adults in virtually all regions of the world. Among children under 5 years of age, obesity rates have risen to 6 percent (41 million children) in 2016, up from 5.3 percent in 2005. Among the adult population, obesity rates rose to 13 percent in 2014 from 9 percent in 2005. Although incidence is now increasing at a slower pace than before, the trend persists in every country studied¹⁷. The rise in obesity imposes additional economic costs on afflicted countries as obese adults incur healthcare costs more than 40 percent higher than the average individual¹⁸. If the current G20 obesity rate were reduced by just 20 percent, the estimated savings from lower healthcare costs would total roughly \$100 billion for G20 governments and other payers of health insurance.¹⁹

An imbalance of Caloric intake is the primary cause of this rise in obesity. An increase in global availability and affordability of energy dense foods, combined with changes in dietary patterns and a reduction in physical activity, have led to broader weight gain and obesity. This trend can be reverted if the public and private sectors collaborate to foster the adoption of healthier lifestyle habits. By embracing a balanced diet and adequate physical activity, populations can avoid excessive consumption, thus reducing the risk of weight gain and obesity.

Guiding principles for recommendations

¹³ Ibid.

¹⁴ International Food Policy Research Institute. (2014). Global Nutrition Report 2014: Actions and Accountability to Accelerate the World's Progress on Nutrition. Washington, DC: International Food Policy Research Institute.

¹⁵ FAO, IFAD, UNICEF, WFP and WHO. (2017).

¹⁶ FAO. (2017). The future of food and agriculture - Trends and challenges. Rome: FAO.

¹⁷ FAO, IFAD, UNICEF, WFP and WHO. (2017).

¹⁸ EA Finkelstein, J. T. (2009). Annual Medical Spending Attributable to Obesity: payer-and Service-specific Estimates. Health Affairs, 822-831.

¹⁹ World Bank Data, 2018

- The twin problems of global undernourishment and obesity can only be effectively addressed through deep and robust partnerships between public and private sectors to develop policies and initiatives that help consumers pursue a healthier lifestyle and a more balanced diet
- Sustainable long-term universal food security requires a significant uplift in food production in developing countries, in a way that ensures affordable and nutritious food supply and creates more employment and better income-earning opportunities

RECOMMENDATION 1: EDUCATE CONSUMERS ON THE IMPORTANCE OF A HEALTHY LIFESTYLE AND A BALANCED DIET STARTING EVEN FROM PREGNANCY AND EARLY CHILDHOOD, BY DESIGNING GENERAL COMMUNICATION AND SCHOOL EDUCATION CAMPAIGNS WITH A COMPREHENSIVE APPROACH ON FOOD, PHYSICAL ACTIVITY, SOCIAL ISSUES, ENVIRONMENT, AND CULTURE

POLICY ACTIONS

1.1: Analyze nutritional guidelines from several countries to determine impact on environmental sustainability and overall public health, with a particular focus on childhood and maternal nutrition

1.2: Design educational strategies and programs that enhance the training of key stakeholders (e.g., healthcare providers, teachers, parents, etc.) and a comprehensive approach to teaching the public health benefits of improved nutrition

1.3: Develop simple, easy-to-understand, and science-based dietary and government endorsed nutritional recommendations that are developed with input from key stakeholders across business, policy, non-profit, and public health communities

1.4: Ensure that the food and beverages available in schools are representative of government endorsed nutritional guidelines for a balanced and healthful diet (SDG 4.7)

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- Percent of schools where nutrition is part of the educational curriculum
- Number of people trained on nutritional health programs
- Decrease in prevalence of stunting among children under 5 (SDG 2.2.1)
- Decrease in prevalence of malnutrition among children under 5 (SDG 2.2.2)
- Improvement in average dietary scores (AHEI score or similar)
- Reduction in healthcare costs

Relevant SDGs

- By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons (SDG 2.2)
- By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

RECOMMENDATION 2: ENSURE ACCESS TO AND VISIBILITY OF CLEAR AND PRECISE DIETARY INFORMATION THROUGH FOOD PRODUCT LABELING TO ALLOW CONSUMERS TO MAKE INFORMED PURCHASE AND CONSUMPTION DECISIONS

POLICY ACTIONS

2.1: Analyze the impact of existing labeling systems on their desired outcomes

2.2: Adopt a harmonized, multi-lateral (e.g., Codex-based), and science-based labeling system across countries that clearly provides information required to select products at time of purchase or consumption, ensuring that:

- Consumers are transparently informed of nutritional information
- Companies are motivated to improve product formulation
- Food and beverages are considered as part of an overall balanced diet, without any isolated negative or unscientific characterizations of specific ingredients and products

2.3: Create a public-private governance system to monitor adherence and alignment with multi-lateral labeling guidelines across countries (e.g., via Codex)

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- Number of countries that adopt harmonized mandatory nutritional labeling
- Decrease in prevalence of malnutrition among children under five (SDG 2.2.2)
- Improvement in average dietary scores (AHEI score or similar)
- Reduction in healthcare costs

Relevant SDGs

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

RECOMMENDATION 3: FACILITATE THE DEVELOPMENT OF FOOD-PRODUCING VALUE CHAINS IN DEVELOPING COUNTRIES (THROUGH PUBLIC-PRIVATE PARTNERSHIPS) TO ENSURE ACCESSIBILITY OF THE LOCAL FOOD SUPPLY AND PROVIDE BETTER EMPLOYMENT OPPORTUNITIES

POLICY ACTIONS

3.1: Partner with local governments, relevant business, non-profit, and community-based stakeholders to identify and address key risks to food security in specific countries and parts of the value chain

3.2: Foster the development of local supply chains that lead to employment and economic activity in rural communities through long-term and market-efficient income earning opportunities

3.3: Launch small-scale pilot programs to test and learn from different models of partnership before expanding the pilots within and across at-risk countries

Relevant SDGs

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- a. Number of new jobs created through new projects or investments
- b. Prevalence of undernourishment (SDG 2.1.1)
- c. Prevalence of moderate or severe food insecurity (SDG 2.1.2)
- d. Average income of small-scale food producers (SDG 2.3.2)
- e. Amount of United States dollars committed to public-private and civil society partnerships (SDG 17.17.1)

Relevant SDGs

- By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round (SDG 2.1)
- By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment (SDG 2.3)
- Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships (SDG 17.17)

Commitments by the B20

1. Undertake a collaborative, whole-of-society effort to improve nutritional outcomes in all of our countries, including work through industry chambers and public-private partnerships to:
 - a. Communicate, through clear and transparent labeling, all the appropriate nutritional information about food products to consumers
 - b. In collaboration with all relevant public authorities, develop comprehensive school programs that promote healthy lifestyle habits (including nutrition, balanced diet, physical activity, interpretation of food labels, among other topics) and train teachers, professionals and adults responsible for raising children in the promotion of these healthy habits
 - c. Adopt self-regulatory models for advertising related to children that incorporate nutritional profiles and promotional practices appropriate to this particular age group
 - d. Invest in research and development through collaborations with universities, research centers and trade associations to improve the nutritional profile of ingredients and food products
 - e. Promote and collaborate with trade associations in the development of studies and scientific works that provide reliable data and evidence about food consumption
2. Continue developing science-based public-private agreements to improve the nutritional profile of food supplies, taking a national-level comprehensive approach that contributes to broaden options for consumers
3. Actively contribute in the development and strengthening of agri-food value chains in developing countries through investment, capability building and knowledge sharing

Other valuable concepts

In addition to the aforementioned policy items, further consideration should be given to increasing funding by G20 countries to international organizations and NGOs dedicated to alleviating food insecurity in developing countries by providing immediate aid - structuring this funding in a way that is specifically targeted, need-based and untied from any reciprocity. Additionally, nutritional objectives should be adopted as an instrumental part of such social protection or humanitarian assistance programs, and more broadly of all food and agriculture policy.

Exhibit 1 | Case Studies

Name: One Acre Fund²⁰

Years: 2006-present

Description

²⁰ For more information access:
<https://oneacrefund.org/>

- Non-profit organization that supplies smallholder farms a complete bundle of services including financing, distribution, training, and market access
- Facilitates activities and transaction across the farming value chain by providing asset-based loans for:
 - Distribution of seeds and fertilizer
 - Financing for farm inputs
 - Training on agriculture techniques
 - Market facilitation to maximize profits
 - Crop insurance to mitigate risks of drought and disease

Impact

- In 2017, the Fund served 615K farming families and created >6K new rural jobs
Farmers realized a \$171 increase in income (a 65% improvement)
- The model is economically sustainable with a 97 percent loan repayment rate

Name: Menos Sal Mas Vida²¹

Years: 2011-present

Description

- Public-private collaboration, led by the Health Ministry of Argentina, to reduce consumption of salt to reduce related health conditions
- Initiative originally consisted of voluntary agreements by food type to progressively reduce content of salt in food products; it later became a legal requirement
- The collaboration amongst public and private stakeholders gave way to:
 - Agreements on maximum quantities of sodium per type of food
 - Conformation of group to work on further initiatives
 - Technical research on impact of this nutrient in the composition of food

Impact

- An estimated 250,000 health events (e.g.: CVA, heart attacks) averted through 2020 by reduction of salt intake
- Net estimated savings of US\$ 3.8 billion in health costs across ten years

*Note that case studies selected do not reflect an endorsement of best-in-class by the B20 SFS task force

²¹For more information access:
<http://www.msal.gob.ar/ent/index.php/informacion-para-ciudadanos/menos-sal--vida>

TOPIC 2: ENSURE ENVIRONMENTAL CONSERVATION; MITIGATION AND ADAPTATION TO CLIMATE CHANGE

Summary

The food production chain represents an opportunity to enhance global environmental sustainability. Given the growing global population, food producers must achieve better yields on resources and lower GHG emissions. With a more focused approach on disseminating existing best practices and technologies through scalable models and partnerships, key stakeholders can mitigate some of the greatest environmental risks posed by agriculture and even turn the sector into a positive actor for the broader environment. Broad, global adoption of sustainable food practices can help achieve these goals and increase biodiversity, enhance soils, improve watersheds, and enhance overall ecosystem services.

Context and main challenges

As global demand for food increases with projected population growth, the broad adoption of sustainable agricultural practices is required to mitigate growing GHG emissions. The agricultural sector broadly defined makes up for 10-12 GtCO₂-eq per year, or roughly 20-24 percent of total global GHG emissions²². Of these emissions, land-use change activities (primarily deforestation) represent 4.3-5.5 GtCO₂-eq per year, or 9-11 percent of global emissions. Livestock production (excluding feed production and land-use change) account for 3.5 GtCO₂-eq or 7 percent of global emissions²³. Finally, farming (including feed production for livestock) represents the remaining agricultural emissions of 2.2-3.0 GtCO₂-eq, or 4-6 percent of total global GHG emissions. Across these emission sources, raising, feeding and managing cattle (both beef and dairy) are responsible for annual emissions of ~4.6 GtCO₂-eq (9% of global emissions, ~42% of agricultural) primarily from the release of methane gas (CH₄) from enteric fermentation in the digestive process²⁴.

Sustainable farming can enhance environmental and agricultural resilience

Farming represents 22-25 percent of total agricultural emissions, driven by the application of chemical fertilizers, energy used by machinery, and from the depletion of carbon content in the soils. With roughly twice as much carbon residing in the top 30 cm of soil than in the atmosphere and all living matter combined, soil is an important store of carbon²⁵.

Certain farming techniques can lead to soil degradation, which reduces the carbon sequestered in the soil, thereby reducing crop yields and releasing the carbon into the atmosphere. The UN estimates that more than 52 percent of agricultural land has already been degraded, affecting 1.5B people globally²⁶. Increasing the carbon contents of degraded cropland soil by 1 ton can increase wheat production yields by 20

²² Smith, P., Bustamante, M., Ahammad, H., Clark, H., Dong, H., Elsidig, E., . . . Tubiello, F. (2014). Agriculture, Forestry and Other Land Use (AFOLU). Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.

²³ Gerber, P., Steinfeld, H., Henderson, B., Mottet, A., Opio, C., Dijkman, J., . . . Tempio, G. (2013). Tackling climate change through livestock - A global assessment of emissions and mitigation opportunities. Rome, Italy: Food and Agricultural Organization of the United Nations (FAO).

²⁴ Ibid.

²⁵ FAO and ITPS. (2017). Global Soil Organic Carbon Map - GSOCmap. FAO. Retrieved from <http://www.fao.org/3/a-i8195e.pdf>

²⁶ United Nations. (2017, 11 29). Goal 15: Life on land - facts and figures, targets, why it matters. Retrieved from United Nations Convention to Combat Desertification: Knowledge Hub: <https://knowledge.unccd.int/publications/goal-15-life-land-facts-and-figures-targets-why-it-matters>

to 40 kilograms per hectare²⁷. Carbon sequestration in cropland soil not only affects productivity but also crop resilience, and is an important way to protect against variability in precipitation that impacts crop water and nutrient absorption²⁸.

Sustainable farming techniques exist that can sequester carbon and preserve the health of topsoil, but they are not consistently applied. Examples of these techniques, mostly grouped under the concept of regenerative agriculture, include the use of organic manures, cover cropping, mulching, conservation tillage, fertility management, agroforestry, and rotational grazing. Combined, these methods can help to sequester up to 1.85 Pg C/yr, or 53 percent of the amount needed to halt the projected increase in GHG emissions related to human activities²⁹. However, the global adoption rates of these techniques remain low. Worldwide, conservation agriculture has only been adopted on about 8 percent of total world cropland³⁰. No-till farming, a form of conservation tillage which preserves the top (and most fertile) layer of soil reduces net carbon emissions by 30-35 kg/ha, but has only been adopted on 7 percent of global croplands³¹. Improving soil health by sequestering carbon will not only help conserve the environment but also improve agricultural yields and production by increasing fertility.

Livestock management can be significantly less carbon intensive, and even a net carbon sink

Proven livestock management practices exist that can help mitigate these emissions, but require better awareness and education to encourage broad adoption. Studies aggregated by the FAO demonstrate the opportunity of emission reductions within existing production systems and by adopting new practices to better sequester carbon in grassland soil and halt land-use conversion. Applying best practices in manure management, feed quality, and herd management have demonstrated large reductions in emission intensity to existing production systems. By incorporating the best practices from the most efficient producers, global livestock producers could reduce their emissions by 1.8 GtCO₂-eq³². Additional opportunities exist through more stringent land-use and grazing management practices. For instance, halving the land-use conversion rate for livestock production could mitigate an additional 0.4 GtCO₂-eq, and applying a range of pasture improvement practices to improve carbon sequestration in grassland soil could yield an additional 1.5 Gt annual improvement³³. Taken together, just these initiatives would enable livestock producers to reduce annual total global emissions (across all sectors) by approximately 8 percent. Additionally, the by products from enteric fermentation could be used to help create a more circular agro-economy, by transforming it into a source of methane-based energy or manure.

Land use change emissions must be reduced or prevented entirely

Pressure on forests could be minimized by better enforcement of national laws, by an intensification of the REDD mechanism by which developed countries support the preservation in emerging countries. Most importantly, however, deforestation can be eliminated by growing agricultural yields in lands already dedicated to farming and

²⁷ Lal, R. (2008). Soil Carbon Sequestration Impacts on Global Climate Change and Food Security. *Science*, 1623-1627.

²⁸ Zomer, R., Bossio, D., Sommer, R., & Verchot, L. (2017, November 14). Global Sequestration Potential of Increased Organic Carbon in Cropland Soils. *Nature: Scientific Reports*. Retrieved from <https://www.nature.com/articles/s41598-017-15794-8>

²⁹ Ibid.

³⁰ FAO, 2017

³¹ Lal, R. (2010). *Soil Carbon Sequestration*. Rome, Italy: FAO.

³² Gerber, et al., 2013

³³ Smith, et al., 2007

livestock, so that no additional land clearance is required.

Production systems must be adaptable and resilient to confront the realities of climate change

Changes in the global climate are already affecting agriculture, specifically due to the variability in temperature and water supply. Due to drought and desertification, the world loses 12M hectares of agricultural land each year to degradation, which could have produced 20M tons of grain³⁴. Left unmitigated, climate change will severely affect agricultural production, as fertile countries will experience more frequent droughts and temperature variability. Estimates on the total economic losses to global agricultural welfare range from 0.3 - 0.8 percent of projected global GDP, or US\$884B - 2,502B by the year 2095. These losses will be highest for global consumers through price increases and producers in low-latitude regions from decreasing yields³⁵. The impact on climate change will not only affect the soil fertility and crop yields, but also pose grave risks to global biodiversity through the spread of disease or the arrival of invasive species. In order to withstand a changing climate, agricultural production systems must be flexible and resilient to variability in the availability of water and other key resources. Additionally, funding mechanisms that can minimize the risk from these losses and damages to producers will be particularly important to ensure the continued development of low-income countries. Without action, agriculture will be the second most economically impacted sector from climate change, behind the energy sector³⁶. Several sustainable production techniques exist (e.g., carbon sequestration) that can help mitigate these resource risks and improve resiliency. Additionally, advances in digitizing agricultural production have helped enable precision agriculture, which allows food systems react more quickly and cost-effectively to the variations in temperature or precipitation associated with climate change.

Guiding principles for recommendations

- Sustainable food systems have a key role in the mitigation of climate change and the conservation of the environment and biodiversity
- Production systems must adapt to a changing environment while ensuring their sustainability
- Public and private incentives must exist to foster the adoption of environmental friendly practices

³⁴ United Nations, 2017

³⁵ Stevanović, M., Popp, A., Lotze-Campen, H., Dietrich, J., Müller, C., Bonsch, M., . . . Weindl, I. (2016, August 24). The impact of high-end climate change on agricultural welfare. *Science Advances*, p. E:1501452. Retrieved from <http://advances.sciencemag.org/content/2/8/e1501452.full>

³⁶ Wreford, A., Ignaciuk, A., & Gruère, G. (2017). Overcoming barriers to the adoption of climate-friendly practices in agriculture. *OECD Food, Agriculture and Fisheries*, 6.

RECOMMENDATION 4: CREATE ECONOMIC BENEFITS TO ENCOURAGE EFFICIENT AND SUSTAINABLE USE OF KEY RESOURCES ACROSS FOOD PRODUCTION SYSTEMS IN AT MOST A MINIMALLY TRADE-DISTORTING MANNER

POLICY ACTIONS

4.2: Identify environmental impact of current economic policies and key opportunities for improvement or harmonization across countries (e.g., use of biogas in electricity generation)

4.2: Reallocate existing financial support and economic incentives to encourage the adoption of environmentally sustainable practices (e.g. access to credit, soft loans, and other incentives)

4.3: Improve and standardize the measurement of the environmental impact of agriculture across countries, crops, and livestock

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- a. Value and amount of subsidies reallocated to require sustainable production methods
- b. Proportion of agricultural area under productive and sustainable agriculture (SDG 2.4.1)
- c. CO₂eq emissions per unit of value added (SDG 9.4.1)
- d. Material footprint, footprint per capita, and footprint per GDP (SDG 12.2.1)

Relevant SDGs

- By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality (SDG 2.4)
- By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities (SDG 9.4)
- By 2030, achieve the sustainable management and efficient use of natural resources (SDG 12.2)
- By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse (SDG 12.5)

RECOMMENDATION 5: STIMULATE THE DEVELOPMENT AND ADOPTION OF INNOVATIVE TECHNOLOGIES AND PRACTICES TO ANTICIPATE THE IMPACTS OF, ADAPT AND BUILD RESILIENCY TO, AND MITIGATE CLIMATE CHANGE

POLICY ACTIONS

5.1: Identify key environmental or climate-related threats to estimate the socio-economic impact on local and global agricultural markets, with a particular emphasis on developing or low-income countries

5.2: Evaluate different agricultural practices that mitigate the long-term impacts on the environment and build resiliency to high, medium, and low-likelihood climate threats

5.3: Develop accessible, government-sponsored, and comprehensive risk management strategies to combat the impact of climate threats to SMEs and other agricultural producers (e.g., through insurance programs, government-backed financial instruments, etc.)

5.4: Along with business and non-profit stakeholders, establish an integrated policy and strategy action plan to preserve food production amidst climate and environmental risks

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- a. Proportion of agricultural area under productive and sustainable agriculture (SDG 2.4.1)
- b. Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030 (SDG 13.1.2)
- c. Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other) (SDG 13.2.1)
- d. Projected economic losses avoided in catastrophic climate-driven scenarios

Relevant SDGs

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

- By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities (SDG 9.4)
- Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries (SDG 13.1)
- Integrate climate change measures into national policies, strategies and planning (SDG 13.2)
- Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning (SDG 13.3)

RECOMMENDATION 6: PROMOTE AND FINANCE THE CREATION OF ECOSYSTEM MANAGEMENT PROGRAMS THROUGH PUBLIC-PRIVATE PARTNERSHIPS FOCUSED ON EARLY LANDSCAPE PLANNING, LANDSCAPE LEVEL MANAGEMENT, SUSTAINABLE LAND MANAGEMENT, AND OTHER PROGRAMS

POLICY ACTIONS

6.1: Identify critical or at-risk ecosystems and geographic areas (e.g., forests, freshwater sources, etc.)

6.2: Partner with business and non-profit stakeholders to develop and promote specific management and preservation initiatives (e.g., soil conservation techniques and regenerative agriculture such as no-till)

6.3: Provide funding for the training and adoption of ecosystem management practices

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- a. Forest area as a proportion of total land area (SDG 15.1.1)
- b. Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas (SDG 15.1.2)
- c. Proportion of land that is degraded over total land area (SDG 15.3.1)
- d. Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems (SDG 15.a.1)

Relevant SDGs

- By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements (SDG 15.1)
- By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world (SDG 15.3)
- Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems (SDG 15.a)

- By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution (SDG 14.1)
- Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships (SDG 17.17)

Commitments by the B20

1. Commit to increasing environmental sustainability with internal company processes (e.g., procurement, production, processing, and logistics) through tangible projects and scalable models of adoption
2. Invest in developing new technologies that improve environmental sustainability through pilots in partnership with governments or other key stakeholders
3. Support agricultural producers (and the overall value chain) in adopting sustainable production practices by facilitating capacity building programs to ensure the transfer of capabilities associated with Good Agricultural Practices (GAP) and by acting as an intermediary for small producers to gain access to multilateral or institutional funding

Other valuable concepts

In addition to the aforementioned policy items, additional consideration should be given to initiatives that stimulate the research and development of technologies that enable higher yields with less resource utilization or lower GHG emission rates, and can be adopted globally to improve the environmental sustainability of food production. Additionally, an increase in collaboration between private and public sectors to enhance the availability and utility of climatic information at the country and region level would greatly help producers plan production in the medium-long term, thus increasing resilience of production systems. Furthermore, this collaboration can also help ensure that policymaking and the design of regulatory frameworks in relation to environmental issues are grounded in the best available scientific and technical information.

Exhibit 3 | Case Studies

Name: Livelihood Carbon Funds (LCF)³⁷

Years: 2011-present

2011-present

Description

- LCF leverages the carbon economy to finance major ecosystem restoration, agroforestry and rural energy projects over periods of 10 to 20 years
- Operates two major investment funds in which twelve major companies have invested so far

³⁷ For more information access:
<http://www.livelihoods.eu/>

- Focus on helping rural communities restore and preserve their ecosystems and improve their livelihoods
- Additional funding is available through L3F (Livelihood fund for Family Funding) to foster value chain development in developing countries
- Partners with NGOs and local businesses to help execute projects and government partners can co-invest in select projects

Impact

- LCF1 (launched in 2011) invested €40M and will sequester 10M tons CO_{2eq} over 20 years
 - Nine active projects across Africa, Asia, and Latin America
 - Example project: investing in agroforestry practices and a sustainable dairy cycle for 30K Kenyan farmers
- LCF2 (launched in 2017) will invest €100M and aims to sequester 25M tons CO_{2eq}

*Note that case studies selected do not reflect an endorsement of best-in-class by the B20 SFS task force

TOPIC 3: FOSTER TECHNOLOGY DEVELOPMENT AND ADOPTION

Summary

Technology represents an opportunity to increase yields across developing and developed countries and feed the growing global population without increasing strain on the environment. However, in developing countries a lack of infrastructure and technical expertise inhibit the impact that cutting-edge technologies have on increasing agricultural production. In addition to investing in new technologies to improve yields, developing countries require investments to ensure sustainable infrastructure, access to information, avenues for capability sharing, as well as improved access to capital and long term financing to lower the cost of market access. On the other hand, developed countries must continue to innovate on yield-increasing biologic and digital technologies (and others) but also find better ways to disseminate this technology to the broader world. G20 countries must lead the charge in identifying and developing technologies that will increase environmental sustainability to reduce the agricultural sector's impact on the environment.

Context and main challenges

A global increase in investment is needed to increase and regionally optimize crop yields to sustainably meet future demand

Global agricultural productivity must increase to meet demand from a growing global population. However, this increase in production needs to be environmentally sustainable, and cannot come from further degrading the land (e.g., via deforestation) and other critical environmental resources (e.g., water) used in food production. The world needs to produce 50 percent more food, feed, and biofuel than in 2012 to meet demand projected in 2050. Global crop yields have been slowing since the “Green Revolution” of the 1970s and 1980s, where it was common for annual yields of major crops to improve more than 2 percent each year due to the introduction of new technologies such as pesticides or fertilizers. Global yield gains have since slowed, as these technologies have become mainstream. In the last decade, the average annual yield growth of wheat, rice, and maize was slightly above 1 percent, while soybeans and sugarcane improvements were below 1 percent³⁸. Sub-Saharan Africa and South Asia will require more than double 2012 food levels to meet demand from their projected regional population growth³⁹. In total, FAO estimates that developing countries will need investments of \$265B to increase agricultural yields necessary to ensure global food security through 2050 without further expanding land use and resorting to deforestation⁴⁰.

Limitations in organizational capacity, finance, and infrastructure decrease the adoption and effectiveness of existing technologies in developing countries and SMEs, which lead to yield gaps

Crop yields vary significantly by region, and yield gaps generally exceed 50 percent in most low-income countries. Across crops, Sub-Saharan Africa, Central America, and Central Asia respectively operate at 24 percent, 35 percent, and 36 percent of full potential yields⁴¹ (FAO, 2017). In these countries, small farms and SMEs play critical roles across the food value chain but lack the access to organizational forums, credit, and infrastructure necessary to share, adopt, and benefit from yield increasing practices or technologies. Specifically, a lack of infrastructure reduces the incentives

³⁸ FAO, 2017

³⁹ FAO, 2017, p. 46

⁴⁰ Ibid.

⁴¹ Ibid.

for agricultural producers to invest in technologies to increase yields. Without the requisite and resilient infrastructure (e.g., transportation, telecommunications, and other utilities), the cost for a producer in a developing country to access the market increases. As a result, developing countries have higher food losses in the production and processing phases of the food value chain⁴². Farmers are unable to bring this food to market profitably and it becomes wasted. Thus, in order for investments in yield-increasing technologies to become economically sustainable for the developing world, investments in climate-resilient and smart infrastructure are required to lower the cost of accessing markets. There is immense opportunity in closing the global yield gap. For example, a 2.5 ton/ha improvement in cereal yields for underperforming countries could increase total available supply by 140 million tons, which could feed around 300 million people.

The governments of high-income countries spend roughly eight times more on agricultural R&D than low- and lower-middle-income countries (as a percent of GDP)⁴³. Without the requisite investments towards building in-country infrastructure or cross-country knowledge and technology sharing mechanisms, public spending on agricultural R&D has and will continue to distort regional yield gaps. The cumulative impact of these infrastructure and technology barriers have led low-income countries to seek growth of agricultural output through expanding agricultural land and other inputs to production: since 1960, roughly 60 percent of growth in total agricultural output of low-income countries have come from increasing agricultural land use and other inputs. In contrast, high-income countries have reduced land and other inputs of agricultural production and still achieved yield growth by capitalizing on improvements in technology and infrastructure to improve total factor productivity⁴⁴.

Entrepreneurship and R&D will help unleash the innovations can increase agricultural yields and improve resilience and adaptability to climate change

The world is experiencing an era of unprecedented innovation in biotechnology and digital technologies that can have tremendous positive impacts on food production. Advances in biotechnology such as genetic editing (e.g., CRISPR/Cas9) now make it possible to identify, add, or remove plant genes that correspond to specific traits such as drought resistance, pest tolerance, nutritional value, or improved yields at a much lower cost than ever before⁴⁵. Advances in tissue engineering have led to the manufacture of synthetic proteins, or “lab-grown meat”, showing early promise for scalable production. Several digital technologies also have the potential to improve efficiency throughout the value chain. “Precision farming” based on Internet of Things (IoT) and other technologies can unlock new capabilities in crop and livestock management. The introduction of inexpensive sensors and communication points from IoT will allow farmers to monitor and respond to specific conditions affecting their crops. Additional technologies such as agricultural drones and smart greenhouses are also enabling more automated, “precision farming”. Currently, these technologies are being primarily developed for (and adopted by) the developed world. However, over time these technologies will decrease in cost and gain broader adoption across the world, leading to a data driven revolution in food production that will unlock yield

⁴² Rezaei, M., & Liu, B. (2017). Food Loss and Waste in the Food Supply Chain. *Nutfruit*, 26-27.

⁴³ Pardey, P. G., Chan-Kang, C., Beddow, J. M., & Dehmer, S. P. (2015). Long-run and Global R&D Funding Trajectories: The U.S. Farm Bill in a Changing Context. *American Journal of Agricultural Economics*, 1312-1323.

⁴⁴ Fuglie, K., Wang, S., & Ball, V. (2012). *Productivity Growth in Agriculture: An International Perspective*. Oxfordshire, UK: CAB International.

⁴⁵ Rotman, D. (2017, December 19). MIT Technology Review. Retrieved from Gene Editing Could Rewrite the GMO Debate: <https://www.technologyreview.com/s/609805/gene-editing-could-rewrite-the-gmo-debate/>

and productivity gains across all countries⁴⁶. This adoption will have a cascading and decentralizing effect: as global entrepreneurs gain access to these technologies, they will continue innovating on existing production practices, thereby creating new systems of production that improve yields and environmental sustainability in their respective regions.

Guiding principles for recommendations

- Establish domestic and global mechanisms to foster innovation and to identify and fund new technologies for more productive, resilient, and sustainable food chains necessary for future food security
- Prioritize the dissemination and adoption of technology that addresses the agricultural needs of SMEs and small farmers in developing countries that experience productivity gaps

RECOMMENDATION 7: PROMOTE AND FOSTER THE DEVELOPMENT OF INNOVATIVE TECHNOLOGIES TO INCREASE SUSTAINABLE FOOD PRODUCTION ACROSS THE WORLD (E.G., THROUGH BIOTECHNOLOGY, DIGITAL TECHNOLOGIES, ETC.)

POLICY ACTIONS

7.1: Develop and implement public policies to ensure that domestic regulatory frameworks broadly encourage investment in research and development of innovative technologies

7.2: Promote cooperation between academic and business stakeholders to identify challenges to domestic agricultural sustainability and address them by prioritizing key areas for innovation (e.g., soil degradation, water efficiency, GHG emissions, etc.)

7.3: Further expand use of existing multi-lateral funding mechanisms (e.g., CGIAR, GFAR, CABI) to foster early-stage foundational research into agricultural science, ensuring a focus on technologies that improve environmental sustainability and resource efficiency

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- a. The agriculture orientation index for government expenditures (SDG 2.a.1)
- b. CO₂eq emissions per unit of value added (SDG 9.4.1)
- c. Research and development expenditure as a proportion of GDP (SDG 9.5.1)
- d. Researchers (in full-time equivalent) per million inhabitants (SDG 9.5.2)
- e. Material footprint, footprint per capita, and footprint per GDP (SDG 12.2.1)

⁴⁶ Tzounis, A., Katsoulas, N., Bartzanes, T., & Kittas, C. (2017, December). Internet of Things in agriculture, recent advances and future challenges. *Biosystems Engineering*, pp. 31-48.

Relevant SDGs

- Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries (SDG 2.a)
- Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending (SDG 9.5)
- Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities (SDG 9.b)
- By 2030, achieve the sustainable management and efficient use of natural resources (SDG 12.2)

RECOMMENDATION 8: FACILITATE TECHNOLOGY ADOPTION IN DEVELOPING COUNTRIES AND SMES, THROUGHOUT THE FOOD VALUE CHAIN, THAT EXPERIENCE PRODUCTIVITY GAPS

POLICY ACTIONS

8.1: Identify productivity disparities across countries and enterprises and quantify the case for change to attract the partnership of non-profit, business, and local stakeholders

8.2: Establish financing mechanisms for long-term capital investments and knowledge sharing forums to help build capabilities and capacity to improve yields

8.3: Convene relevant business and non-profit stakeholders to build an open-source (and free-to-use) knowledge platform of key agricultural technologies, practices, and other relevant information so that SMEs across the world have equal opportunity to build their capabilities and access markets

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- a. Volume of production per labor unit by classes of farming/pastoral/forestry enterprise size (SDG 2.3.1)
- b. Amount of support to developing countries on research and development for sustainable consumption and production and environmentally sound technologies (SDG 12.a.1)
- c. Number of science and/or technology cooperation agreements and programs between countries, by type of cooperation (SDG 17.6.1)
- d. Number Total amount of approved funding for developing countries to promote

the development, transfer, dissemination and diffusion of environmentally sound technologies (SDG 17.7.1)

Relevant SDGs

- By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment (SDG 2.3)
- Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production (SDG 12.a)
- Enhance North-South, South-South and triangular regional and international co-operation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism (SDG 17.6)
- Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed (SDG 17.7)

RECOMMENDATION 9: INCREASE INVESTMENT FOR SUSTAINABLE AND RESILIENT RURAL INFRASTRUCTURE TO FOSTER SME TECHNOLOGY ADOPTION AND IMPROVE ACCESS TO MARKETS AND KNOWLEDGE

POLICY ACTIONS

9.1: Identify critical domestic infrastructure gaps and quantify their impact on agricultural inefficiency (e.g., due to lack of accessible transportation, electricity, storage, telecommunications, water management systems, etc.)

9.2: Ensure that existing infrastructure funding mechanisms prioritize agriculturally important regions

9.3: Partner with local business stakeholders to raise the necessary funds for long-term improvements in infrastructure

9.4: Invest in alternative and environmentally resilient methods of transport for rural communities (e.g., ports, rivers, roads, trains, etc.)

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- a. Number of (and amount invested into) new infrastructure projects
- b. Total official flows (official development assistance plus other official flows) to the agriculture sector (SDG 2.a.2)
- c. Proportion of the rural population who live within 2 km of an all-season road (SDG 9.1.1)
- d. Fixed Internet broadband subscriptions per 100 inhabitants, by speed (SDG 17.6.2)

Relevant SDGs

- Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries (SDG 2.a)
- Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility (SDG 2.c)
- Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all (SDG 9.1)
- Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism (SDG 17.6)

Commitments by the B20

1. Establish public-private partnerships that facilitate investments towards innovative research and development of technologies that increase environmental sustainability
2. Identify, develop, and transfer environmentally sustainable technologies and practices to SMEs and developing countries by establishing knowledge-sharing peer groups, information platforms, and campaigns to educate and train producers across the food value chain

Other valuable concepts

Additional consideration should be given to policies intended at fostering entrepreneurship across the agricultural industry, and at establishing evidence-based regulatory frameworks that seek to evaluate and approve the use of innovations following scientific standards. Additionally, developing digital information platforms that provide smallholder farmers with more accessible and actionable market and climatic data could greatly help them improve their production decisions, thereby increasing farm productivity, efficiency and resilience. Innovation in packaging also represents an opportunity for the industry to become more environmentally sustainable, and manufacturers and package providers should collaborate on developing technologies and production methods to reduce the resource footprint of food packaging.

Exhibit 4 | Case studies**Name: Sustainable Agriculture Initiative (SAI) Platform⁴⁷****Years:** 2002-present**Description**

- Private collaborative of >90 members of the food industry, mostly multi-national corporations
 - Goal is to ensure a constant, increasing and safe supply of agricultural raw materials grown in a sustainable manner
- Non-profit organization that facilitates sharing of knowledge of technology and best practices across food value chain
- Actively promotes adoption of best environmental practices along supply chain through collaboration and commitment of member companies

Impact

- Launched Farm Sustainability Assessment (FSA) in 2014
 - Helps farmers and other suppliers review and improve their practices, become more sustainable, and gain market access to member companies
- Example project: implemented consistent sustainability standards that were adopted by entire European sugar beet supply chain

*Note that case studies selected do not reflect an endorsement of best-in-class by the B20 SFS task force

⁴⁷ For more information access:
<http://www.saiplatform.org/>

TOPIC 4: REDUCE BARRIERS TO GLOBAL FOOD TRADE

Summary

The efficient and unencumbered functioning of global trade is critical in ensuring the global supply of food meets global demand, thereby contributing to overall food security. Barriers to global food trade work against sustainably providing food security and can discourage investment in food production and innovation. Therefore, it is vital to both minimize trade distortive barriers and reduce the impact they have on global trade. In this sense, it is paramount for G20 countries to commit to a multilateral, rule-based trade system in order to drive an open and transparent global agricultural and food market. Specific efforts to pursue include enhancing the design and transparency of non-tariff measures, minimizing tariff barriers, reducing distortive domestic support, and prioritizing the needs of agriculture-dependent developing countries. International standard setting bodies (e.g., Codex Alimentarius) provide a foundation of validated guidelines from which countries can work towards harmonization. However, G20 countries should view these as a starting point and strive to take leadership in further developing, integrating and harmonizing multi-lateral trading standards for agricultural products.

Context and main challenges

Global trade in agricultural and food products increased sharply after 2000, but has slowed drastically since 2011 as Doha round WTO negotiations lost traction

After the deadline for implementing WTO Uruguay round agreements for developed countries in 2000 (and the subsequent deadline for developing countries in 2005), global agricultural and food trade tripled in USD terms from 2001-2011 (up from only +20% in 1991-2001)^{48 49}. While part of this growth in value was due to peaking commodity prices, volume growth in trade still increased by 60 percent over the same period⁵⁰ (FAO, 2015).

Trade in agricultural products peaked at ~US\$1,400B in 2014 but fell to ~US\$1,300B in 2015, recovering only slightly in 2016⁵¹. This slowdown persisted in volume terms, where growth slowed from ~5 percent in 2001-2007 to ~3 percent in 2011-2015, with ~0 percent growth in 2014-2015⁵². Overall world merchandise trade has rebounded since then, estimated to have grown 4.7 percent in 2017, and expected to grow by 4.4 percent in 2018⁵³.

Commodities make up ~90 percent of volume and ~60 percent of value in global agricultural and food trade, with the top 6 (wheat, maize, soybeans, palm oil, rice and sugar) accounting for two thirds of total traded weight. Livestock products, while traded at lower levels globally (frequently due to trade barriers), are also significant for some countries both in terms of consumption and exports.⁵⁴

Import tariffs to agricultural commodities have decreased progressively, but quotas and subsidies persist, and growing non-tariff barriers still inhibit global trade

⁴⁸ World Trade Organization. (2016). The WTO Agreement Series - Agriculture.

⁴⁹ FAO, 2017

⁵⁰ FAO. (2015). The State of Agricultural Commodity Markets. Rome.

⁵¹ FAO, 2017

⁵² OECD/FAO. (Agricultural Outlook 2017-2026). 2017. Paris: OECD Publishing.

⁵³ WTO. (2018). Press Release 820: Trade Statistics and Outlook. Geneva: WTO.

⁵⁴ Greenville, J., K. Kawasaki and R. Beaujeu (2017), "How policies shape global food and agriculture value chains", OECD Food, Agriculture and Fisheries Papers, No. 100, OECD Publishing, Paris.

Applied average tariffs for agricultural products were around 15 percent in 2014, although average bound tariffs on agriculture are considerably higher, and prohibitive tariffs (that effectively block trade), tariff peaks (extremely high tariffs) and restrictive tariff rate quotas remain in some markets (particularly livestock products and sugar). Additionally, the average applied tariff level for agricultural goods is still above that of other sectors (2% in the same period)⁵⁵.

While agro-food tariffs have progressively been reduced through the WTO Uruguay Round implementation period and bi- and multi-lateral preferential trade agreements, the number of non-tariff measures has proliferated globally. While some of these are intended to meet legitimate policy objectives (such as the protection of human, animal or plant health or safety), they can also act as obstacles to trade – either because of poor design or due to a protectionist rationale – and can be described as “non-tariff barriers”. The WTO reports that Sanitary/Phytosanitary (SPS) and technical measures (TBT) are the main area of concern in agri-food trade, with the number of trade concerns raised over these measures increasing from around 1,500 in the year 2000 to close to 8,000 in 2010⁵⁶. Nonetheless, other studies report that procedural obstacles (such as slow or onerous border administration processes) are also significant. In 2012, compliance with non-tariff measures was estimated to be four times costlier than tariffs for agricultural product exports from developing countries (ad-valorem equivalent)⁵⁷.

Equally importantly, production- and trade-distorting subsidies also significantly disrupt markets and trade. These distortions contribute to the misallocation of resources in subsidizing countries but also undermine comparative advantage and harm efficient producers in other countries, including in developing regions. OECD has estimated that on average, US\$ 519 billion per year in government support (whether subsidies, administered prices or other forms of support) has been provided to agricultural producers in the period from 2014-2016, accounting for 16 percent of gross farm receipts^{58 59}. Under WTO rules, many countries retain the right to use high levels of production-distorting subsidies even though actual spending has fallen below these levels. This can in turn lead to the creation of disproportionate national-level stocks that distort international prices, or even to the promotion of environmentally negative practices among producers, such as post-harvest losses.

Developing countries are in a particularly vulnerable position due to tariff escalation and technical/infrastructural limitations

Agriculture exports account for more than one third of total export earnings for almost 50 developing countries, and for 40 of them this sector accounts for over 50 percent of export earnings. As a result, access to markets is critical for their sustainability⁶⁰.

Tariffs can pose particular challenges to developing countries. In some cases, tariffs remain a significant barrier to trade. In others, even where developing country exporters may have enjoyed significant tariff preferences⁶¹, the preferential margin may

⁵⁵ Greenville, J. K. (2017). How policies shape global food and agriculture value chains. Paris: OECD Publishing.

⁵⁶ Ibid.

⁵⁷ UNCTAD. (2013). Non-tariff measures to trade: Economic policy issues for developing countries. New York and Geneva.

⁵⁸ OECD. (2016). Agriculture Policy Monitoring and Evaluation.

⁵⁹ The OECD report covers an assessment of 52 countries accounting for two-thirds of global agricultural production.

⁶⁰ OECD/WTO, 2013

⁶¹ Under WTO or other rules such as the Generalized System of Preferences or unilateral duty-free access for developing countries

have been eroded by negotiations by other trading partners of preferential trade agreements in key export markets⁶². Additionally, tariff escalation is also a particular challenge that inhibits developing countries from adding greater value to their exports, with weighted average tariffs on final agricultural or food products (such as cocoa beans/chocolate or coffee beans/processed coffee) surpassing those on unprocessed basic commodities by 500 percent⁶³.

NTM proliferation also puts developing countries at particular risk, given that requirements dependent on technical expertise or involving proportionately high fixed trade costs are difficult to comply with, given gaps that exist in capabilities, production technology or infrastructure⁶⁴.

Lastly, inefficient supply chains are a key challenge to the integration of developing countries to global markets. Improving bottlenecks in border administration and transport infrastructure can have six times the effect on GDP as removing tariffs⁶⁵. These bottlenecks primarily relate to NTBs and inadequate infrastructure.

For all these reasons, a shared commitment to coordinate efforts towards more inclusive and sustainable international trade policies is required in order to ensure that the benefits of trade are shared more broadly, helping to reduce inequality and poverty. As such, the full implementation of the WTO Trade Facilitation Agreement will play a critical role in advancing this commitment.

Overall, by enhancing the design and transparency of non-tariff measures, minimizing tariff barriers and reducing distorting domestic support, G20 leadership can significantly improve the global economy. Achieving an increase of global agricultural trade of 10 percent could raise global GDP by as much as \$130 billion and help support 3 million new jobs⁶⁶.

Guiding principles for recommendations

- Remain committed to a multilateral, rule-based trade system and avoid trade restrictive measures by stressing the importance that an open and transparent global agricultural and food market has for inclusive economic growth and sustainability
- Reduce unnecessary complexity, conflicting requirements and unwarranted restrictions on trade arising from NTBs, and work towards mutual recognition of domestic and regional standards by fully respecting the WTO SPS and TBT Agreements, adopting good practices in the development of trade-related regulations and ensuring that all non-tariff measures are as non-trade-restrictive as possible
- Prioritize the needs of developing countries by strengthening their capabilities and reducing tariffs, non-tariff barriers and distorting subsidies in order to enhance their access to global markets as a means to foster their sustainable development

⁶² UNCTAD, 2016

⁶³ Greenville, 2017

⁶⁴ UNCTAD, 2016

⁶⁵ WEF, 2013

⁶⁶ Peterson Institute for International Economics, 2013. "Payoff from the World Trade Agenda 2013"

RECOMMENDATION 10: ENHANCE THE DESIGN, TRANSPARENCY AND IMPLEMENTATION OF NON-TARIFF MEASURES APPLIED TO AND AFFECTING AGRI-FOOD TRADE, AND REDUCE AND ELIMINATE EXISTING NON-TARIFF BARRIERS TO TRADE

POLICY ACTIONS

10.1: Strengthen the criteria for domestic support to be considered non-trade-distorting, including in respect of policies with environmental or sustainability objectives

10.2: Ensure that existing national and regional agri-food trade regulations are fully consistent with WTO SPS and TBT Agreements, suppressing all standards that are not technically-justified or science-based and striving to build on internationally approved and recognized standards

- a. For SPS: Codex, OIE, IPPC
- b. For TBT: Strengthen the role of Codex in the definition of principles for guiding countries in the development of labelling systems, in order to avoid unilateral advances that become technical barriers to trade

10.3: Enforce application of SPS and TBT agreements among WTO member states, making use of its faculties for dispute-resolution

10.4: Ensure that the development and implementation of NTMs is transparent and fully consistent with WTO rules

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- a. Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES) (SDG 2.1.2)
- b. Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES) (SDG 2.1.2)

Relevant SDGs

- By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round (SDG 2.1)
- Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda (SDG 17.10)

RECOMMENDATION 11: COMMIT TO ELIMINATING OR SIGNIFICANTLY REDUCING THE EFFECTS OF TARIFF BARRIERS AND TRADE-DISTORTIVE DOMESTIC SUPPORT BY FULLY IMPLEMENTING NEGOTIATED WTO AGREEMENTS REGARDING AGRICULTURE (INCLUDING THE BALI AND NAIROBI PACKAGES), IMPLEMENTING THE NEW WTO TRADE FACILITATION AGREEMENT AND SUPPORTING CONTINUED WTO NEGOTIATIONS TO ENHANCE AGRI-FOOD MARKET ACCESS, PRIORITIZING LIBERALIZATION IN MARKETS AND SECTORS OF INTEREST IN DEVELOPING COUNTRIES DEPENDENT ON AGRICULTURAL TRADE

POLICY ACTIONS

11.1: Prioritize WTO negotiations to continually reduce tariffs on agricultural trade in ministerial conferences, with special focus on reducing tariffs on products that affect developing countries

11.2: Ensure full implementation of the Nairobi package agreement of 2015 regarding agricultural export subsidies, with special urgency on products produced by developing countries

11.3: Renew negotiations on reducing trade distortive domestic support to achieve a successful agreement in the next WTO ministerial conference

11.4: Put an end to harmful and illegal fisheries subsidies that are enhancing fishing capacity in a situation of international overfishing

11.5: Implement remaining Bali package decisions regarding public stockholding of food, quota administration, services that qualify for Green Box support, reduction of export subsidies and enhancement of transparency and monitoring

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- a. Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES) (SDG 2.1.2)
- b. Agricultural export subsidies (SDG 2.b.1)
- c. Proportion of tariff lines applied to imports from least developed countries and developing countries with zero-tariff (SDG 10.a.1)
- d. Worldwide weighted tariff average (SDG:17.10.1)
- e. Developing countries' and least developed countries' share of global exports (SDG 17.11.1)

- f. Average tariffs faced by developing countries, least developed countries and small island developing States (SDG 17.12.1)

Relevant SDGs

- By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round (SDG 2.1)
- Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round (SDG 2.b)
- Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements (SDG 10.a)
- Promote a universal, rules-based, open, non-discriminatory and equitable multi-lateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda (SDG 17.10)
- Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020 (SDG 17.11)
- Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access (SDG 17.12)

RECOMMENDATION 12: MOVE TOWARDS REGULATORY COHERENCE AT A COUNTRY AND REGIONAL LEVEL OF RULES THAT IMPACT TRADE OF AGRI-FOOD PRODUCTS (E.G. FRONT-OF-PACK LABELING, CONSUMER CARE, TRADE, AMONG OTHERS) AIMING TO ACHIEVE GLOBAL EQUIVALENCE, MUTUAL RECOGNITION, AND INCREMENTAL PROGRESS TO CONVERGENCE, STRIVING TO BUILD ON INTERNATIONALLY APPROVED STANDARDS:

- **FOR SPS: CODEX, OIE, IPPC**
- **FOR TBT: STRENGTHEN THE ROLE OF CODEX IN THE DEFINITION OF PRINCIPLES FOR GUIDING COUNTRIES IN THE DEVELOPMENT OF LABELLING SYSTEMS, IN ORDER TO AVOID UNILATERAL ADVANCES THAT BECOME TECHNICAL BARRIERS TO TRADE**

POLICY ACTIONS

12.1: Work with the private sector to assess country-level and regional regulations negatively impacting trade of agri-food products

12.2: Conduct research in collaboration with Codex to determine the impacts of different labeling systems and their impact on consumer decisions and foreign trade

12.3: Define international standards setting bodies such as Codex-OIE-IPPC as the unique forum for discussion of conflictive regulations and setting of internationally recognized rules

12.4: Align regulations impacting trade to ensure compliance with international standards setting bodies, avoiding the establishment of these as effective barriers

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- a. Number of countries adhering to Codex guidelines on labeling
- b. Number of unilateral country initiatives regarding the food industry
- c. Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES) (SDG 2.1.2)
- d. Developing countries' and least developed countries' share of global exports (SDG 17.11.1)

Relevant SDGs

- By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round (SDG 2.1)
- Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020 (SDG 17.11)

Commitments by the B20

1. Collaborate with the public sector to identify barriers and other obstacles to trade, and facilitate the process of eliminating or reducing them - increasing visibility of the existence and status of said obstacles to the supply chain
2. Strengthen the work of the sectoral associations regarding the industry's advocacy for Codex, and promote enhanced public and private participation in multi-lateral organizations such as Codex, OIE, and IPPC activities, with a particular focus on harmonizing nutritional labeling guidelines
3. Actively contribute to the integration to global markets of local agri-food supply chains in developing countries by establishing special sourcing strategies

Other valuable concepts

Besides the recommended policy items, further consideration should be given to initiatives aimed at promoting the digitalization of border services, or that facilitate the implementation of “single-window” systems for trade. More broadly, exploring any regulatory setting that is open to innovative technologies and enhances supply-chain integration and efficiency would be extremely productive. Additionally, further work is needed to enhance the integration of SMEs and smallholder farmers (especially in developing countries) to global markets. For instance, enhancing their capability to meet trade requirements and ensuring greater accessibility to accurate and timely market information is crucial. For SMEs and small farmers, cooperatives can be the mechanism by which they gain access to markets, but it is imperative that these cooperatives have access to the necessary information and expertise to build capabilities. In this sense, investment in knowledge sharing and technical extension platforms and continued development and improvement of the platforms such as AMIS would contribute greatly towards enhancing smallholder integration.

Exhibit 5 | Case studies

Name: Bovine Foot and Mouth Disease NTB⁶⁷

Years: 2000-present

Description

- Foot and Mouth Disease regulations often exceed those recommended by OIE guidelines on trade of bovine genetic material
- This effectively installs a non-tariff barrier to trade, which affects countries with areas which need vaccination
- Countries included in this group are from various regions such as Southern Africa, South America, Northern Asia, South-East Asia and Eastern Europe

Impact

- Countries with vaccination against FMD face restriction to exports to 7 of the top 10 importers of bovine semen in the world

*Note that case studies selected do not reflect an endorsement of best-in-class by the B20 SFS task force

⁶⁷ For more information access:
http://www.oie.int/eng/A_FMD2012/docs/en_chapitre_1.8.5.pdf

TOPIC 5: MINIMIZE FOOD LOSS AND WASTE

Summary

Reducing food loss and waste across the value chain is an effective way to address the issues of environmental sustainability and food security while increasing productivity across countries. Fostering the development of circular economies that find ways to reuse food is critical to this undertaking and requires adequate regulatory frameworks and economic incentives to facilitate the role of companies and non-profit organizations. Additionally, increasing investment towards harvest, transport and storage infrastructure can help address food losses in pre-consumption stages and preserve the quality of food products from farm to fork, a particular challenge in developing countries. Simultaneously, in developed countries, consumers play a central role in food waste and need to be educated on the environmental and economic benefits of reducing household and retail waste.

Context and main challenges

A large amount of food is currently being lost or wasted all along the value chain

Currently, 1.3 billion tons (around one third) of food produced in the world is lost or wasted, enough to feed nearly 2 billion people. Total wasted food is valued nearly US\$ 1 trillion, a cost paid throughout the value chain - producers must factor in costs for products they never sell and consumers spend money on food they never eat. For example, the average U.S. family of four wastes \$1,500 worth of food each year⁶⁸.

Of all the food lost or wasted, 55 percent occurs in developed countries, driven largely by waste in consumption. This waste is a result of many factors, including consumer behavior at the household level, food service practices, and unclear labeling of dates and serving sizes. The remaining 45 percent occurs in developing countries, driven mainly by pre-consumption losses. These losses occur at multiple points in the value chain because of a lack of access to infrastructure, technology, best practices and market transparency⁶⁹.

Achieving a reduction in food loss and waste can have a significant and multisector impact, simultaneously reducing environmental footprint, economic losses and food insecurity

Food that is ultimately lost or wasted consumes ~10 percent of world's energy⁷⁰ (FAO, 2014), 20 percent of its freshwater, uses 30 percent of agricultural area⁷¹ and generates 8 percent of CO₂ equivalent emissions⁷². Reducing loss and waste will be a critical area to address the problems of resource utilization and carbon emissions from agricultural activity.

In addition to the environmental impact of producing food that is lost or wasted, disposing of lost or wasted food also imposes a significant stress on the environment. Most wasted food ends up in landfills, which in turn generates massive quantities of CH₄ emissions. For example, in the United States, methane released from food in

⁶⁸ 12.3 Champions. (2017). *SDG Target 12.3 on food loss and waste: 2017 progress report*.

⁶⁹ World Resource Institute (WRI) (2013). *Reducing food loss and waste*.

⁷⁰ FAO. (2014). *Future of food and agriculture*.

⁷¹ WEF (2014)

⁷² Committee on World Food Security (CFS) High Level Panel of Experts on Food Security and Nutrition (HLPE) (2014). *Food losses and waste in the context of sustainable food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security*, Rome 2014.

landfills contributes ~16 percent of total CH₄ emissions⁷³.

Finally, reducing loss and waste will help safeguard future food security as the global population continues to grow and demand more food. A 50 percent reduction in current food loss and waste corresponds to roughly 25 percent of the additional food that will be required to feed the world in 2050⁷⁴.

Guiding principles for recommendations

- Minimize food loss and waste across the value chain, from agricultural production to waste in consumption and retail, in order to develop efficient and sustainable food systems
- While some food waste is inevitable, circular economies in the food value chain can reduce environmental impact, increase efficiency, and provide broader food security

RECOMMENDATION 13: DESIGN AND IMPLEMENT AN ADEQUATE FRAMEWORK OF REGULATION AND INCENTIVES THAT PROMOTES CIRCULAR ECONOMIES, STRENGTHENING THE ROLE OF NON-PROFITS AND COMMUNITY ORGANIZATIONS DEDICATED TO REDUCING WASTE BY LEVERAGING EVERY POSSIBLE USE CASE OF FOOD

POLICY ACTIONS

13.1: Standardize and harmonize measurements and methodologies to quantify food loss and waste across countries to enable an accurate assessment of social and environmental impact and data-driven comparisons across countries

13.2: Reflect the environmental impacts of food loss by establishing a prioritized structure of for the uses of discarded food

- a. Prioritize donations of consumable food before using it in animal feed or composting, and finally disposing it in an environmentally efficient manner

13.3: Develop a legal framework to reduce the legal liability of food donations

- a. Compare the benefits and impacts of different donation models of countries that have similar regulations to limit legal liability of donors and encourage food donations (e.g., USA's Good Samaritan Laws)
- b. Approve a domestic legal framework to achieve best results and ensure health safety, with the input of the private sector (to allow for flexibility of different operating models and room for innovation)

⁷³ United States Environmental Protection Agency (EPA). (2018). *Inventory of U.S. Greenhouse Gas Emissions and Sinks*.

⁷⁴ WRI (2013)

- c. Strengthen the role of non-profits and community organizations involved in the food donation model

13.4: Establish economic incentives that discourage waste and establish markets for alternative or secondary uses of food

- a. Foster early-stage development of these markets through credits, tax incentives, loans, or subsidies until markets have viable scale to be economically self-sustaining

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- a. Number of countries that legal frameworks that encourage food donation
- b. Number of countries with fiscal or economic incentives that promote secondary uses of food (over landfills)
- c. Tons of food that avoided placement in landfills (e.g., reused through secondary uses)
- d. Reduced emissions from food diverted away from landfills
- e. Global Food Loss Index (SDG 12.3.1)

Relevant SDGs

- By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses (SDG 12.3)
- By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse (SDG 12.5)

RECOMMENDATION 14: INCENTIVIZE INVESTMENTS TOWARDS STORAGE FACILITIES, ENERGY AVAILABILITY, TRANSPORTATION, ACCESS TO TELECOMMUNICATIONS AND OTHER INFRASTRUCTURE TO REDUCE FOOD LOSSES IN DEVELOPING COUNTRIES

POLICY ACTIONS

14.1: Create a fund (e.g., through World Bank's IDA) **dedicated to identifying critical value chains and the most important gaps in infrastructure causing food loss in developing countries**

14.2: Finance infrastructure works such as roads, collection points, cooling systems, access to energy, access to telecommunications, and access to market information

14.3: Partner with businesses to stimulate the adoption of technologies and farming practices at the pre-harvest and harvest stages that aim at reducing food damages and leakages (e.g., through providing microcredits or other financing programs)

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- a. Amount donated to the funds
- b. Tons of new food available for production
- c. Average income of small-scale food producers (SDG 2.3.2)
- d. Global Food Loss Index (SDG 12.3.1)

Relevant SDGs

- By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment (SDG 2.3)
- By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses (SDG 12.3)

RECOMMENDATION 15: EDUCATE CONSUMERS ON HOW TO REDUCE FOOD WASTE AT THE HOUSEHOLD LEVEL

POLICY ACTIONS

15.1: Design an education campaign for consumers to raise awareness and encourage them to reduce household waste

15.2: Include information that can help consumers planning or purchasing groceries for meals, checking food stocks, making shopping lists, developing recipes for leftovers, better using of refrigerators and freezers for storage, better understanding date labels

15.3: Create a public-private partnership to implement the campaign through different media channels (e.g., radio, digital, television, print, etc.) and distributions at retail locations, public events, or other community engagements

Key Performance Indicators (KPIs)

B20 suggests to monitor the progress of these initiatives by tracking:

- a. People reached by communication campaign
- b. Number of countries where such a program is implemented
- c. Tons of food waste avoided
- d. Global Food Loss Index (SDG 12.3.1)

Relevant SDGs

- By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses (SDG 12.3)
- By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse (SDG 12.5)
- By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature (SDG 12.8)

Commitments by the B20

1. Strengthen work in partnership with NGOs dedicated to saving and redistributing food, such as food banks
2. Work in a multi-stakeholder approach on campaigns that raise awareness about the impacts of food loss and waste, and educate consumers on best practices regarding food use and conservation
3. Measure food loss during production and logistics in own value chain and food waste in retail and consumption using internationally approved measuring methods and set specific KPIs and targets for reduction

Other valuable concepts

Besides the aforementioned policy items and commitments, many others require further consideration from both the public and private sectors. One such item would be adopting common measuring procedures like the WRI Food Loss and Waste Protocol to increase availability and quality of data on key loss and waste points. Another initiative the public sector could take is promoting diversification and upscaling among small farmers to reduce premature farming and reducing production-linked subsidies that lead to over-production. On the other hand, companies can also reduce food loss and waste by developing and adopting packaging that extends product life (provided they are not raising its impact on the environment) and by raising awareness among consumers of the relevance of the issue. Additionally, collaboration across businesses and government stakeholders will help build consistency and compliance on the meaning of differing labels of expiration (e.g., “use before” or “best before”) which may confuse the consumer and can lead to premature food waste.

Exhibit 6 | Case Studies

Name: Champions 12.3⁷⁵

Years: 2015 – present

Description

- Coalition of executives from governments, businesses, international organizations, research institutions, farmer groups, and civil society

⁷⁵ For more information access: <https://champions123.org/>

- Dedicated to accelerating progress towards Target 12.3, which calls for:
 - Cutting in half per capita global food waste at the retail and consumer level
 - Reducing food losses along production and supply chains
- Through better quantifying food loss and waste and monitoring progress towards 12.3, the group hopes to identify, pursue, and showcase the proven strategies of success

Impact

- The group publishes progress reports, resolutions, and showcases best practices reaching the SDG goal
 - In a study of investments in food loss and waste reduction by the private sector, the group found that the average benefit-cost ratio was 14:1
- In a recent review of the hotel industry, the group developed a viable business case for reducing food loss and waste
 - Hotels experienced 21 percent decrease in kitchen food waste
 - With an initial investment of less than \$20K, 70 percent of hotels had recouped their initial investment within one year (while 95% recouped their investment by year 2)

*Note that case studies selected do not reflect an endorsement of best-in-class by the B20 SFS task force

ANNEX**SCHEDULE OF TASK FORCE EXCHANGES**

#	Date	Location	Theme
1	March 7 th , 2018	Teleconference	Task Force Kick-Off: topic selection based on survey results
2	April 6 th , 2018	Córdoba, Argentina	1 st in person meeting: discuss first draft
3	May 4 th , 2018	Teleconference	2 nd call: review 1 st iteration cycle and 2 nd draft
4	May 28 th , 2018	Paris, France	Joint Task Force Meeting: discuss 3 rd draft
5	June 29 th , 2018	Teleconference	3 rd call: close final draft
6	July 25 th -26 th , 2018	Buenos Aires, Argentina	B20 Sustainable Food System Seminar and side events: 1 st advocacy meetings
7	October 5 th , 2018	Buenos Aires, Argentina	B20 Summit: 2 nd advocacy meeting

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