

“Sustainable and Healthy dietary patterns addressing climate mitigation while promoting health”

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The contents of this submission are based in part, on the UN System Standing Committee on Nutrition (UNSCN) discussion paper “Sustainable Diets for Healthy People and a Healthy Planet”.

Introduction

The Paris Climate Agreement, adopted in 2015, ushered in a new era in the global response to climate change and the protection of health and human survival. The Agreement aims to keep the global temperature rise this century well below 2°C above pre-industrial levels, and to pursue efforts to limit the increase to 1.5°C in order to prevent the worst impacts of the changing climate (IPCC, 2018).

Mitigation efforts that focus on transforming the food system can bring health co-benefits by promoting more sustainable and healthier and more sustainable diets, limiting the demand for GHG-intensive foods and low food waste is a key factor in reducing emissions from agriculture and could be achieved through shifts to healthier and more sustainable diets (IPCC, 2018) .

The Paris Agreement and the Intended Nationally Determined Contributions (INDCs) and Nationally Determined Contributions (NDCs) have overlooked that dietary patterns, and other health promoting approaches, such as active transport, are extremely important factors in addressing climate change. The Talanoa Dialogue provides an important opportunity for parties and stakeholders to hold an open and frank dialogue about what is needed to meet the Paris targets and increase ambition. In this context, the Talanoa Dialogue should address largely unacknowledged, but critical issues related to healthier dietary patterns, and other health promoting approaches, in order to contribute to the 1.5 C Goal. This submission addresses the three questions posted by the Dialogue in relation to shifts to more sustainable healthier dietary patterns and food procurement: *Where are we?; Where do we want to go?; and, How do we get there?*.

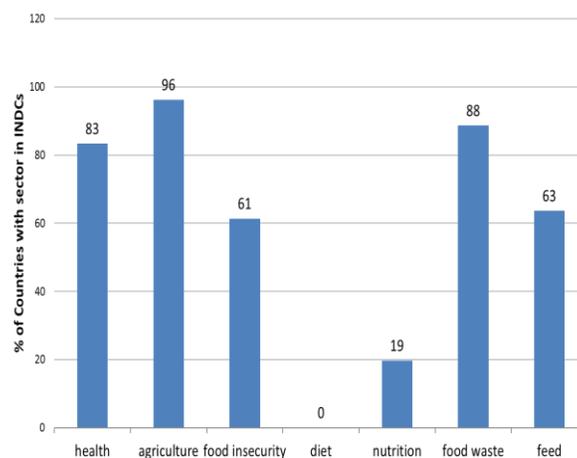
Where are we?

Food production and consumption are responsible for up to 30% of the human-induced GHG emissions (Niles et al. 2018). Emissions from food and agriculture could rise by as much as 80% in 2050 due to the increased demand of animal products. Despite the potential of to accelerate climate action, the INDCs and NDCs, as currently submitted by Parties, may not be enough to keep the 1.5 C goal. Indeed, if not addressed properly, food-related GHG emissions could account for half of all emissions allowed by targets for keeping the global rise in temperature to less than 2°C by 2050 and and, if unchecked could exceed total permissible levels by 2070 (Hedenus et al. 2014; Springmann et al. 2016a).

At the core of the Paris Agreement are the Intended National Determined Contributions (INDCs) and the Nationally Determined Contributions (NDCs) which lay out national plans to reduce GHG emissions and improve countries' resilience to climate change. The development of guidance on and the periodic revision of NDCs offers an opportunity for the health and nutrition communities to work on strengthening the commitments made in the NDCs, with an eye to integrating food security and the promotion of sustainable and healthy dietary patterns into climate change action plans, both from an adaptation and a mitigation point a view.

In spite the opportunities for meeting the 1.5 C climate goal and co-benefits to health of dietary shifts away from over consumption of animal products and sustainable food procurement, to date the INDCs and the NDCs have not explored agriculture demand-side mitigation options, such as changes in dietary patterns with a view to less GHG-intensive dietary patterns or food procurement (Tirado, 2017) See Figure I.

Figure I. Percentage of countries addressing food related issues such as diet, health, agriculture, nutrition, food waste and feed in the INDCs/NDCs submitted by October 2018 (Source: Tirado et al. in press).



At the same time, current diets with high intakes of meat and animal fats pose a major risks to health leading to increased mortality from diet related diseases such as diabetes type II, coronary heart disease and some cancers. Urbanization and variations in lifestyle have resulted in major shifts toward poor-quality diets and low levels of exercise, leading to a rapid increase in obesity and Non Communicable Diseases globally. The alarming pace of climate and environmental change and consequent impacts on food systems and health, coupled with the rising epidemic of Non Communicable Diseases, requires a major rethinking of how food is produced and consumed.

"Where do we want to go"?

The Paris Climate Agreement states that the right to health will be central to national climate action and recognizes the social, economic and environmental value of voluntary mitigation actions and their co-benefits for adaptation, health and sustainable development. In this context, the promotion of sustainable and healthy dietary patterns is critical to reducing emissions and meeting climate mitigation and public health goals (WHO, 2016; Tirado, 2017; IPCC, 2018).

The Intergovernmental Panel of Climate Change (IPCC) highlighted the opportunities to achieve co-benefits from actions that reduce climate-altering emissions and also improve health, such as shifting

consumption away from animal products especially of ruminant origin, towards less emissions-intensive and healthy diets, in high meat-consuming societies (IPCC 2018)¹.

Decreasing the amount of animal sourced foods in the diets in high meat consumption countries needs to become a central aspect of climate mitigation strategies to keep the 1.5 C Goal (Hedenus et al. 2014; Ripple, 2014; IPCC, 2018). In this context, it is critical to promote demand-side climate mitigation options such as changes in dietary patterns towards less GHG-intensive, healthier, more plant-based diets. A general transition to more plant-based diets could lead to lower GHG emissions and likely reductions in diet-related non-communicable diseases.

How do we get there?

Strategies, policies and measures to make dietary patterns healthier and sustainable may include economic interventions, changes to the governance of production or consumption, regulations and other transformative approaches. Transformative approaches to sustainable food policies may involve subsidizing or providing economic incentives for the production and consumption of more fruits, vegetables and pulses, inclusion of sustainability criteria in dietary guidelines, taxing excessive meat consumption, conducting public education campaigns and educational programs in schools, labelling, promoting collaboration and shared agreements among others (Tirado, 2017; Halloran et al., 2018).

Positive shifts towards more plant based diets can be brought about by economic incentives that align the marketing practices of retailers and distributors with public health and climate goals. Public-sector incentives for food service and food procurement companies are a potential way of promoting dietary shifts to plant protein (WRI, 2016). Such incentives can encourage the development of healthier foods and food labelling (for nutritional content, carbon and water footprints, etc) in a way that helps consumers achieve nutritional requirements while meeting environmental goals.

Food-based dietary guidelines that include sustainability criteria are key to changing dietary patterns towards more sustainable, healthier diets (FAO/FCRN, 2015). Transitioning towards more plant-based diets in line with WHO and other international dietary guidelines could decrease global mortality, shrink the global food gap and substantially reduce diet-related GHG emissions (Green et al. 2014; Springmann et al. 2016b).

Dietary shifts may bring numerous challenges and need for behavioural change. Innovative education campaigns that target young consumers, in particular, as well as children may bring about behavioural change. Educational initiatives to increase consumer knowledge and informed decision making, as well as incentives to make healthier foods such as fruits and vegetables more affordable and accessible is critical (Jacoby et al. 2014; Halloran et al., 2018).

Policies including food, agriculture, health, and nutrition, dietary guidance, environment, water, trade, transportation and economics need to be integrated via a multi-stakeholder process to promote sustainable and healthy food dietary patterns that include plant-based alternatives (Tirado, 2017). Governments should work with industry to encourage investment in the research and development of alternatives to animal based protein, including plant-based proteins, develop a regulatory environment

¹ It is important to highlight, however, that in regions affected by severe undernutrition, where people often relying on few staple crops, higher meat intake might be nutritionally beneficial.

to support such innovation (Wellesley et al. 2016; WRI, 2016) and the translation of science-based targets for policy makers and business.

Investment in research is essential to obtain the data and evidence needed to develop sustainable and healthy diets in different socioeconomic and cultural environments and to measure their contribution to health and climate goals. Assessing and monitoring sustainability outcomes requires a metrics and indicators, a reliable global database of food-consumption patterns & health outcomes and life-cycle analysis of global food supply, in particular, by geo-climatic region (Johnston et al. 2014). This is crucial to providing food related data for Greenhouse Gas Inventories and evidence of the co-benefits to climate and health of sustainable and healthy diets to scientific bodies, such as the IPCC and the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA).

The UNFCCC could facilitate the establishment of SBI/SBSTA Technical expert meeting on Mitigation to guide the mechanisms to address demand side solutions related to sustainable dietary patterns and food procurement in the NDCs and/or through other mechanisms.

There is also a need for effectiveness, monitoring and accountability of investments aimed at establishing sustainable food systems that deliver healthy diets, which are aligned with commitments under the UNFCCC and the World Health Assembly, as well as monitor progress towards the achievement of the Sustainable Development Goals.

* **The Loyola Marymount University (LMU)** Environmental Science Program is committed to academic excellence on environmental and climate sciences and to education on climate change, food, health and sustainability. The Program houses faculty who contribute to the WGI and WGII of the Intergovernmental Panel on Climate Change Assessment Reports. An important mission for LMU faculty is the promotion of justice for all.
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REFERENECES

FAO and Food Climate Research Network (FCRN) (2016) Plates, pyramids and planets. Rome, Italy.

Green R, Milner J, Dangour AD, Haines A, Chalabi Z, Markandya A, Spadaro J, Wilkinson P (2015). The potential to reduce greenhouse gas emissions in the UK through healthy and realistic dietary change. *Climate Change* 129;253-265.

Halloran, A., Fischer-Møller, M.F., Persson, M. and Skylare, E. 2018. Solutions Menu: A Nordic guide to sustainable food policy. Copenhagen, Denmark: Nordic Council of Ministers

Hedenus F, Wirsenius S, Johansson DJA (2014). *The importance of reduced meat and dairy consumption for meeting stringent climate change targets*. *Climatic Change* 124, 79-91.

IPCC, 2018. Global Warming of 1.5 °C. IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.

Jacoby E, Tirado C, Diaz A, Pena M, Sanches A, Coloma M (2014). Family farming, food security and public health in the Americas. *World Nutrition*, June 2014, 5, 6, 537-551.

Johnston J, Fanzo J, Cogill B (2014). Understanding Sustainable Diets: A Descriptive Analysis of the Determinants and Processes That Influence Diets and Their Impact on Health, Food Security, and Environmental Sustainability. American Society for Nutrition. *Advances in Nutrition* 5: 418–429.

Niles, M., Ahuja, R., Barker, T., Esquivel, J., Gutterman, S., Heller, M., Mango, N., Portner, D., Raimond, R., Tirado C. Vermeulen, S. (2018). Climate change mitigation beyond agriculture: A review of food system opportunities and implications. *Renewable Agriculture and Food Systems*, 33(3), 297-308.

Ripple, W.J., Smith, P., Haberl, H., Montzka, S.A., McAlpine, C., Boucher, D.H., 2014. *Ruminants, climate change and climate policy*. *Nature Climate Change*. Volume 4, Issue 1, January 2014, Pages 2-5.

Springmann M, Godfray HCJ, Rayner M, Scarborough P (2016a). Analysis and valuation of the health and climate change co-benefits of dietary change, *Proceedings of the National Academy of Sciences of the United States (PNAS)*, Vol 113 (15), pp. 4146–4151.

Springmann M, Mason-D’Croz D, Robinson S, Garnett T, Godfray HCJ, Gollin D, Rayner M, Ballon P, Scarborough P (2016b). Global and regional health effects of future food production under climate change: a modelling study, *The Lancet*, 387, 1937–46.

Tirado, MC., 2017. “Sustainable Diets for Healthy People and a Healthy Planet”. United Nations System Standing Committee on Nutrition (UNSCN). Discussion paper, Rome.

Tirado, et al. Sustainable and Healthy diets: addressing climate change mitigation while promoting public health. Manuscript to be submitted to the *Bulletin of the World Health Organization*.

Wellesley L, Happer C, Froggatt A (2015) *Changing Climate, Changing Diets: Pathways to Lower Meat Consumption*. Chatham House Report.

WHO, 2016. Strengthening Health Resilience to Climate Change. Technical Briefing for the WHO Conference on Climate and Health 2016.

World Resources Institute (WRI) (2016). Ranganathan, J. Shifting Diets for a Sustainable Food Future: Creating a Sustainable Food Future.