ACCELERATING ACTION AND OPENING OPPORTUNITIES:
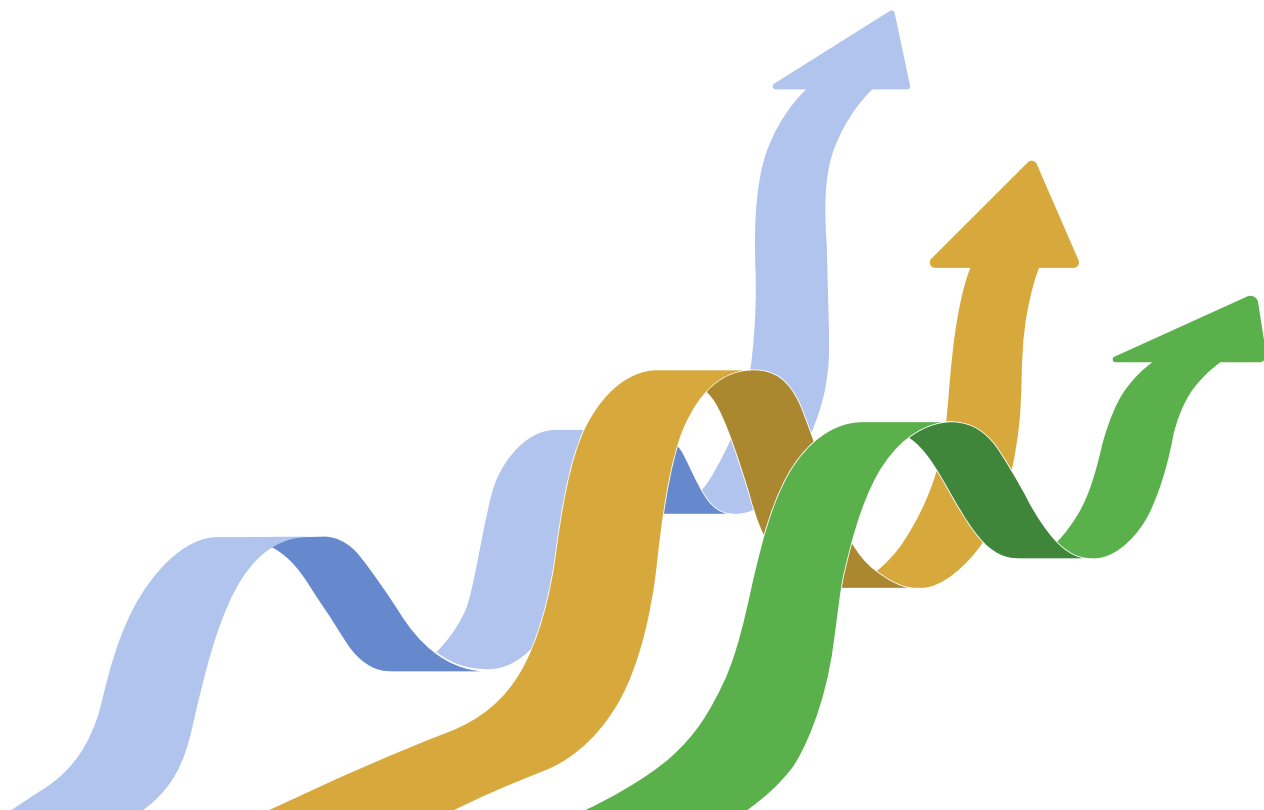## A CLOSER INTEGRATION OF CLIMATE AND NUTRITION

2023 I-CAN Baseline Assessment

I-CAN

gain
Global Alliance for Improved Nutrition

ACCELERATING ACTION
AND OPENING OPPORTUNITIES:
A CLOSER INTEGRATION
OF CLIMATE AND NUTRITION

2023 I-CAN Baseline Assessment

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Foreword

Action to slow climate change is the most fundamental shaper of our planet's wellbeing. Action to advance nutrition status is the most fundamental maker of human development. Bringing these two fundamental forces together to ensure they are working for each other and mutually accelerating action seems obvious, but as this report suggests, integration is weak. There is value in demonstrating this lack of integration, but where this report—and the overall Initiative on Climate Action and Nutrition (I-CAN) – is invaluable is in showing us what to do to improve integration.

There are many options to improve climate action, whether it is to build in climate considerations to government food procurement, to food based dietary guidelines or to global nutrition commitments. All of these are additional opportunities to accelerate climate action – opportunities that are not being grasped at the moment. On the other side of the same coin, there are many opportunities to advance nutrition that can be leveraged for an immediate catalytic effect, for example Green Climate Fund grants can more holistically integrate nutrition components which can strengthen environmental benefits and improve nutrition outcomes, food loss initiatives can be more successful if consumers understand and are motivated not only by the climate implications but also the implications to nutrients, nutrition and good health,

and Nationally Determined Contribution plans and National Adaptation Plans can support achieving multiple national goals simultaneously if they better incorporate aspects that advance the climate agenda and support good nutrition for sustainable development.

As the hosts of COP27 and COP28 we are delighted to see I-CAN flourish. The Government of Egypt launched the I-CAN at COP27 and the Government of UAE is building on its progress at COP28 to emphasise the importance of healthy diets from sustainable food systems. We commend GAIN, FAO, WHO, and SUN for their leadership on this report and we hope governments, businesses, development agencies, and all stakeholders use it inspire further integrated action on climate and nutrition to accelerate both faster than they would if acting on each separately. Nutrition brings people and planet together within a climate frame and we look to I-CAN to accelerate this coming together at COP28 and beyond.

H.E. Mariam Almheiri, *Minister of Climate Change and Environment, Government of UAE*

H.E. Khaled Abdel Ghaffar, *Minister of Health and Population, Government of Egypt*

Glossary

ATACH	Alliance for Transformative Action on Climate and Health
AUM	Assets Under Management
CGIAR	The Consultative Group on International Agricultural Research
CO2	Carbon Dioxide
COP27 / COP28	The 27th / the 28th Conference of Parties
CSOs	Civil Society Organisations
DAC	Development Assistance Committee
EIT	European Institute of Innovation and Technology
ESG	Environmental, Social and Governance
FAO	Food and Agriculture Organisation of the United Nations
FBDGs	Food-Based Dietary Guidelines
FOLU	Food and Land Use Coalition
GAFF	Global Alliance for the Future of Food
GAIN	Global Alliance for Improved Nutrition
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gas(es)
GNR	Global Nutrition Report
GIIN	Global Impact Investing Network
GINA	Global Database on the Implementation of Nutrition Action
HICs	High-Income Countries
IATI	International Aid Transparency Initiative
IBRD	International Bank for Reconstruction and Development of the World Bank Group
I-CAN	Initiative on Climate Action and Nutrition
IDA	International Development Association of the World Bank Group
IFC	International Finance Corporation of the World Bank Group
IHME	Institute for Health Metrics and Evaluation
IHR	International Health Regulations
IPCC	Intergovernmental Panel on Climate Change
JEE	Joint External Evaluation
LMICs	Low and Middle-Income Countries

N4G	Nutrition for Growth
NAF	Nutrition Accountability Framework
NAPs	National Adaptation Plans
NCDs	Non-Communicable Diseases
NDCs	Nationally Determined Contributions
NGOs	Non-Government Organisations
NNPs	National Nutrition Plans
NUS	Neglected and Underutilised Species
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
R&D	Research and Development
SDGs	Sustainable Development Goals
SIDS	Small Island Developing States
SPAR	State Party Self-Assessment Annual Reporting
SUN	Scaling Up Nutrition Movement
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations International Children's Emergency Fund
V&A	Vulnerability Assessments
WASH	Water, Sanitation and Hygiene
WBA	World Benchmark Alliance
WFP	World Food Programme of the United Nations
WHO	World Health Organisation of the United Nations
WRI	World Resources Institute
WWF	World Wide Fund for Nature

Executive Summary

Before the 27th Conference of the Parties (COP27) to the United Nations Framework Convention on Climate Change (UNFCCC), when the Initiative on Climate Action and Nutrition (I-CAN) was formally launched by the Government of Egypt, the worlds of nutrition and climate were relative strangers. The premise of I-CAN is that greater integration of climate thinking, planning, action and finance can open up new opportunities for climate and nutrition action leading to accelerated improvement in outcomes for both. The potential is clear from the companion I-CAN paper 'Climate Action and Nutrition: Pathways to Impact'[1], led by FAO.

But how do we assess current levels of integration and opportunities to strengthen it? That is where this baseline report comes in. It assesses integration and identifies opportunities to act jointly. The bad news in its results is that in general, climate and nutrition are not well connected. The good news is that there are plenty of exceptions, with room for much greater connection and therefore greater action. This report encourages policymakers and scholars in the fields of climate and nutrition to think holistically about inherent connections between their work. Ample opportunities for increasing impact exist, but we are not currently leveraging them.

This executive summary lays out an overview of key findings in each area and recommendations for moving forwards. Results are published on a global or regional level to give an overview of the current state of action, rather than to assess individual countries or organizations. Further data from our analysis can be made available upon request.

Twenty indicators were selected for the I-CAN baseline[2]. These were developed during COP27 in November 2022 as a starting point for measuring where the world currently stands on integrated actions between climate and nutrition, rather than a fully exhaustive list of all relevant areas. This analysis uses a four-level methodology to assess the degree of integration between climate and nutrition. Each data point, for each indicator, is classified as one of four levels ranging from no integration (level 1) to strong integration with concrete plans for action (level 4), as set out in Figure 1. These four levels are used to classify the 1500+ data points for the 13 indicators presented in this report. Future revisions to the baseline indicators and analysis methods are expected, including to make the list more comprehensive and to make the methodology more robust as our understanding of climate-nutrition linkages deepens.

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1 FAO, 2023a

2 20 baseline indicators were originally laid out by the Presidency of Egypt during COP27. Only 13 of them have been analysed in this report due to data availabilities, feasibility, and relevance. More detail on this is explained in Table 1.

Figure 1: Levels of Integration between Climate and Nutrition

Level 1 — No intentional connectedness between climate and nutrition

Level 2 — Some intention to connect climate and nutrition

Level 3 — Intention to mobilise resources to connect climate and nutrition

Level 4 — Commitment to mobilising resources and with distict plans to take action to connect climate and nutrition
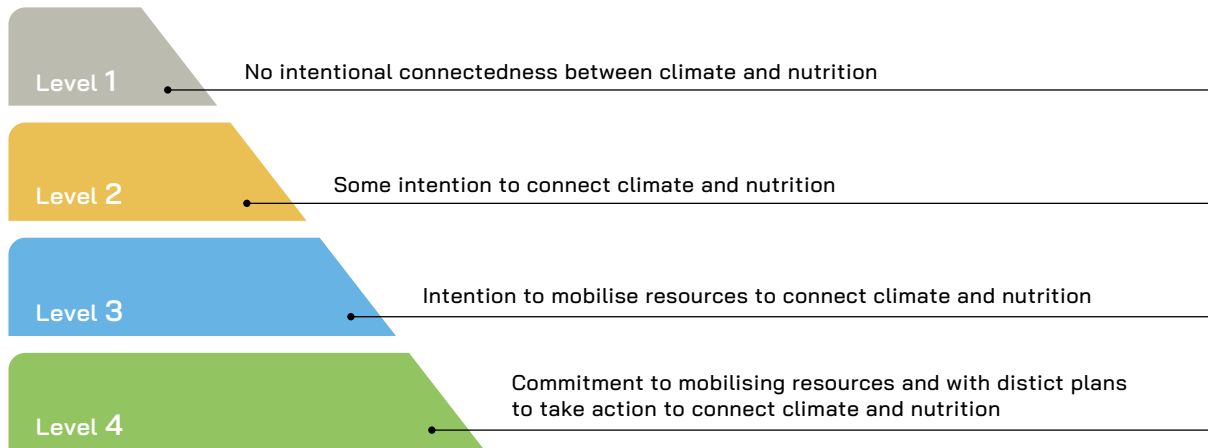
Pillar 1: Implementation, Action, and Support

The first pillar focuses on whether policies and programmes intend to take action to address climate and nutrition. The following three indicators under pillar one are assessed in this report:

▶ **Indicator 1.1** Number of Nationally Determined Contributions (NDCs) that include nutrition-related actions

▶ **Indicator 1.2** Number of climate National Adaptation Plans (NAPs) that include nutrition-related actions

▶ **Indicator 1.4** Number of National Nutrition Plans (NNPs) that refer to climate

These three indicators are all assessed at the country-level.

NDCs showed the lowest levels of climate-nutrition integration overall, with only 2% of NDCs scoring at the highest level of integration (level 4), compared to 16% of NAPs and 28% of NNPs. 60% of NDCs were found to have no intentional connectedness between climate and nutrition (level 1), compared to only 21% of NAPs and 22% of NNPs.

While nutrition may not be mentioned explicitly, many NDCs and NAPs do mention food security. 73% of NDCs and 95% of NAPs mention the keyword 'food security', compared to 40% of NDCs and 79% of NAPs which mention the keyword 'nutrition'.

Although NAPs and NNPs have higher levels of integration than NDCs overall, the majority of documents fall under level 2: linkages have been made between nutrition and climate, but the level of political commitment has not yet reached a stage of taking concrete actions. 40% of NAPs and 34% of NNPs are at level 2.

Pillar 2: Capacity Building, Data, and Knowledge Transfer

The second pillar focuses on issues related to knowledge transfer, capacity building, and data for decision-making. The following three indicators under pillar two are assessed in this report:

▶ **Indicator 2.2a** Number of countries that have conducted a climate change and health vulnerability assessment (V&A) which included nutrition

▶ **Indicator 2.2b** Number of data and knowledge portals that bring climate and nutrition together

▶ **Indicator 2.3** Number of references to nutrition science articles in Intergovernmental Panel on Climate Change (IPCC) reports

▶ **Indicator 2.4** Global Nutrition Report (GNR) tracks nutrition-promoting climate adaptation actions

Indicator 2.2a is assessed at the country-level, while indicators 2.2b, 2.3 and 2.4 are assessed at the global-level.

Analysis of this pillar revealed a mixed picture of integration across different indicators. Both the latest IPCC reports analysed scored at the highest level of integration, with many in-depth considerations of nutrition within the reports. For the GNR, 95% of the stakeholder commitments it monitors do not consider climate or environmental sustainability at all. Most commitments targeting climate improvement came from development agencies or international organizations rather than governments.

96% of the 42 country V&As assessed included some consideration of nutrition. However, only 44% of the countries invited to participate in the V&A analysis had complete information under the 'malnutrition and foodborne illnesses' section.

38% of data and knowledge portals showed no links between climate and nutrition (level 1). A good number of portals do show some analysis of climate-nutrition concepts, but more work needs to be done on portals which cross-link evidence and statistics related

to climate and nutrition, with only 8% of portals displaying this (level 4).

Pillar 3: Policy and Strategy

The third pillar focuses on national and subnational policies, strategies, and guidelines related to food. The following two indicators are analysed in this report:

▶ **Indicator 3.2** Number of country food-based dietary guidelines (FBDGs) that include climate considerations

▶ **Indicator 3.3** Number of countries that factor climate into food procurement decisions for food in public settings (e.g., school meals and school feeding, health and care facilities), as well as safety nets and emergency programmes

These two indicators are both assessed at the country-level.

Three indicators under this pillar could not be accurately assessed, reflecting the complexity of identifying available, accurate and centralised data related to country-level policies and strategies. These two indicators that could be assessed both leveraged existing multilateral, large-scale databases from the United Nations, one of which had imperfect coverage. Therefore, it is possible that climate considerations in public food procurement are higher than this analysis implies.

For both indicators, the majority of countries do not consider climate. 54% of FBDGs and 83% of nutrition-related public food procurement policies are at the lowest level of integration (level 1). Regionally, the most robust considerations for climate and sustainability came from Western and Northern European countries, with Scandinavian countries consistently showing the most in-depth levels of climate considerations.

Many FBDGs include nutrition recommendations which could be aligned with climate objectives, such as eating less ultra-processed food. However, currently these recommendations are made through a nutrition rather than a climate lens, leaving an opportunity to make further explicit connections to climate. There is also a small correlation between newer editions of

FBDGs and increased climate considerations over time.

Pillar 4: Investments

The fourth pillar focuses on investment flows going towards climate and nutrition. The following four indicators are assessed in this report:

▶ **Indicator 4.1** Value of Green Climate Fund (GCF) Initiatives that include nutrition considerations

▶ **Indicator 4.2** Value of World Bank loans that are nutrition and climate supporting

▶ **Indicator 4.4** Number of companies in World Benchmark Alliance (WBA) that score well on nutrition and sustainability

▶ **Indicator 4.5** Value of Official Development Assistance (ODA) to climate that is linked to nutrition

These four indicators are all assessed at the global-level.

A clear trend was present in this pillar: financing and investments for programmes which link both climate and nutrition are very limited. For example, from 2021-2022, only 3% of GCF grants included interventions specifically designed to address nutrition interventions specfically designed to address nutrition (level 4).

For World Bank financing (IBRD and IDA[3]) from 2018-2022, 86% of projects included climate themes, while only 6% of projects included nutrition themes (specifically nutrition, not food security). Fewer than 1% of projects included both climate and nutrition themes.

Out of 350 WBA food and agriculture companies[4], none scored at the highest level of climate-nutrition integration (level 4) and only 10% scored at the next level down (level 3). By monetary value (in USD), only 1% of ODA funding to climate in 2019-2021 explicitly mentioned nutrition, with the number rising to 11% mentioning nutrition-relevant keywords. It is clear that financing is the pillar in which climate-nutrition integration is weakest and most lacking.

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3   *IBRD is the International Bank for Reconstruction and Development. IDA is the International Development Association. Both belong to the World Bank Group. Only IBRD and IDA projects were analysed for this indicator given the accuracy and availability of data.*

4   *The WBA is a non-profit organisation which assesses and ranks some of the world's largest and most influential companies based on their contributions to the United Nations Sustainable Development Goals.*

Summary of All Results

Table 1 presents the results for each indicator, at each classification level[5].

Table 1: Summary of All Indicators and Results[6]

Indicator	Number of Documents Analysed	Level 1	Level 2	Level 3	Level 4
Pillar 1: Implementation, Action and Support					
1.1 **Number of Nationally Determined Contributions (NDCs) that include nutrition-related actions** [7]	166 NDCs	99 NDCs (60%)	41 NDCs (25%)	23 NDCs (14%)	3 NDCs (2%)
1.2 **Number of climate National Adaptation Plans (NAPs) that include nutrition-related actions**	43 NAPs	10 NAPs (23%)	16 NAPs (37%)	10 NAPs (23%)	7 NAPs (16%)
1.3 **Number of climate-informed nutrition interventions and programmes**	Agreed with our partners WHO, FAO, and SUN to drop this as an indicator on its own as this is covered under other indicators e.g., 1.4 on NNPs or 3.2 on FBDGs				
1.4 **Number of National Nutrition Plans (NNPs) that refer to climate**	50 NNPs	12 NNPs (24%)	13 NNPs (26%)	11 NNPs (22%)	14 NNPs (28%)
1.5 **Number of significant multilateral partnerships in the climate-nutrition area**	Analysis was originally conducted on this indicator. However, the I-CAN working group believes the data is not reflective of the true nature of integration between climate and nutrition. See section on indicator 1.5 for explanation.				
Pillar 2: Capacity Building, Data, and Knowledge Transfer					
2.1 **Value of public R&D funding programmes that bridges climate and nutrition**	Insufficient data for accurate assessment. Panel A discusses why this is important, what the current capacities are, and what a database for this might look like.				
2.2a **Number of countries that have conducted a climate change and health vulnerability assessment (V&A) which included nutrition** [8]	42 V&As	2 V&As (5%)	13 V&As (31%)	23 V&As (55%)	4 V&As (10%)
2.2b **Number of data and knowledge portals that bring climate and nutrition together**	26 portals	10 portals (38%)	9 portals (35%)	5 portals (19%)	2 portals (8%)
2.3 **Number of references to nutrition science articles in IPCC reports**[9]	2 reports	0	0	0	
2.4 **Global Nutrition Report tracks nutrition-promoting climate adaptation actions**	434 GNR commitments	414 commitments (95%)	13 commitments (3%)	3 commitments (1%)	4 commitments (1%)

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5 *Percentages for each of the four classification levels shown here may add up to a total of 99% or 101%, instead of 100%, due to rounding. We have kept the data in this format both here and in the subsequent graphs to reflect the most accurate percentages at each of the classification levels.*

6 *In the future, a reorganisation of the indicators may be warranted, as I-CAN continues to develop. This could include re-wording the indicators, re-numbering the indicators, removing current indicators or adding new indicators. We have left here the full original 20 indicators developed during COP27 for full transparency and to match the original wording laid out by the Presidency of Egypt.*

7 *The European Union submitted a joint NDC for 27 countries, which we have counted as 1 NDC in this analysis.*

8 *V&A documents are not available for public access. Insights drawn from WHO Climate Change and Health Survey Report (WHO, 2021b).*

9 *Source: AR6 Synthesis Report: Climate Change 2023 (IPCC, 2023), and Special Report on Climate Change and Land (IPCC, 2019)*

Indicator	Number of Documents Analysed	Level 1	Level 2	Level 3	Level 4
Pillar 3: Policy and Strategy					
3.1 **Number of countries which are promoting climate-smart nutritious foods such as neglected underutilised species (NUS) and fortified/biofortified crops and staple foods**	Insufficient data for accurate assessment. Panel B discusses why this is important, what the current capacities are, and what a database for this might look like.				
3.2 **Number of country food-based dietary guidelines that include climate considerations**	70 FBDGs	38 FBDGs (54%)	18 FBDGs (26%)	6 FBDGs (9%)	8 FBDGs (11%)
3.3 **Number of countries that factor climate into food procurement decisions for food in public settings (e.g., school meals and school feeding, health and care facilities), as well as safety nets and emergency programmes[10]**	93 countries	77 countries (83%)	9 countries (10%)	4 countries (4%)	3 countries (3%)
3.4 **Number of healthy diet campaigns that also refer to sustainability, especially for children**	Insufficient data for accurate assessment. Panel C discusses why this is important, what the current capacities are, and what a database for this might look like.				
3.5 **Number of countries with food control systems adapted to increased food safety risks associated with climate change**	Insufficient data for accurate assessment. Panels D and E discuss why this is important, what the current capacities are, and what a database for this might look like.				
Pillar 4: Investments					
4.1 **Value of Green Climate Fund initiatives that include nutrition considerations[11]**	$4,343M from 51 projects (32 in 2021, 19 in 2022)	$1,320M in 2021 (45%), $958M in 2022 (66%)	$711M in 2021 (25%), $273M in 2022 (19%)	$795M in 2021 (27%), $167M in 2022 (12%	$76M in 2021 (3%), $43M in 2022 (3%)
4.2 **Value of World Bank loans that are nutrition and climate supporting**	For World Bank (IBRD and IDA) financing from 2018-2022, 86% of projects from 2018-2022 included climate themes and 6% of projects included nutrition themes. Less than 1% of projects included both climate and nutrition themes.				
4.3 **Value of food impact investing funds that build in climate considerations**	Insufficient data for accurate assessment. We presented data from the GIIN on investments which target (broadly) SDGs related to climate and SDGs related to nutrition. Panel F discusses why this indicator is important and how to advance its collection in the future.				
4.4 **Number of companies in World Benchmark Alliance that score well on nutrition and sustainability[12]**	350 companies	252 companies (72%)	63 companies (18%)	35 companies (10%)	0 companies
4.5 **Value of ODA to climate that is linked to nutrition**	Organisation for Economic Cooperation and Development (OECD) climate-related financing data from 2019-2022 was analysed. Data is shown in figures 18 and 19.				

10 Analysis for this indicator was conducted by WHO consultant team.

11 Approved funding proposals for all 51 GCF projects (as publicly available on the online GCF project portfolio) from 2021-2022 were analysed. Please see the special note on finance indicators in Annex 2 for more detail.

12 Source: *WBA's 2021 Food and Agriculture Benchmark. Please note that WBA has just released their 2023 Food and Agriculture Benchmark in October 2023. The data used in our baseline analysis was previously publicly available on the WBA website and was collected in April 2023. We have been informed by the WBA team that there have also been updates to their methodology for the latest version of the Food and Agriculture Benchmark. Future developments to the I-CAN baseline analysis should take this into consideration.*

Introduction

Our nutritional status helps determine our individual human potential. At the same time, our ability to mitigate and adapt to climate change will determine our collective potential. Both potentials are under severe stress. The 2021 Global Nutrition Report states that "at the current rate of progress, the global nutrition targets will not be achieved by 2025 globally and in most countries worldwide…. Only seven countries are on track to meet four of the six maternal, infant and young child nutrition targets by 2025, while no country is 'on track' to halt the rise in adult obesity."[13] Only 15% of the United Nations Sustainable Development Goals (SDGs) are on track[14], with progress on SDG 2: "End hunger, achieve food security and improved nutrition and promote sustainable agriculture" behind where it needs to be. To limit global warming to 1.5°C above pre-industrial levels, greenhouse gas (GHG) emissions must peak before 2025 at the latest and reduce by 43% by 2030[15]. Climate change is expected to cause 250,000 additional premature deaths by 2050[16] and to push more than 100 million people into extreme poverty as soon as 2030[17]. We need to act now to leverage opportunities for improving climate and nutritional outcomes.

There are strong scientific, programmatic and policy links between climate and nutrition. For example, nutritious diets low in highly-processed and packaged foods and animal-sourced foods tend to also be lower in GHG emissions. A focus on reducing food loss and waste is good for nutrition as the most perishable foods tend to also be among the most nutritious. There are multiple additional areas where the potential for jointly accelerating nutrition and climate action is clear. Four core systems are identified in a technical paper, *Climate Action and Nutrition: Pathways to Impact*[18], developed by FAO under the work of I-CAN. These include agri-food, water, social protection, and health systems. Win-win solutions can be found for both climate and nutrition, but this potential for joint action will only be realised through an intentional focus on addressing nutrition and climate simultaneously.

The premise of the I-CAN, launched at COP27 under the leadership of the Government of Egypt, is that we can accelerate both climate and nutrition action by addressing the linkages between the two issues.

In this report we ask: how ready are decision makers to take advantages of joint opportunities for accelerating climate and nutrition action? The objective of this analysis is to quantify the extent of integration between climate and nutrition action by establishing a baseline across 20 indicators identified during the I-CAN launch in November 2022, grouped under four pillars:

▶ **Pillar 1:** Implementation, Action, and Support
▶ **Pillar 2:** Capacity Building, Data and Knowledge Transfer
▶ **Pillar 3:** Policy and Strategy
▶ **Pillar 4:** Investment

We have assessed the degree of integration between climate and nutrition for 13 indicators. For 5 indicators, there was insufficient data to establish a baseline. For 2 other indicators, the baseline was not applicable.

Our intention in publishing this analysis is threefold. We hope that these numbers can serve as a mirror, to reflect on where we currently stand. As a beacon, to guide us to where we want to be. Finally, as a spotlight, to discover new opportunities for connection and to learn from each other.

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13 *GNR, 2021*

14 *From the United Nations Secretary General's remarks to the High-Level Political Forum on Sustainable Development, September 2023*

15 *Source: UNFCCC official website*

16 *WHO, 2021a*

17 *World Bank, 2015*

18 *FAO, 2023a*

Key Findings and Themes

African, Asian, and Latin American Countries Leading the Way in Action

Most countries with policies showing a high degree of integration across climate and nutrition are from Africa, Asia, or Latin America and the Caribbean. With NDCs, all Northern American and Western European countries were found to have no integration with nutrition (level 1). In comparison, 58% of African NDCs had nutrition considerations, with 4% falling under the highest level of integration (level 4). This is likely because of higher levels of risk posed by climate change and the higher focus on technical support to nutrition in low and middle-income countries (LMICs). In such countries, the importance of a multisector approach has been emphasized for over a decade, with more nutrition committees than in high-income countries (HICs). It stands to reason that commitments to nutrition would be higher, given the more visible effects of malnutrition, more technical support, and higher political reception to nutrition technical assistance.

Figure 2: NDC Levels by Region (% of total region, N=192)[19]
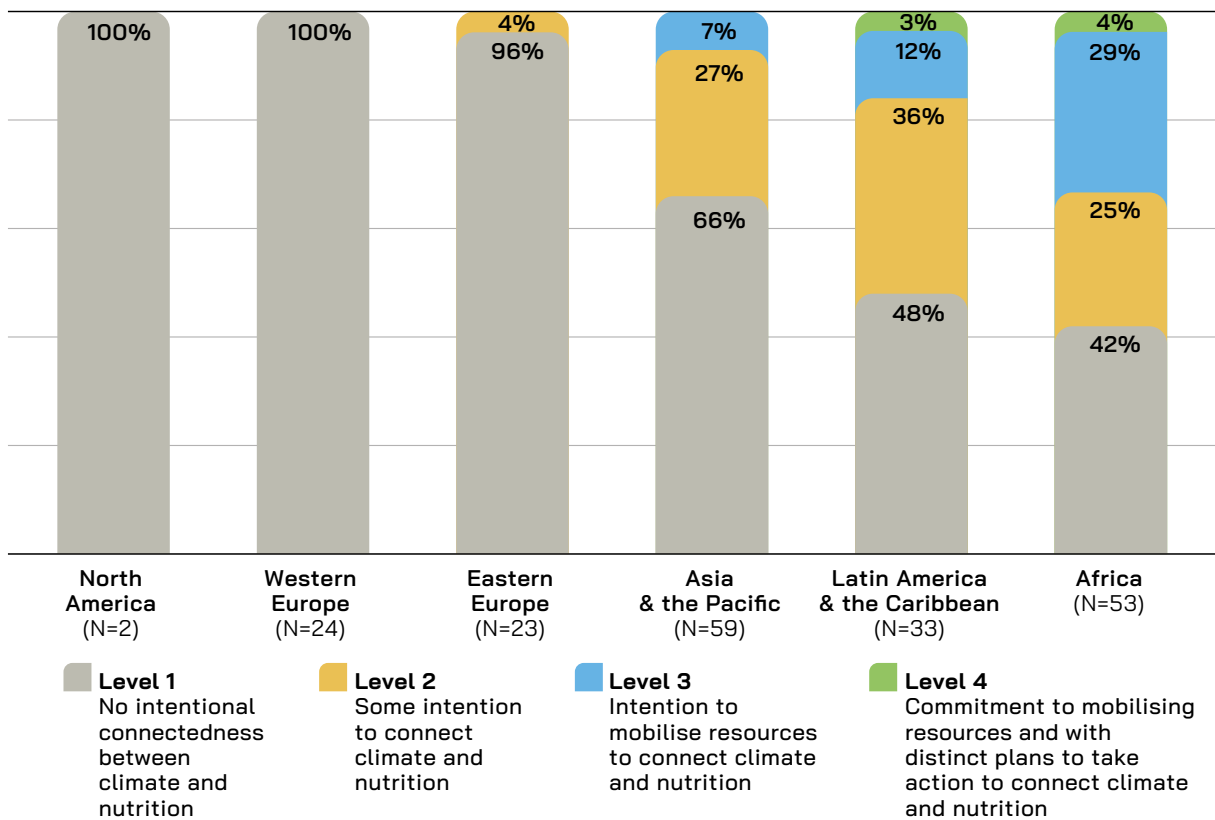
NDCs Source: UNFCCC NDC Registry, version as of June 2023

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19 Regional distributions are taken from member state groupings used by the United Nations Department for General Assembly and Conference Management. Source: Regional Groups of Member States.

Very few high-income countries show high levels of integration. The exception is for sustainable diets, for which Western and Northern European countries emerge as leaders, such as for FBDGs and food procurement.

Nutrition Finance is Lagging Behind Policy

Current funding towards nutrition-related projects is limited. For GCF financing, 66% of funding in 2022 and 45% of funding in 2021 had no links to nutrition specifically. Only 11% of ODA grants from 2019-2021 mentioned nutrition-relevant concepts, and only 1% mentioned nutrition explicitly. While still a work in progress, policy documents show some commitment towards integrating climate and nutrition. Proper financing needs to be implemented to catalyse action in these areas.

For World Bank (IBRD and IDA) financing from 2018-2022, 86% of projects from 2018-2022 included climate themes, compared to only 6% of projects that included nutrition themes (specifically nutrition, as opposed to food security). Less than 1% of projects included both climate and nutrition themes. While climate themes were included in a greater number of projects, the financial commitment to projects which did include nutrition themes was likely to be much higher, although overall nutrition is still significantly less funded than climate.

Nutrition Tends to be Conflated with Food Security and is Underrepresented, but Complementarities between Food Security and Nutrition Also Present an Opportunity

For the purposes of our analysis, we draw a distinction between food security and nutrition. Food security is understood to be focusing on the availability, access to, utilisation of, and stability of food, whereas we consider nutrition to focus additionally on the quality and diversity of food that will allow for good human health and wellbeing.[20] Nutrition also implies a wider focus than just on the food consumed to other relevant pathways, such as in preventing infectious diseases which can cause malnutrition.

For our analysis, this enables us to identify policy documents which consider food security in terms of availability and production, without sufficiently considering the quality of food and its nutritional implications. Whilst recognizing that efforts to improve food security also have strong benefits for nutrition, such as increasing access to healthy diets, food security alone is necessary but not sufficient to ensuring good nutrition. For example, investments to increase agricultural yields may not result in improving nutrition or health if it does not improve both access to enough calories and high-quality diets rich in essential nutrients.[21] If we are not intentional in targeting nutrition explicitly, we fall into the risk of slipping into an excessive focus on calorie sufficiency rather than safe, nutritious, diverse, and healthy diets.

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20 *Ruel, 2013*

21 *Ruel, 2013*

Figure 3: Food Security vs Nutrition Mentions in NDCs and NAPs
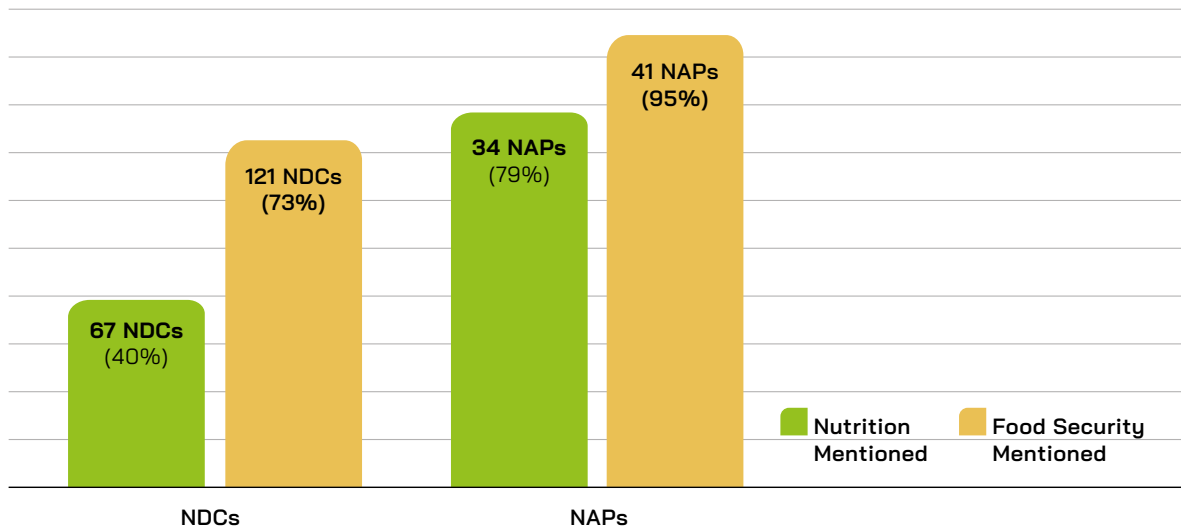
NDCs Source: UNFCCC NDC Registry, version as of June 2023
NAPs source: UNFCCC Submitted NAPs Registry, versions as of June 2023

In our research, we came across a significant amount of policy documents which contain the word 'food security' but not 'nutrition'. 73% of NDCs and 95% of NAPs mention the keyword food security, compared to only 40% of NDCs and 79% of NAPs which mention the keyword nutrition. Without negating that food security also has positive impacts for nutrition, nutrition on its own needs to be higher on policy agendas to mitigate against long-term human health and wellbeing impacts beyond hunger and subsistence.

The good news is that many opportunities exist where nutrition can be complementary to existing focuses on food security. Many GCF initiatives target food and agriculture. Many NDCs mention food security and some related concepts such as processing, packaging, distribution, and storage. Policymakers and relevant actors need to think about nutrition specifically and add these into policies and strategies, to catalyse important outcomes for nutrition improvement.

There Currently is a Lack of Common Definitions, Concepts and Metrics between Climate and Nutrition Actors, Hampering the Speed of Progress and Action

The vast amount of different climate and nutrition concepts used has the potential to create more confusion than consensus when it comes to taking action. Many policy documents use terms interchangeably and lack specificity on how they relate to concrete action (e.g., climate-smart, climate-sensitive, climate-resilient, nutrient-rich, nutrition-sensitive). In our research, we have come across key actors who all understand such concepts in slightly different ways. For example, when trying to determine all agricultural research and development (R&D) that links climate and nutrition (under indicator 2.1), first we must understand which crops are classified as both climate-resilient and nutrient-rich[22]. A lack of consensus on many of these definitions makes such analysis challenging.

This lack of clarity is also affecting the accuracy of our analysis on climate-nutrition linkages. Various methods are used to measure, monitor, and evaluate data.

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22 See more on this in Panel B under indicator 2.1.

Qualitative differences are to be expected, given nuances in subjective understandings. Quantitative differences are slightly more cause for concern. When assessing the amount of GCF funding going towards nutrition, for example, we considered using the existing OECD purpose code for 'basic nutrition'. Under this methodology we would find that 0% of GCF funding explicitly targets nutrition. In our analysis, however, we publish the results based on analysis of the the funding proposals for each GCF project from 2021-2022 and found that 3% of GCF funding targets nutrition. In the absence of an agreed metric in financing data, it is challenging to find a methodology which accurately captures funding for nutrition while remaining feasible to apply across large datasets. Further details on our approach can be found in Annex 2. Mandating and standardizing the reporting of funding for both nutrition and climate would provide much greater clarity on total financing[23].

Integration between Climate and Nutrition is Particularly Low Within the Private Sector

The two indicators linked to action by the private sector both show very low levels of integration between nutrition and climate. Zero WBA companies scored at the highest level of climate-nutrition integration (level 4), with 72% having no links between climate and nutrition (level 1). 95% of GNR commitments also had no links between climate and nutrition. We did not have sufficient data to assess the number of food impact investment funds which consider climate, as this is an emerging field with low data availability. However, the lack of evidence in this area suggests that private-sector financing for climate and nutrition is also low.

Provision of incentives is a way for private-sector actors to improve climate-nutrition linkages. Blended finance is one solution, which has the potential to de-risk investments, enhance financial returns, and scale up impacts. Examples include social impact bonds or green bonds. Other policy tools include promoting favourable regulatory environments such as tax benefits for climate-nutrition investments and government procurement from companies that adopt preferential practices as well as strengthened Environmental, Social and Governance (ESG) approaches. Many opportunities exist to increase private-sector contributions in the climate-nutrition nexus.

Critical Gaps Remain in Data on the Integration Between Climate and Nutrition

Five indicators were not assessed due to the lack of knowledge, evidence, or databases on that topic. The Global Impact Investment Network (GIIN) has data on funding that broadly targets SDGs related to climate and SDGs related to nutrition at the portfolio-level, but there is currently no way to determine this at the granular level.

Most of the 20 indicators would be more accurately captured if data capacities were enhanced. Further difficulties came from the varying frameworks used by different organisations. More resources dedicated to monitoring and disseminating central databases in these areas are warranted.

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23 *Use of the OECD-DAC Marker would be greatly supportive towards achieving this goal. FAO currently utilises nine OECD-DAC policy markers to characterize its entire portfolio, including the nutrition, climate change mitigation, and climate change adaptation markers. More detail on this can be found in Annex 2.*

Opportunities for Climate-Nutrition Advancement

Pillar 1: Implementation, Action, and Support

◗ Increase the integration of nutrition considerations when developing updated NDCs

◗ Leverage high levels of food security consideration in NDCs and NAPs and expand this to also consider nutrition interventions and policies

◗ Leverage current levels of understanding of climate-nutrition linkages in NAPs and NNPs to catalyse this into action-oriented strategies[24].

Pillar 2: Capacity Building, Data, and Knowledge Transfer

◗ All stakeholders could take advantage of strong levels of nutrition integration in current IPCC reports to maintain or increase nutrition considerations in future reports

◗ Climate and nutrition stakeholders could push for increased climate considerations within Global Nutrition Report commitments, especially for country governments, during the next Nutrition for Growth (N4G) summit in France in 2024

◗ Member states could do more to develop climate change and health V&As while also strengthening sections on malnutrition and foodborne illnesses

◗ Development agencies could come together to ensure data and knowledge on nutrition and climate linkages is available to decision makers at all levels, leveraging and adding to existing data and evidence portals to cross-link climate and nutrition evidence

Pillar 3: Policy and Strategy

◗ Key stakeholders could do more to develop databases that cover topics relevant to the policy nexus of climate and nutrition, such as NUS, biofortified crops, healthy diet campaigns, and food control systems for improved food safety – this would serve to improve policymaking capacities

◗ Countries can review current versions of FBDGs through a climate lens and make modifications to increase climate considerations in new versions of FBDGs

◗ Country policymakers at the national and sub-national level can add mandatory environmental and nutrition sustainability criteria in public food procurement policies

Pillar 4: Investments

◗ Donors could standardize the reporting of funding for both nutrition and climate by using a common metric in ODA data reporting

◗ Climate financing mechanisms could consider nutrition action (specific and sensitive) more explicitly

◗ Companies could do more to connect their climate and nutrition strategies, plans, and resources, with a view to treating these in a holistic and integrated fashion

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24 The I-CAN paper published by FAO (2023): "Climate Action and Nutrition: Pathways to Impact", provides keen insights into four core systems: agri-food, water, social protection, and health systems, where actions can be taken to further improve climate-nutrition actions. We recommend reading this paper for better understanding on I-CAN as a whole and for deeper insights on climate-nutrition linkages.

Methodology Outline

Aligned with the reasoning for the launch of the I-CAN, namely that the climate and nutrition communities have traditionally worked in silos, there is no standard framework for assessing the degree of integration between climate and nutrition across various domains such as policy, programs, and investments. As such, to guide this analysis we have developed a methodology to assess the degree of integration between climate and nutrition. We expect that this approach will continue to develop and evolve over time as our understanding and accuracy of the metrics used to measure integration deepens. A summary is provided here, with a longer discussion in Annex 2.

To develop our evaluative approach, a literature review was completed. This review yielded a number of existing methods for gauging nutrition-sensitivity and climate-smart characteristics (both mitigation and adaptation), targeting different types of activities. These identified methodologies serve as the foundation from which we drew essential considerations to shape the methodology used in this I-CAN baseline analysis. For example, we considered existing reports assessing the integration of food systems into NDCs (further detail provided in Annex 1). From these approaches we adopted two elements of the methodology in this report.

1. Categorising the extent of integration into levels ranging from no integration to strong integration

2. Including both climate adaptation and mitigation in our analysis, as both are essential to achieving climate objectives and actions often support both objectives

Considering the complexity of the four pillars, encompassing: 1) Implementation, Action and Support, 2) Capacity Building, Data and Knowledge Transfer, 3) Policy and Strategy, and 4) Investments; we realised the previous methodologies did not adequately accommodate all indicators under the I-CAN framework. In order to have measurable, comparable, and practical metrics adaptable to the diversity of indicators for the I-CAN baseline analysis of climate-nutrition integration, we developed a categorization based on four levels of classification, which are used for assessing each indicator.

Each data point, for each indicator, is classified as one of four levels, ranging from no integration (level 1) to strong integration with concrete plans for action (level 4), as set out with examples in Table 2. These four levels are designed to reflect commitment to action towards the higher levels of integration. At levels 1 and 2, we assess the understanding of climate-nutrition linkages. At levels 3 and 4, the core focus is on measuring the degree to which action has been taken to address climate-nutrition issues. The main difference between level 3 and 4 is in resource mobilisation. While there is **intention** to act at level 3, there is **commitment** to act at level 4, made evident by concrete plans to take action addressing climate and nutrition targets, including financial, policy, staffing, and other resource commitments.

The finance indicators have been analysed using quantitative methods, presented in Annex 2. The full coding table used to assign classification levels, alongside expanded details on methodology design and process, are available in Annex 2.

Table 2: Classification Levels of Integration between Climate and Nutrition Action

Level Number and Implication	What does this level mean in our analysis?	Example for NDC analysis of what would be classified at this level
Level 1: No intentional connectedness between climate and nutrition	At level 1, no linkages between climate and nutrition are found.	An NDC which does not contain any nutrition-relevant keywords, such as but not limited to: 'nutrition', 'diet', 'obesity', 'non-communicable diseases' etc. (an exhaustive list of all keywords can be found in Annex 2)
Level 2: Some intention to connect climate and nutrition	At level 2, there is some analysis of the linkages between climate and nutrition, with the understanding that climate affects nutrition and vice versa. Analysis can be basic or advanced, but it cannot be above a level 2 if there is no indication that action is intended to be taken to address climate-nutrition issues.	Ranging from: Basic analysis, such as an NDC with one sentence acknowledging that climate change decreases some nutrients in crops, potentially increasing risks of nutritional deficiencies. To: More in-depth analysis, such as an NDC with a full SWOT (strengths, weaknesses, opportunities, and threats) analysis on food and nutrition with clear links to climate.
Level 3: Intention to mobilise resources to connect climate and nutrition	At level 3, there is a clear statement that climate-nutrition outcomes should be improved and that this is an objective, with some context on taking action through initial plans, policies, or programmes. There may be the desire to address climate-nutrition issues, but without dedicated plans involving resource commitment, it cannot be above level 3.	Below is an example of the rationale for classifying an NDC at level 3: *In this NDC, there is one intended key contribution under the agriculture sector to improve food and nutrition security through poverty reduction, natural resource use, and improved early warning systems for climate disasters. Biofortification, fortification, and climate-smart systems for crops, fisheries, livestock, and aquaculture are mentioned as measures to improve nutrition. All information is qualitative, with no facts, figures, statistics, or additional detail on execution.*
Level 4: Commitment to mobilising resources with distinct plans to take action to connect climate and nutrition	At level 4, there are detailed plans for actions to improve climate and nutrition outcomes, with comprehensive context on execution. This could include, but is not limited to, plans for funding, timelines, baselines and targets, regions targeted, lead agencies, or other resourcing.	Below is an example of the rationale for classifying an NDC at level 4: *In this NDC, there are multiple, in-depth measures listed to improve nutritional outcomes, across health, environment, water, nutrition, and other ministries.* *Examples of such measures include, but are not limited to:* ▸ *An annual food and nutrition security assessment and a biannual nutrition survey* ▸ *Promoting nutrition-specific interventions through the SUN framework in primary health care and other critical locations* ▸ *Promoting dietary diversity and integrating nutrition-sensitive practices across agriculture, education, water, and health sectors* *Each measure listed has detailed context on the lead ministry, other relevant actors (other government agencies, CSOs,[25] NGOs,[26] or academic institutions), the estimated funding in USD both costed and uncosted, an analysis on climate mitigation benefits, the timeline in 5-year increments from 2020-2040, and a list of the SDGs in which this intervention targets.*

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25 *Civil society organisations*

26 *Non-government organisations*

The strength of the method lies in its relative simplicity and ability to shed light on the extent of climate and nutrition integration using the existing available data and information, which will help generate a comprehensive overview of different types of activities during the first year of the I-CAN. The classification levels measure only intentional and explicit climate and nutrition integration. The primary focus is not on the precise quantitative values of the results, but rather on their magnitude and their comparison, which reinforces the key takeaway message and its broader implications. The methodology will be adapted, enhanced, and potentially expanded over time, all aimed at refining its capacity to comprehensively and effectively capture the evolving landscape of climate and nutrition integration. The monitoring of these indicators and availability of data should inform the global community whether we are on the right track regarding taking action in these domains.

There are limitations to this methodology. Some debate over the design and applications of the classification levels is expected. Levels 1 and 2 (lower levels of climate-nutrition integration) are fairly straightforward, mainly in that level 1 contains no relevant climate or nutrition keywords whereas level 2 does. Given the interpretive nature of the classification levels, we expect most of

the debate surrounding the methodology to occur at the levels 3 and 4 (higher levels of climate-nutrition integration), which measures progress on actions taken to address climate and nutrition goals. We are happy to further discuss this as we move forwards in the I-CAN narrative.

The indicators are also not sufficiently gender-sensitive. Analysis on gender could be strengthened in future analysis. Additionally, the methodology could better incorporate other key themes, some of which were proposed by member states and partners, including: indigenous groups, Small Island Developing States (SIDS), vulnerable populations and socially protected groups. These groups, in addition to women, make up some of the demographics which are most disproportionately affected by the negative consequences of climate change and malnutrition. Deeper thought could be warranted on how to include these themes more strongly in future revisions of the baseline indicators.

There are 20 indicators originally selected for the I-CAN baseline. Table 3 details the 13 indicators assessed in this paper and the 7 indicators which were not analysed in-depth. Where it was not possible to assess an indicator the rationale is detailed in Table 3.
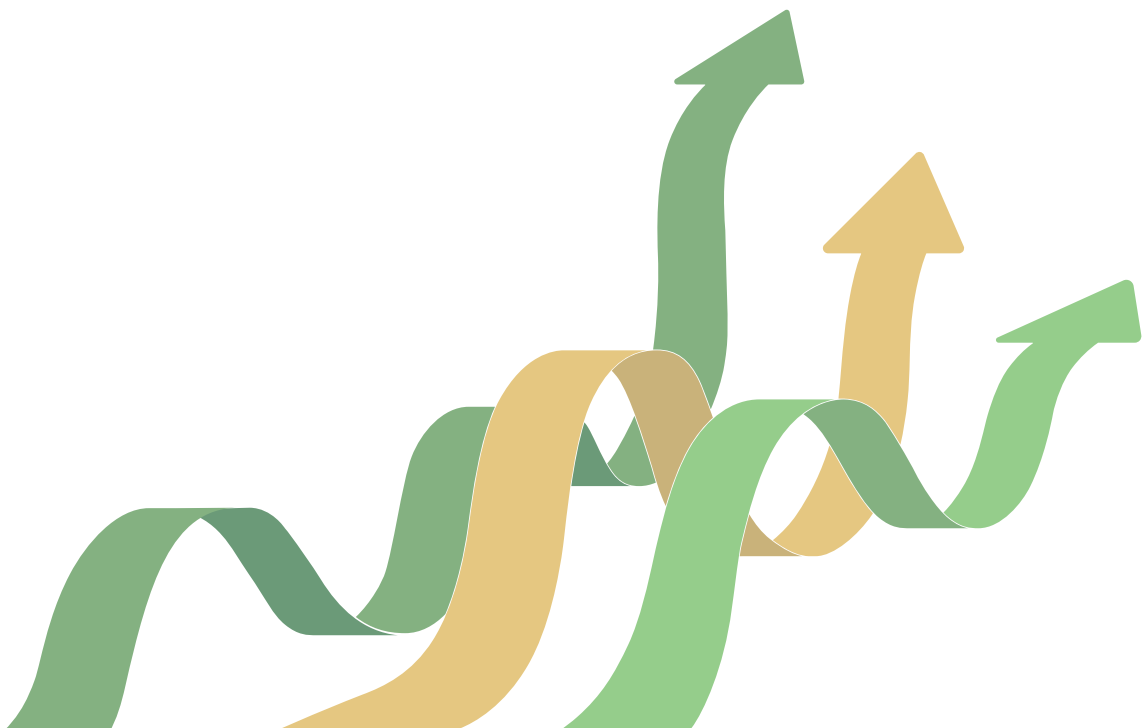
Table 3: Overview of the 20 I-CAN Indicators including those that are Assessed in this I-CAN Baseline Report

Indicator Number	Indicator	Is this indicator assessed in this baseline report?
Pillar 1: Implementation, Action, and Support		
1.1	Number of Nationally Determined Contributions (NDCs) that include nutrition-related actions	Yes
1.2	Number of climate National Adaptation Plans (NAPs) that include nutrition-related actions	Yes
1.3	Number of climate-informed nutrition interventions and programmes	No – this indicator would require aggregating across a range of different nutrition interventions and programmes. This would both be challenging to do and is partially addressed by other indicators, such as indicator 3.2 on FBDGs and indicator 3.3 on public food procurement.
1.4	Number of National Nutrition Plans (NNPs) that refer to climate	Yes
1.5	Number of significant multilateral partnerships in the climate-nutrition area	No – original analysis was conducted, but the I-CAN baseline team has decided not to include this given the difficulties in accurately capturing all such partnerships and due to lack of certainty in putting merit into the quantity over quality of partnerships.
Pillar 2: Capacity Building, Data, and Knowledge Transfer		
2.1	Value of public R&D funding programmes that bridge climate and nutrition	No – there is currently no accurate way to assess this indicator. See Panel A.
2.2a	Number of countries that have conducted a climate change and health vulnerability assessment (V&A) which included nutrition	Yes
2.2b	Number of data and knowledge portals that bring climate and nutrition together	Yes
2.3	Number of references to nutrition science articles in IPCC reports	Yes
2.4	Global Nutrition Report tracks nutrition-promoting climate adaptation actions	Yes
Pillar 3: Policy and Strategy		
3.1	Number of countries which are promoting climate-smart nutritious foods such as neglected underutilised species (NUS) and fortified/biofortified crops and staple foods	No – there is currently no accurate way to assess this indicator. See Panel B.
3.2	Number of country food-based dietary guidelines that include climate considerations	Yes
3.3	Number of countries that factor climate into food procurement decisions for food in public settings (e.g., school meals and school feeding, health and care facilities), as well as safety nets and emergency programmes	Yes
3.4	Number of healthy diet campaigns that also refer to sustainability, especially for children	No – there is currently no accurate way to assess this indicator. See Panel C.
3.5	Number of countries with food control systems adapted to the increased food safety risks associated with climate change	No – there is currently no accurate way to assess this indicator. See Panels D and E.
Pillar 4: Investments		
4.1	Value of Green Climate Fund initiatives that include nutrition considerations	Yes
4.2	Value of World Bank loans that are nutrition and climate supporting	Yes
4.3	Value of food impact investing funds that build in climate considerations	No – there is currently no accurate way to assess this indicator. See Panel F.
4.4	Number of companies in World Benchmark Alliance that score well on nutrition and sustainability	Yes
4.5	Value of ODA to climate that is linked to nutrition	Yes

Detailed Results by Indicator

Pillar 1: Implementation, Action and Support

1.1 Number of Nationally Determined Contributions (NDCs) that include nutrition-related actions

NDCs are national climate pledges contributed by each country under the Paris Agreement, submitted every 5 years to the UNFCCC Secretariat[27]. Intended climate mitigation and adaptation actions are listed in support of the UNFCCC's goal to limit global temperature increase to 1.5˚C above pre-industrial levels[28]. It is imperative for nutrition to be considered within NDCs as these climate mitigation and adaptation measures will have a direct and significant impact on nutritional outcomes.

Figure 4 shows the findings on nutrition integration within 166 NDCs. The European Union submitted 1 joint NDC for 27 countries, counted as 1 NDC in this analysis. The NDCs of Mali and Iraq have been omitted from this analysis due to translation and file access difficulties.

Currently, there are very low levels of nutrition integration in the NDCs. Only 41% of NDCs include nutrition considerations (level 2 and above), dropping to 16 % of NDCs with the intention or commitment to take action towards improving nutrition (level 3 and above).

Figure 4: Nutrition Considerations in NDCs from 2016 – 2023 Inclusive (N=166)
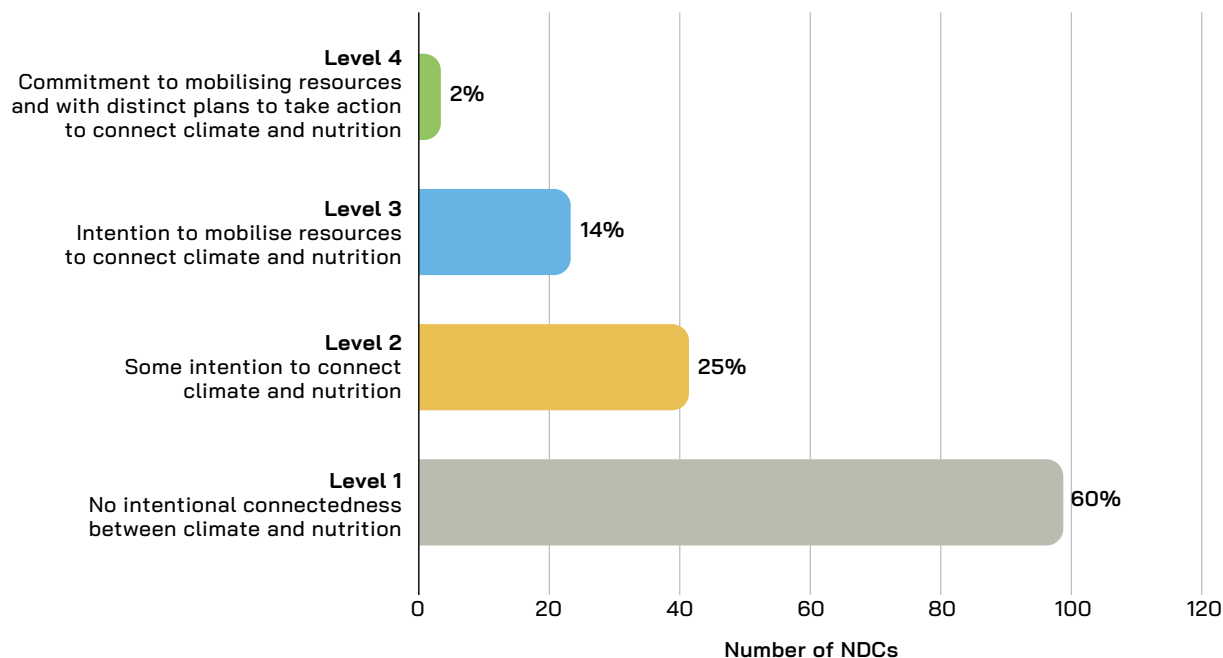
NDCs Source: UNFCCC NDC Registry, versions as of June 2023

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27 UNDP, 2023

28 Source: UNFCCC Official Website

Given their focus on outlining each country's commitments to emissions reduction under the Paris Agreement, NDCs tend to focus heavily on issues such as land use, pollution, and energy. In NAPs and NNPs we see more of a focus on adaptation and mitigation measures related to food and agriculture, hence stronger links to nutrition.

Figure 5: NDC Levels by Region (% of total region, N=192)

	Level 1	Level 2	Level 3	Level 4
	No intentional connectedness between climate and nutrition	Some intention to connect climate and nutrition	Intention to mobilise resources to connect climate and nutrition	Commitment to mobilising resources and with distinct plans to take action to connect climate and nutrition
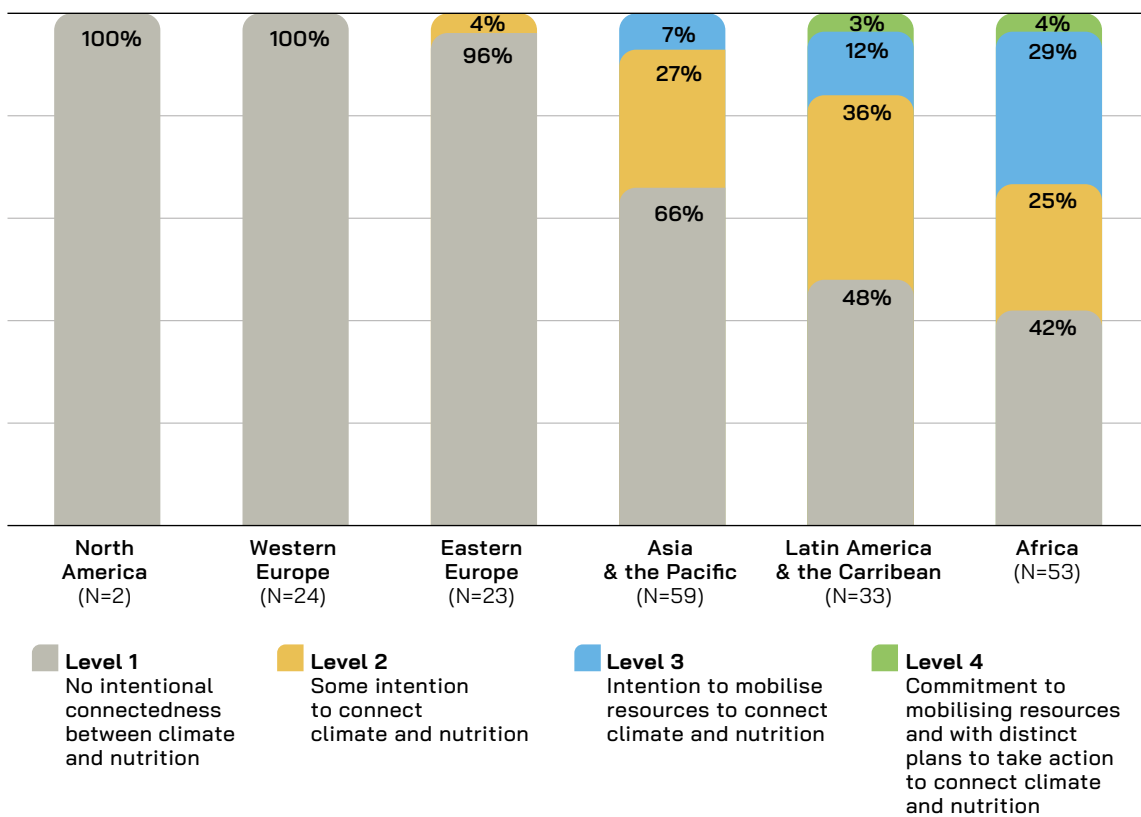
NDCs Source: *UNFCCC NDC Registry, versions as of June 2023*
Regional Groupings Source: *UN Department for General Assembly and Conference Management, versions as of June 2023*

Breaking these numbers down by region we can see that all North America and Western European countries were found to be at the lowest level of climate-nutrition integration (level 1). Comparatively, 58% of African, 51% of Latin American and Caribbean, and 34% of Asian countries included nutrition considerations in their NDCs (level 2 and above).

Food security was more likely to be mentioned in NDCs than nutrition. 73% of NDCs explicitly considering food security. In comparison, only 40% of NDCs explicitly consider nutrition. While efforts to improve food security have strong benefits for nutrition, they are no substitute for an explicit nutrition focus. Nevertheless, they do provide an important entry point to integrate nutrition into NDCs.

Figure 6: Food Security vs Nutrition Mentions in NDCs (N=166)
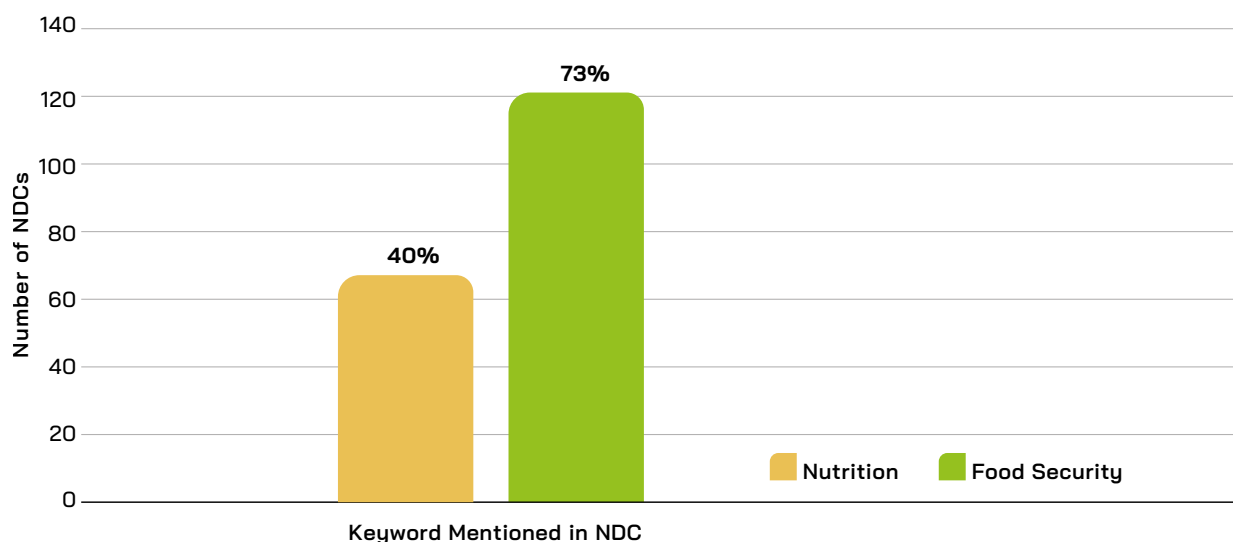
NDCs Source: UNFCCC NDC Registry, versions as of June 2023

BEST PRACTICE

BENIN NDC

Benin produced one of the NDCs which scored at the highest level of integration (level 4). These are the key features:

Core National Plan: Climate and nutrition integrated in the National Plan for Agricultural Investment in Food & Nutrition Security (2017-2021)

Government Portfolio Policy, and Programs: Multiple connections between climate mitigation with improved nutrition, such as:

▶ Valuation Support Project Hydro-Agricultural Perimeters (PAVPHA): A project aimed at improving nutritional security and income for family farms, women, and young people by contributing to hydro-agriculture development

▶ Projet de sécurité alimentaire et de renforcement de la résilience (PROSAR): Aimed at improving the food situation of people vulnerable to malnutrition, particularly women of childbearing age and young children

Technology Transfer: Priority technologies identified linkages to improved nutrition objectives, such as developing:

▶ Technology adapted to climatic constraints in agro-ecological zones to increase yields to ensure nutritional security

▶ Small watersheds constructed for water availability and agricultural purposes to improve nutritional security of vulnerable populations

Climate Adaptation Measures: 8 adaptation measures had direct outcomes for improved nutrition, with associated costs and responsible institutions

Benin NDC Source: UNFCCC NDC Registry

1.2 Number of climate National Adaptation Plans (NAPs) that include nutrition-related actions

NAPs seek to identify and address medium to long-term climate adaptation needs, contributing to increased climate resilience and the integration of climate frameworks into policies and programmes across various sectors[29]. They are action-oriented policy documents which have distinct impacts on nutritional outcomes.

Good levels of integration with nutrition were found within NAPs, with 76% of NAPs including nutrition considerations (level 2 and above) and 16% scoring at the highest level of integration (level 4). This is much higher than nutrition integration in NDCs. It is worth noting that there was a smaller number of NAPs analysed in comparison to NDCs, with the majority of NAPs originating from Africa, Asia-Pacific and Latin American countries.

Figure 7: Nutrition Considerations in NAPs from 2015 – 2023 Incluaive (N=43)
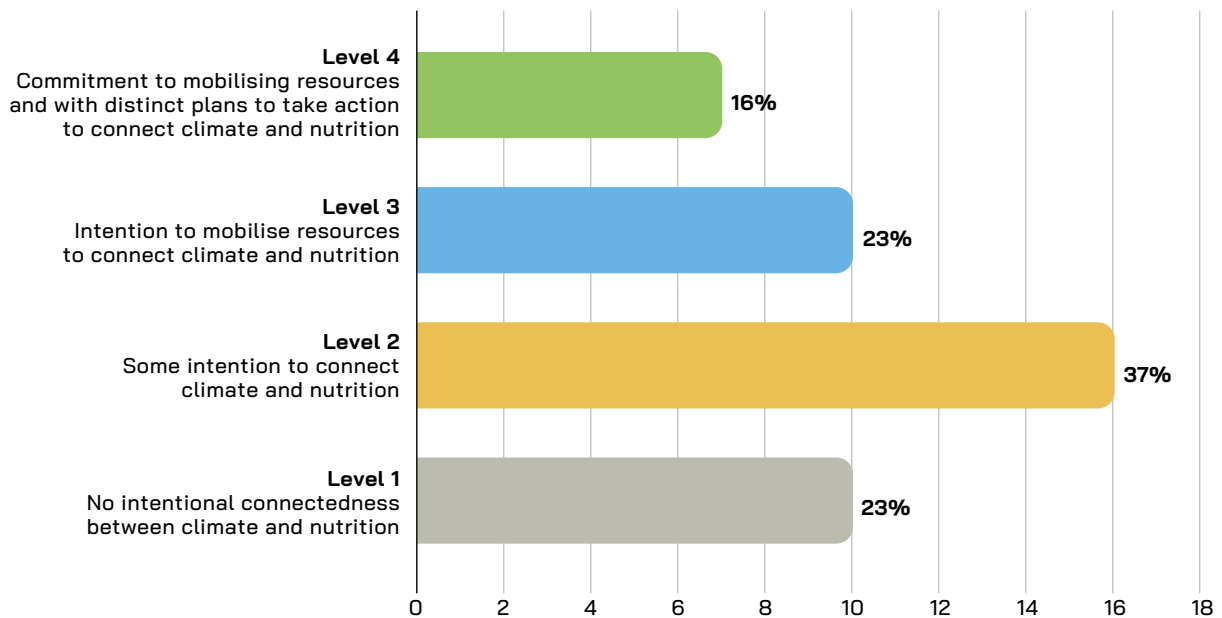
NDCs Source: UNFCCC Submitted NAPs Registry, versions as of June 2023

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29 Source: UNEP Official Website

BEST PRACTICE

BANGLADESH CLIMATE NAP

Bangladesh produced one of the NAPs which scored at the highest level of integration (level 4). These are the key features:

Cross-Ministry Collaboration: Well-coordinated efforts between various ministries including Ministry of Agriculture (MoA), Ministry of Fisheries and Livestock (MoFL), Ministry of Water Resources (MoWR), Ministry of Food (MoFood), Ministry of Disaster Management and Relief (MoDMR), and Ministry of Environment, Forest, and Climate Change (MoEFCC)

Climate-Resilient and Smart Agriculture: Adoption of multiple techniques suitable for domestic environment which aim to improve food and nutrition security, such as Alternating Wetting and Drying (AWD), nature-based solutions e.g. floating cultivation agriculture practices, and R&D on climate-smart livestock and poultry. Specific interventions to improve nutrition include:

- Promote the extension of climate-smart agriculture
- Develop climate-resilient fisheries, aquaculture and livestock
- Manage sustainable agro-inputs and transformative value chains
- Strengthen extension services for agriculture, fisheries, and livestock

Core Policies: In the Perspective Plan of Bangladesh 2021-2041, agricultural transformation for food and nutrition security is prioritized as a mechanism for achieving high-income status by 2041

Crop Diversification/Intensification: Extension of family nutrition gardens in homestead and uncultivated fallow land

Innovative Approaches: One measure listed involves improving indigenous climate change adaptation through researching nutritional benefits from seaweed

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1.3 Number of climate-informed nutrition interventions and programmes

After discussions with our partners FAO, WHO and SUN, we have agreed that this indicator is adequately covered by the other indicators assessed, such as indicator 1.4 on NNPs and indicator 3.2 on FBDGs. No further analysis was conducted here.

1.4 Number of National Nutrition Plans (NNPs) that refer to climate

NNPs are a set of country documents which outline the intended actions and goals to improve the nutritional status of their populations. This can be in the form of a policy document, action plan or strategy. For this analysis, action plans or strategies were used over policy documents where available.

Figure 8: Climate Considerations in NNPs Since 2014 (N=50)
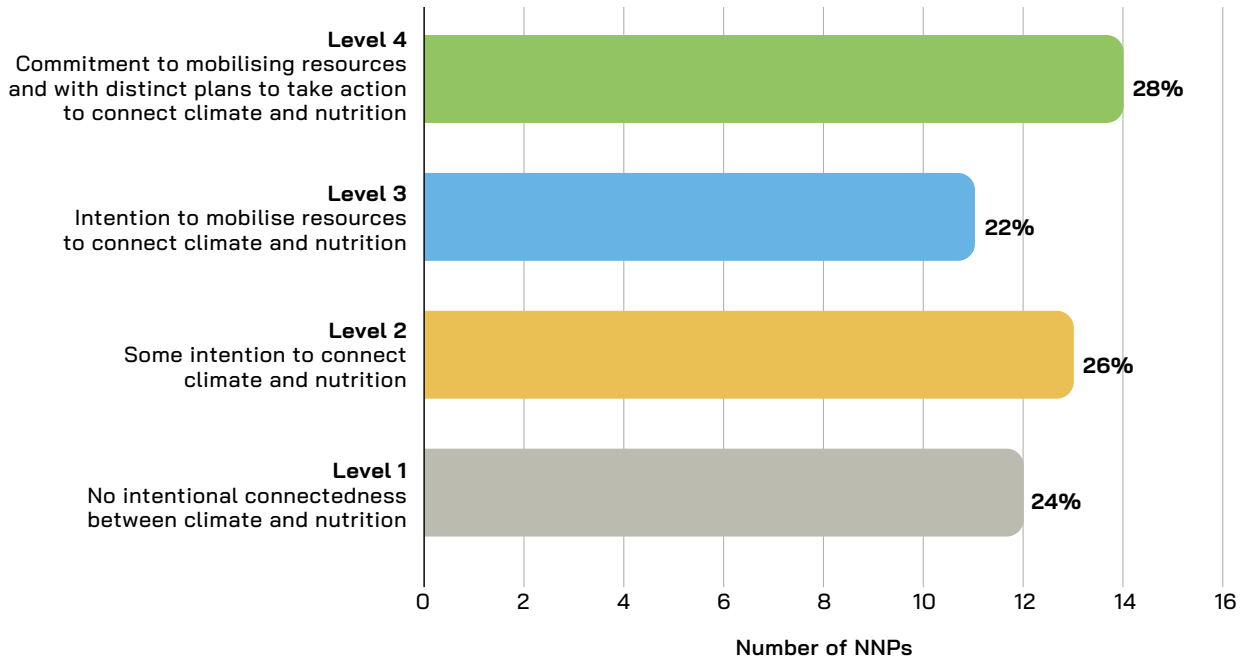
NNPs Source: Directly from SUN, versions as of August 2023

NNPs show a significantly higher level of integration between nutrition and climate compared to NDCs or NAPs, indicating higher integration within nutrition for climate than the reverse in action-related policy documents. 76% of NNPs includes climate considerations (level 2 and above), with 28% at the highest level of integration (level 4) – mostly African countries. The majority of NNPs originated from Africa, Asia-Pacific, and Latin American and Caribbean countries. This supports the high-level findings that countries in these regions are leading the way in policy and action for nutrition-related indicators as well as climate-related indicators such as NDCs and NAPs.

BEST PRACTICE

ETHIOPIA NNP

Ethiopia produced one of the NNPs which scored at the highest level of integration (level 4). These are the key features:

Holistic Food Systems Approach: Comprehensive measures targeting a range of environments, including in agricultural production, at household level, policy environments, community settings, healthcare systems, and with the private sector

Reducing Carbon Footprint: Environmentally friendly agricultural practices listed as an objective, including in ecosystem management, irrigation, waste management, and food loss

SMART Objectives: Clearly defined objectives and targets with specific commitments and expected results – for example, one of the strategic objectives listed is: "Number of strategies and policies on environmental protection updated/developed in the nutrition lens" – There is context on the baseline, targets for the next 5-10 years, data source, data collection frequency, and responsible ministries listed

Stakeholder Engagement: Environment and nutrition are both high on policy agendas, and there are plans to engage key influencers and stakeholders across various sectors

1.5 Number of significant multilateral partnerships in the climate-nutrition area

A multilateral partnership is a collaboration between two or more international institutions, typically referring to UN agencies, NGOs, or government bodies. This partnership could be in the form of an initiative, a movement, or the formation of a new organisation. The intention of the partnership should be for various organisations to come together in support of a common goal – in this case, relevant to climate and nutrition.

We had originally analysed 21 multilateral partnerships in the climate-nutrition area, listed in Annex 2. We have decided not to publish these results as they do not provide a complete picture of the state of integration between climate and nutrition in a meaningful way. The first reason is that there are a vast number of climate partnerships, and of nutrition partnerships, in existence. It is not possible to examine them all and assess for cross-linkages. We cannot be confident that a multilateral partnership which has taken significant efforts to advance climate and nutrition has not been missed in this analysis.

The second and main reason is that we are unsure of the merit in assessing the number of partnerships rather than the actual impacts and outputs of partnerships. It cannot be stated that more partnerships in the climate-nutrition area is conducive to accelerated actions. This can be further considered in future developments to the I-CAN baselines and targets.

Pillar 2: Capacity Building, Data and Knowledge Transfer

2.1 Value of public R&D funding programmes that bridge climate and nutrition

Publicly financed R&D in food systems both crowds in private sector R&D investment and fills critical gaps that the private sector does not find attractive but that are nevertheless vital for action to reduce malnutrition and accelerate climate action. Available data cannot currently be collected for this indicator. Panel A outlines some of the things that could be done to construct this indicator in the future.

PANEL A

ASSESSING AGRICULTURAL R&D TO CLIMATE-RESILIENT ND NUTRIENT RICH CROPS

There is no question that we need to pay much more attention to developing climate-resilient and nutrient-rich cropping systems. Innovation in these areas will be crucial if national and global players are to achieve the necessary outcomes, such as the SDG targets. Yet, we are unable to track the degree to which such cropping systems are funded in Research for Development (R4D).

Take the CGIAR[30], which is the largest source of public expenditure on agriculture in the Global South. Budgets available on the web are by research Centre or by Program. Because diverse activities are funded under these entities, there is no way any judgment can be made on the thematic focus. Even at the program level, the sub-divisions of the budget do not allow one to tease out expenditure on climate resilience and/or nutrition-rich crops. Public resources should be transparently spent and the public should be able to assess whether priorities are being addressed.

Tagging research funds as climate focused and/or nutrition focused should be feasible, allowing for expenditure tracking. This will, of course, require clear definitions of what constitutes these categories. There are many research papers on climate-resilient crops, varieties and practices, and it should be simple to come up with a list of what could be counted as enhancing climate-resilience (e.g., sorghum, drought-tolerant maize varieties, diversified cropping systems for extreme dry events). Similarly for building nutrition-rich cropping systems, a list of possible crops that can be included could be prepared (e.g., biofortified crops, millet, beans, traditional African leafy greens).

Bruce Campbell, Clim-Eat

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30 *Consultative Group on International Agricultural Research*

2.2a Number of countries that have conducted a climate change and health vulnerability assessment (V&A) which included nutrition

Climate change and health V&As are surveys completed by national health authorities, in collaboration with other relevant ministries, seeking updated information on the health implications of climate change. They contain key information in areas such as governance, emergency preparedness, disease resilience, adaptation and mitigation measures, climate and health finance. These surveys are conducted every 3 years.

There is no central database for the V&A documents. Therefore, we were unable to assess the documents themselves for this analysis. Instead, we have drawn insights from the Climate Change and Health Survey report published by WHO in 2021, under the 'malnutrition and food borne diseases' section[31]. Out of the 95 participant countries included in the report, 42

countries had complete information. This is the subset of data used for this analysis.

We can see relatively good levels of integration, with 96% of countries at least considering malnutrition and foodborne diseases within climate change (level 2 and above). More focus should be placed on achieving the highest level of integration (level 4). With 55% of countries at the second highest level of integration (level 3), this signals that we are heading in the right direction with this indicator. We encourage voluntary participation from member states in order to increase the availability of data.

Malnutrition, food borne diseases, and other human health issues linked to climate change are increasingly recognised. The report *Climate Action and Nutrition: Pathways to Impact*[32], developed by FAO under the work of the I-CAN, outlines how both health and water pathways can impact nutrition. Extreme weather

Figure 9: Inclusion of 'Malnutrition and Foodborne Disease' Criteria in Climate Change and Health in complete V&As published in 2021 (N=42)

Number of Climate Change and Health V&As
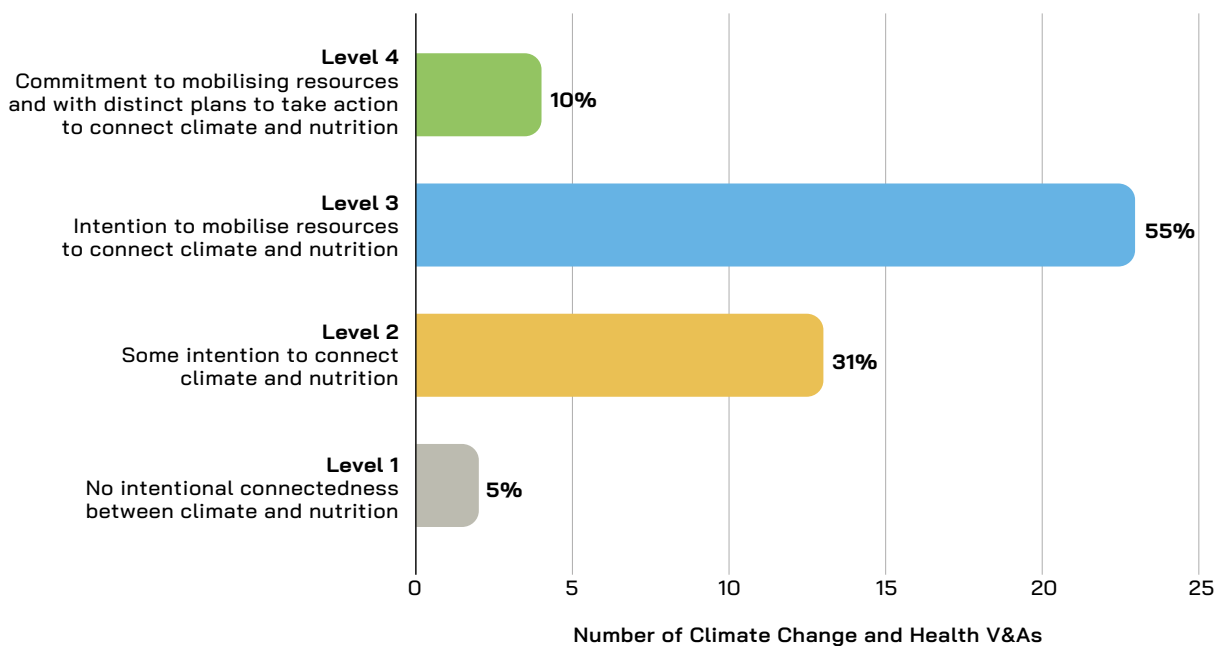
Insights Sourced From: 2021 WHO Health and Climate Change Survey Report

31 Please review the classification level coding table under *Annex 2* for the full methodology on this indicator.

32 FAO, 2023a

exacerbates underlying malnutrition-related health concerns, such as heart diseases and stroke. Floods and sea level rises can contaminate water sources with bacteria and viruses which lead to foodborne and waterborne illnesses[33]. As the negative effects of climate change continue to impact human health, more resources should be dedicated into advancements in this area.

2.2b Number of Data and Knowledge Portals

Data and knowledge portals are typically managed by international organisations, research institutes, and NGOs. They provide not only the academic community but also the public with updated information on climate change and nutrition across regions and time periods, shining light on some important trends that inform policymaking.

We analysed 26 data and knowledge portals, listed in Table 4. All portals chosen include interactive, quantitative data-driven components such as dashboards, maps, charts and graphs, with various statistical elements. This is a non-exhaustive list chosen to represent the data capacities of some of the biggest multilateral agencies and international organisations. We also acknowledge a limitation that most portals reviewed leaned more towards the nutrition than the climate side. In future iterations, a larger range of climate portals should be examined.

Table 4: All 26 Data and Knowledge Portals Analysed Under Indicator 2.2b[34]

1.	Food Systems Dashboard
2.	WRI Resource Watch
3.	WHO Observatory
4.	Global Fortification Data Exchange (GFDx)
5.	UNICEF State of the World's Children 2019 and 2021
6.	FAO Climate Change Knowledge Hub
7.	Our World in Data
8.	FAOSTAT
9.	SDGs Dashboard
10.	World Bank Data Bank
11.	WFP Hunger Map
12.	The Economist's Food Sustainability Index
13.	Tuft's Global Nutrition and Health Atlas
14.	Global Dietary Database
15.	IHME Local Burden of Disease
16.	Climate Action Tracker
17.	The CO2 Menu[35]
18.	CGIAR Agrobiodiversity Index (Diversity Lighthouse)
19.	The State of Acute Malnutrition
20.	WHO Nutrition Landscape Information System (NLiS)
21.	UNICEF Vitamin A Supplementation Interactive Dashboard
22.	UNICEF-WHO-World Bank Joint Child Malnutrition Estimates 2020 Edition
23.	Global Target Tracking Tool
24.	National Institute of Nutrition Atlas India
25.	FAO/WHO Global Individual Food consumption data Tool (GIFT)
26.	FAO/UNEP Food Loss and Waste Database

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33 *National Institute of Environmental Health Sciences, 2022b*

34 *All acronyms not laid out in table 4 can be found in the glossary.*

35 *This data and knowledge portal existed online when the analysis was conducted, as of June 2023. Upon further reviews in September 2023, this portal seems to no longer exist. Our analysis is kept in this report for full transparency and because there are still merits to the original analysis. However, due to the website no longer existing, the CO2 Menu is not able to be included under the references section.*

Figure 10: Degree of Climate-Nutrition Integration in Data and Knowledge Portals)(N=26)
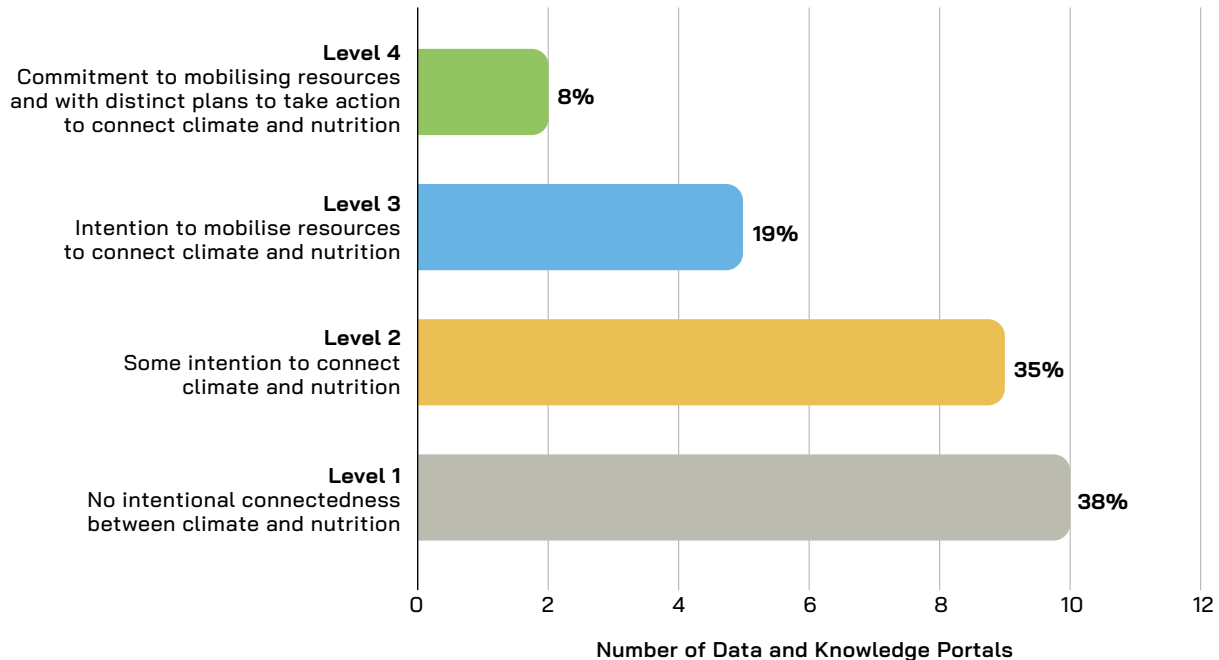
Data Source: Data and Knowledge Portals listed in Table 4, versions as of June 2023

Based on the results, 38% of portals do not contain any climate-nutrition linkages (level 1). 35% only mention climate or nutrition concepts, without the use of cross-linked data and evidence (level 2). Only 27% of portals actually examine nutrition and climate data in conjunction to derive meaningful insights (level 3 and above). Better data integration would allow for improved decision-making.

It is important to note that these portals were not set up to integrate climate and nutrition, but our analysis shows the potential for some of them to evolve to doing so.

2.3 Number of references to nutrition science articles in IPCC reports

The IPCC is the United Nations body responsible for assessing the scientific evidence behind climate change. They hold a preeminent position in informing evidence-based policymaking surrounding climate change and in determining the latest available snapshot on climate change.

Two IPCC reports were analysed for this indicator[36]: the 2023 AR6 Synthesis Report and the 2019 Special Report on Climate Change and Land.

The AR6 Report and the Special Report both had the highest level of integration (level 4) between climate and nutrition. The AR6 Synthesis Report contained 11 different paragraphs discussing nutrition, including a dedicated section on health and nutrition (section 4.5.5). The section highlighted adaptation strategies such as to reduce food loss and waste or support balanced, sustainable healthy diets that contribute to nutrition and climate co-benefit. The Special Report contained over 270 references for the keyword 'nutrition'. Links between nutrition and climate change are analysed in-depth. Nutrition benefits in climate adaptation measures and climate-related changes to food availability and diet quality are discussed. Public health policies to improve nutrition are connected to reduced GHG emissions and improved adaptive capacity. Nutrition is linked to key areas such as health systems, agriculture, and Water, Sanitation and Hygiene (WASH) services, with evidence and data provided.

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36 *Please refer to methodology section under Annex 2 for more detail on how this indicator was analysed.*

It should be noted that given the long and comprehensive nature of IPCC reports, it is more likely to contain explicit mentions of nutrition, in comparison to other indicators where the data point being assessed is less extensive in explanation.

In a separate analysis conducted by FAO, it was found that the IPCC AR5 Synthesis Report contained only 3 references to nutrition. This shows the increasing attention from the IPCC to integrate climate and nutrition. The IPCC's recognition and credibility help to make a strong case for climate actions for nutrition.

2.4 Global Nutrition Report tracks[37] nutrition-promoting climate adaptation actions

The GNR records commitments made under the Nutrition Accountability Framework (NAF), which guides public and private sector organisations on developing SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) objectives targeting nutrition improvement.

Figure 11: Climate Considerations in Global Nutrition Report Commitments from 2021-2022 Inclusive (N=434)
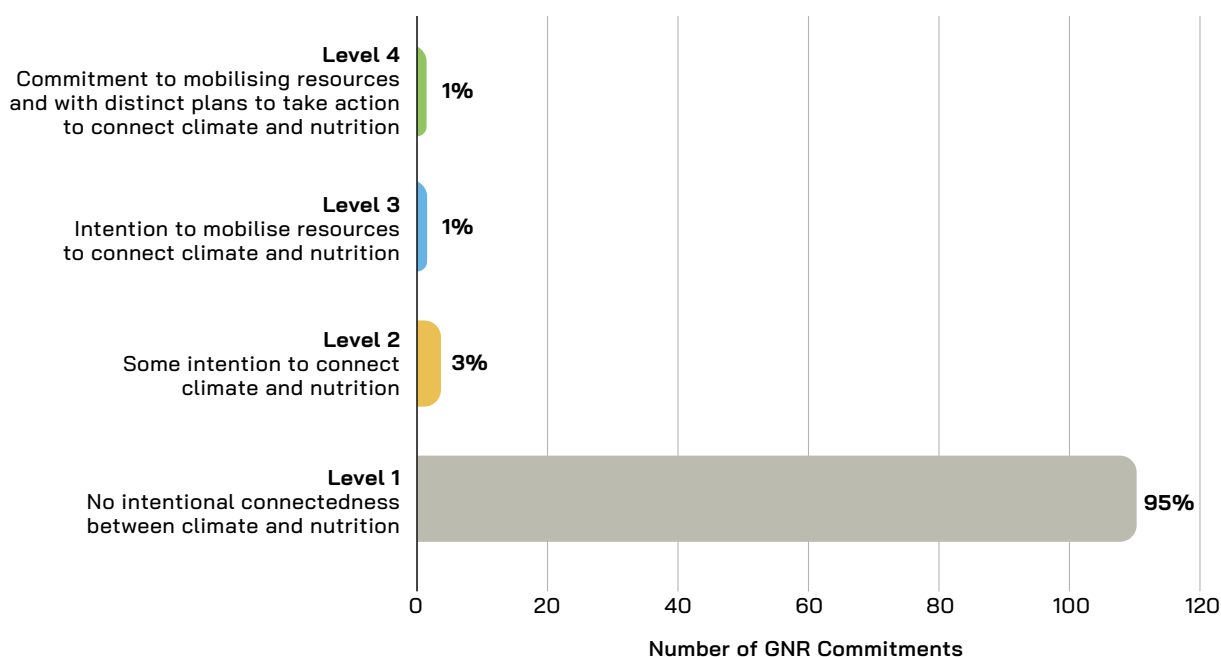
Data Source: Global Nutrition Report NAF Commitment Tracker[38], versions as of April 2023

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434 commitments under the GNR were analysed. 95% of all GNR commitments currently do not include any climate considerations (level 1). 3% of commitments contain climate keywords (level 2), with most climate references only mentioned in passing in an introductory sense. Only 2% of commitments indicate an objective on climate mitigation and adaptation (level 3 and above), with only 1% (level 4) directly targeting a climate-related goal. This is a very high proportion of both public and private sector nutrition commitments that do not consider climate in a meaningful way. However, it should be mentioned that the commitments under GNR are very simple and concise, which makes it difficult to reflect substantial considerations of climate. Our analysis has been modified in this regard, to reflect whether climate concepts are noted in the goals and action plans of GNR commitments.

During the next N4G Summit in France in 2024, greater emphasis should be placed on climate considerations and improvement within nutrition commitments. This has the potential to bring climate communities closer into the nutrition space.

Pillar 3: Policy and Strategy

3.1 Number of countries which are promoting climate-smart nutritious foods such as neglected underutilised species (NUS) and fortified/biofortified crops and staple foods

Climate-smart nutritious foods have benefits for both positive climate and nutrition impacts, with these types of crops more resilient to extreme weather events. Nutrient-rich foods tend to be more resilient to climate threats, including droughts, pests and crop diseases, and temperature changes[39]. This is a win-win situation.

NUS, as the name suggests, are crops which have high nutritional potential but are underutilised in food systems. Fortified and biofortified crops are specifically enriched or bred with essential nutrients. Both these crop types play a key role in improving nutrition. Staple foods include foods such as wheat, rice and maize, which are currently the three most grown and consumed crops in the world. Intensive farming for these crops leads to not only a high output of emissions, but also a reduction in diet quality and diversity.

Increasing consumption of NUS can help to improve dietary diversity both across food groups and within food groups. If we promote production of a wide variety of NUS, we can help to reduce crop intensification and increase biodiversity and genetic biodiversity.

Increasing consumption of fortified and biofortified crops will have benefits for addressing micronutrient deficiencies. Both NUS and biofortified crops tend to be excluded from staple crop policies. There are a range of reasons why NUS are neglected. Low yields are one of the key bottlenecks to production. Hence, the promotion of NUS requires significant research to improve crops and varieties for better yield and to prevent post-harvest losses.

It should be noted that production of NUS is only a part of the full value chain. Many national food systems transformation pathways do refer to the promotion of local crops. NUS can also be a part of FBDGs and school feeding polices. In future iterations of the baseline assessment, further indicators could be explored to incorporate for NUS considerations beyond R&D.

Panel B explores some potential actions that could be taken to collect data on this indicator in the future.

39 Global Panel, 2015

THE NEED FOR DATA ON NEGLECTED AND UNDERUTILISED CROPS

NUS represent a large, diverse group of food species which globally receive little attention in research and development and remain marginalised in the food system. NUS are locally and culturally important, contributing to diverse diets and smallholder livelihoods worldwide. They display significant tolerances to heat, drought, and salinity and are often superior in nutritional quality. Minor millets are a prime example of these characteristics and demonstrate why NUS are central to climate action and nutrition. NUS can reduce the risk of crop loss due to climate variability with measurable adaptation and mitigation benefits.

While NUS attract insignificant R&D support, siloed approaches undermine impact, holding back their contribution to climate action and nutrition. Most research over the last few decades highlights disconnected projects and initiatives, often covering the same topics of research. This has contributed to divisions in the community, confusion around terminology, scattered knowledge and data often not in readily useable formats. This results in piecemeal data collection for national statistics on production and consumption and makes assessing metrics and indicators difficult. To date there is no universal database or knowledge hub addressing both climate action and nutrition, which might be a gamechanger for NUS.

Many networks serving the NUS community have been set up as networks or knowledge hubs in the past such as Crop for the Future (CFF); the International Centre for Underutilised Crops (ICUC); the Global Facilitation Unit for Underutilised Species (GFU); and the African Orphan Crops Consortium (AOCC) each with a general focus. Others such as FAO INFOODS includes databases on NUS but are focused on a specific topic, in this instance nutritional value. This does not mean the necessary data for climate action and nutrition does not exist. The challenge is how relevant existing data can be consolidated and in identifying gaps and connection points where the NUS, climate, and nutrition communities can effectively come together on this. A case of looking back to move forward.

Danny Hunter, Alliance of Bioversity International and CIAT[40]

3.2 Number of country food-based dietary guidelines that include climate considerations

FBDGs are intended to provide the public with essential information on food groups, dietary patterns, nutrition and health, and to inform other national policies and procurement decisions. Each country produces a version of their FBDG in accordance with local eating habits, lifestyles, environmental conditions and customs. They are useful in informing both the public and policymakers on what a healthy diet should look like.

The concept of sustainable diets has gained increasing attention in recent years, with several countries seeking to incorporate sustainability considerations into their FBDGs. Some of the recommendations, for example, could include a shift towards a more plant-based diet, reduction of red and processed meat, a focus on sourcing fish from sustainable stocks, promoting whole grains over refined grains, a focus on seasonal and local foods, reducing food loss and waste, and food packaging. Analysis of climate and sustainability considerations on FBDGs was conducted in line with FAO's recommendations.

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40 CIAT stands for the International Centre for Tropical Agriculture. CIAT has merged with Bioversity International to become the Alliance of Bioversity International and CIAT.

Sustainable Healthy Diets are dietary patterns that promote all dimensions of individuals' health and wellbeing; have low environmental pressure and impact; are accessible, affordable, safe and equitable; and are culturally acceptable. The aims of Sustainable Healthy Diets are to achieve optimal growth and development of all individuals and support functioning and physical, mental, and social wellbeing at all life stages for present and future generations; contribute to preventing all forms of malnutrition (i.e. undernutrition, micronutrient deficiency, overweight and obesity); reduce the risk of diet-related NCDs[41]; and support the preservation of biodiversity and planetary health. Sustainable healthy diets must combine all the dimensions of sustainability to avoid unintended consequences.

FAO and WHO, 2019:
Sustainable Healthy Diets, Guiding Principles

70 FBDGs were analysed in this study, sourced from FAO's FBDG database, versions as of July 2023. A review was conducted to determine whether climate impacts were considered in the development of the FBDGs and if this is reflected in recommendations to the population. Only FBDGs published in 2010 and beyond were analysed. 2010 is the year when the first FAO definition of 'sustainable diets' was published, and it provides a logical cut off point for reviewing only relatively recent version of FBDGs.

Our analysis for this indicator is meant to provide a snapshot into whether FBDGs make an explicit link to climate in their recommendations to the public. It is not intended to fully model the implications of dietary recommendations on environmental outcomes, but instead provide a snapshot of where linkages have been made Additionally, we have only analysed the public-facing FBDGs in this analysis. Climate-relevant concepts may have been considered in the drafting of the FBDGs, in other internal materials, or in additional support materials published. Specifically, this may have been in the situational analysis and evidence review, which is completed during the development of every national FBDG. Because the FBDGs are intended to be accessible, actionable, and easily comprehendible for the general audience, sole revision of the public-facing document may not capture all nuances of climate considerations in FBDGs.

For the purposes of our analysis, we believe a focus on explicit linkages provides a useful overview of where climate concepts are considered in current versions of FBDGs. We would recommend that future work builds on this initial assessment with more detailed consideration of how and where climate is incorporated into FBDGs. We welcome the forthcoming guidance on Food-Systems Based Dietary Guidelines[42] being developed by FAO which will detail how environmental sustainability can be incorporated into FBDGs.

It is important to note that many of the FBDGs, especially those from Europe, were written in local languages. This increased difficulties in translation and understanding when searching for keywords. Whilst being thorough in our analysis, we acknowledge that some nuances may have been lost in translation, although this is not expected to have a major impact on the findings.

41 Non-communicable diseases

42 FAO, (forthcoming)

Figure 12: Climate Considerations in FBDGs from 2010-2022 Inclusive (N=70)

Level 4
Commitment to mobilising resources and with distinct plans to take action to connect climate and nutrition — 11%

Level 3
Intention to mobilise resources to connect climate and nutrition — 9%

Level 2
Some intention to connect climate and nutrition — 26%

Level 1
No intentional connectedness between climate and nutrition — 54%

Number of FBDGs
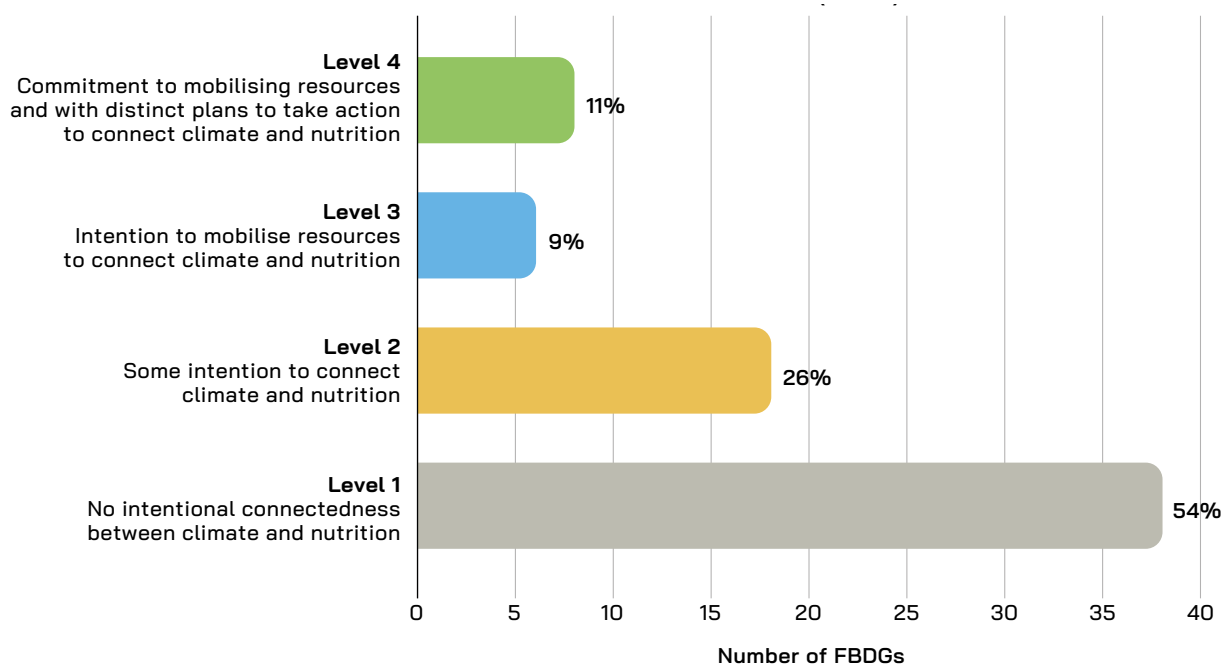
FBDGs Source: FAO FBDG Database, versions as of July 2023

54% of FBDGs gave no consideration to climate or environmental sustainability. Only 20% of FBDGs (level 3 and above) made recommendations to eat sustainably-sourced foods. 26% of FBDGs included some reference to climate or sustainability but did not make such recommendations (level 2). Scandinavian countries are leading the way in this area, with 3 out of the 8 countries at the highest level of integration (level 4) coming from Northern Europe, exemplified by the recently published Nordic Nutrition Recommendations[43].

Many FBDGs mention certain recommendations for nutritional and cost benefits, which also have co-benefits for climate and the environment. For example, this could include recommending eating less ultra-processed foods, which has the potential to contribute to reduced GHG emissions[44]. This is important, as it means that current editions of FBDGs are already compatible with climate co-benefits. Although, recommendations in the current versions of FBDGs may not go far enough to meet targets set under the Paris Agreement. Policymakers are encouraged to integrate climate considerations in revised editions.

43 Nordic Council of Ministers., 2023

44 Fardet and Rock, 2020

Figure 13: FBDG Levels by Region (% of total region, N=70)

	Level 1	Level 2	Level 3	Level 4
	No intentional connectedness between climate and nutrition	Some intention to connect climate and nutrition	Intention to mobilise resources to connect climate and nutrition	Commitment to mobilising resources and with distinct plans to take action to connect climate and nutrition
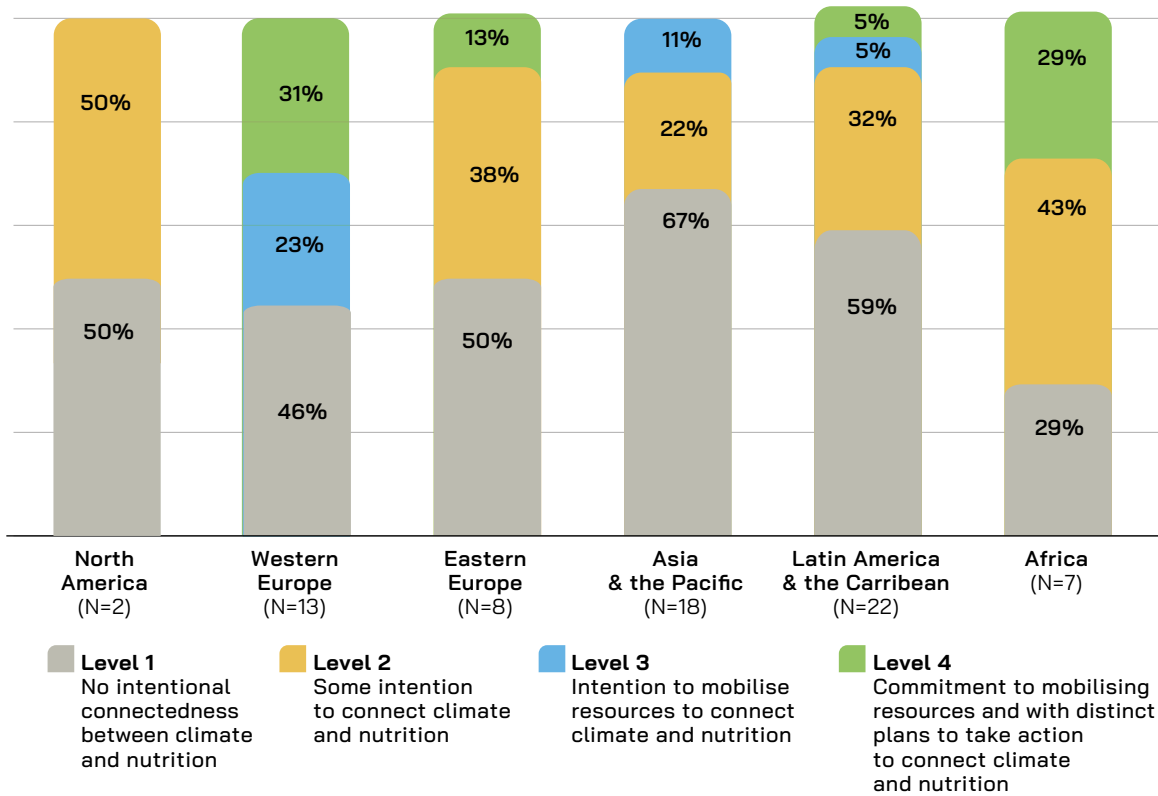
FBDGs Source: *FAO FBDG Database, versions as of July 2023*
Regional Groupings Source: *UN Department for General Assembly and Conference Management, versions as of June 2023*

On an aggregate level, the majority of FBDGs which scored at the highest level of integration (level 4) came from Western Europe. When breaking this data down by region, however, interesting trends emerge. Africa tended to consider climate and sustainability the most in their FBDGs, with 72% overall (level 2 and above). Western Europe had the most FBDGs at level 4, but 46% of FBDGs did not consider climate at all (level 2). Asia and the Pacific had most countries at the lowest level of integration (level 1) out of all regions, whilst North America has the least integration overall.

More standardisation on when the FBDGs are reviewed and revised is recommended. Some FBDGs have undergone multiple revisions, with the most recent version published in 2023. Other FBDGs date as far back as 1998, with some countries having no FBDGs on record. We recognise here the significant human, financial and data resources that go into National FBDG development, including the added complexity of considering climate implications, especially for LMICs. However, the long-term benefits are tangible, and will go towards improving human health and mitigating carbon emissions.

Figure 14: Climate Considerations in in FBDGs over the Period 2010 - 2022 (N=70)

Level 1 No intentional connectedness between climate and nutrition	**Level 2** Some intention to connect climate and nutrition
Level 3 Intention to mobilise resources to connect climate and nutrition	**Level 4** Commitment to mobilising resources and with distinct plans to take action to connect climate and nutrition
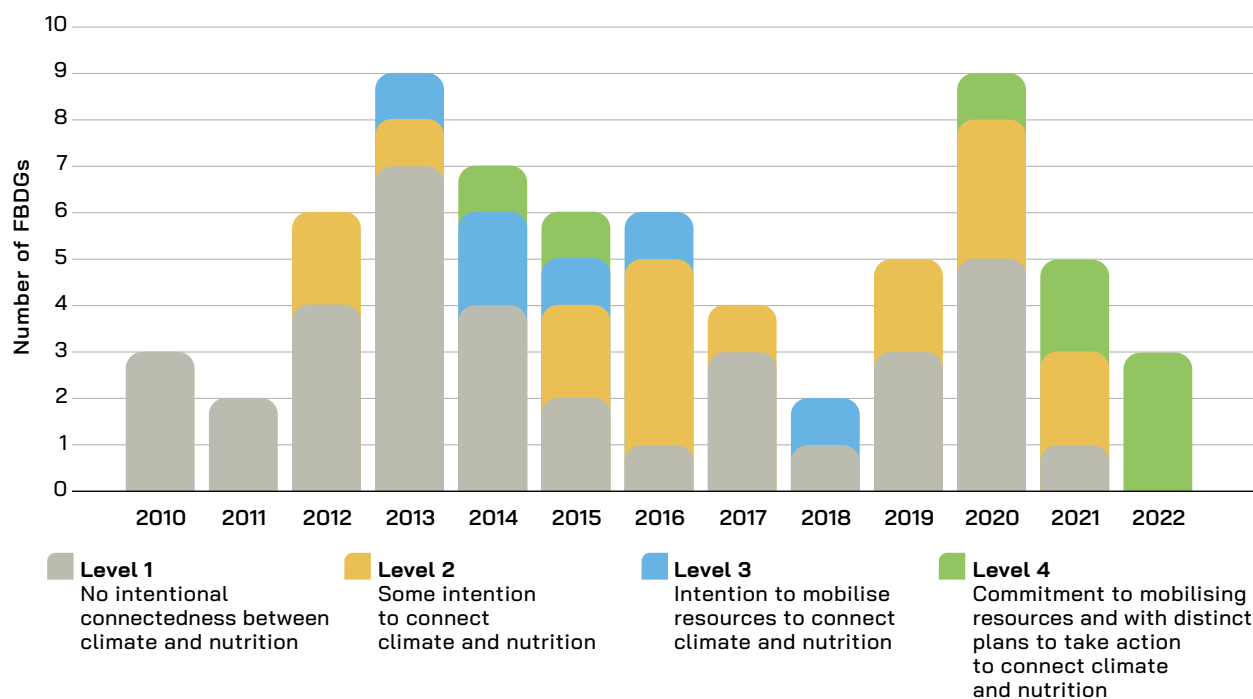
FBDGs Source: FAO FBDG Database, versions as of July 2023

When we categorise the integration levels over the period of 2010-2022, we can see that over time, the integration levels have marginally gone up. Encouraging more recent revisions of FBDGs would help integrate more sustainability concepts into public recommendations, in line with recent developments in sustainable diets.

3.3 Number of countries that factor climate into food procurement decisions for food in public settings (e.g. school meals and school feeding, health and care facilities), as well as safety nets and emergency programmes

Public food procurement (sourced by government and other public sector agencies) is a critical part of the nutrition landscape. Integrating climate benefits into public food procurement represents a significant opportunity for reducing carbon emissions, alongside other climate co-benefits.

This indicator was analysed by a team of WHO consultants. 162 food procurement policy documents across 93 countries were assessed, sourced from WHO's Global Database on the Implementation of Nutrition Action (GINA). It is important to note here limitations to this analysis, which make the results somewhat partial. The GINA only captures nutrition-related policies. As such, the results analysed only show the number of countries that factor climate into food procurement within nutrition-related policies but not in public food procurement decisions overall. This is mainly because rules and guidance related to the incorporation of climate aspects into public food procurement may be found in other sector policies and at public procurement legislation, which were not analysed in this research.

The UNEP Global Survey on Sustainable Public Procurement suggests food is currently second post within the top ten products and services categories prioritised for sustainable public procurement implementation worldwide[45].

45 UNEP, 2013

Figure 15: Climate Considerations in Public Food Procurement from 1996 to 2022 Inclusive (N=93)
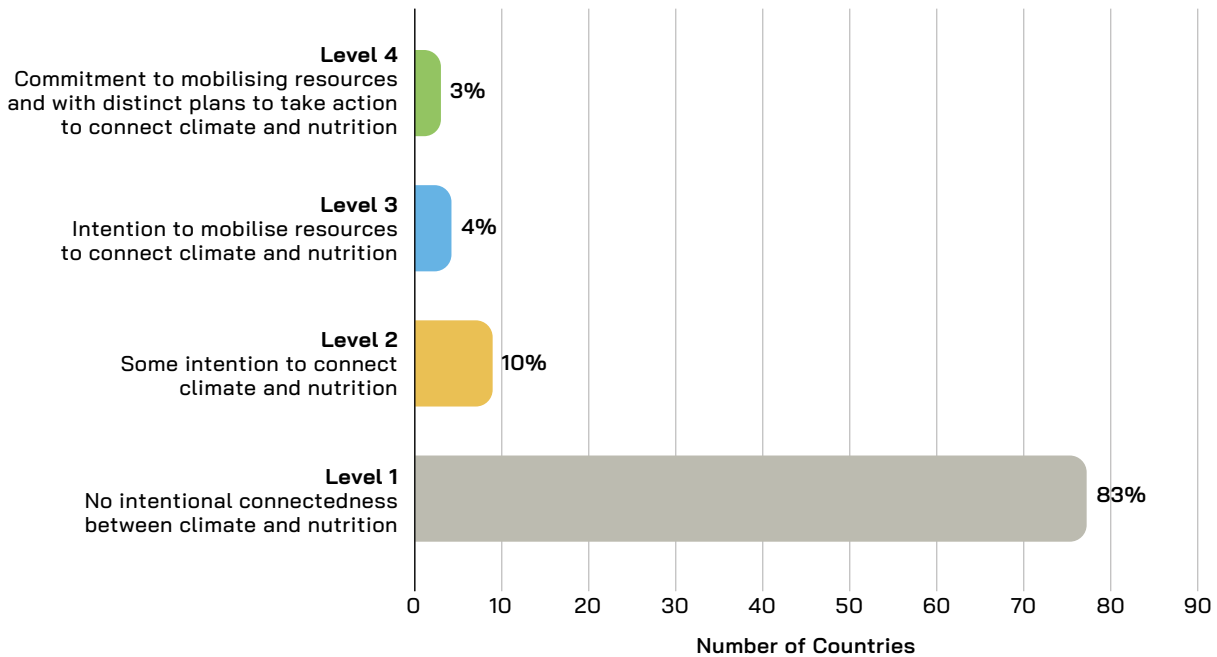
Data Source: WHO GINA database, version as of June 2023

83% of countries do not consider climate factors in their food procurement decisions, with only 7% of countries including at least one mandatory requirement on climate criteria (level 3 and above). This is a high number of countries which do not consider climate in food procurement. It should be noted that the timeline used for this analysis, going back to 1996, is comparatively longer than for the other indicators.

Figure 16: Public Food Procurement Country Levels by Region (% of total region, N=93)

North America (N=1)	**Western Europe** (N=18)	**Eastern Europe** (N=20)	**Asia & the Pacific** (N=30)	**Latin America & the Carribean** (N=16)	**Africa** (N=8)

Level 1
No intentional connectedness between climate and nutrition

Level 2
Some intention to connect climate and nutrition

Level 3
Intention to mobilise resources to connect climate and nutrition

Level 4
Commitment to mobilising resources and with distinct plans to take action to connect climate and nutrition

Data Source: WHO GINA database, version as of June 2023

Regional Groupings Source: UN Department for General Assembly and Conference Management, versions as of June 2023

High levels of integration are seen from European countries with Western Europe emerging as the leader overall, with 44% of all countries considering climate in food procurement (level 2 and above). However, Latin American and Caribbean countries lead the way when considering scores at the highest two levels of integration, with 6% at level 4 and 13% at level 3. No SIDS[46] showed consideration for climate change in food procurement, despite being some of the countries most affected by climate impacts.

3.4 Number of healthy diet campaigns that also refer to sustainability, especially for children

Healthy diet campaigns are promotional materials and marketing used to disseminate information on healthy eating and stimulate public interest to eat healthier. They are usually distributed by local health ministries, although NGOs and other health actors have also promoted healthy diet campaigns in the past. Campaign materials can be videos, TV adverts, posters, brochures, or smartphone applications. These are important tools for influencing public perceptions on healthy foods, as low interest and knowledge on nutrition prevents consumers from using nutritional information[47].

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46 *SIDS classification sourced from United Nations official website, based on the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States.*

47 *Sethi and Raina, 2020*

Due to the wide-ranging nature of healthy diet campaigns – from the promotional material type and channels to duration and language barriers - it is very difficult and laborious to manage a centralised database of all global campaigns. There is currently no fully accurate way to assess this indicator.

Panel C highlights some future outlooks on how assessment capacities for this indicator could be further developed.

PANEL C

MASS MEDIA CAMPAIGNS FOR HEALTHY DIETS AND SUSTAINABILITY CONCERNS

Mass media campaigns have the potential to help shift people's perceptions, increase their knowledge, and change their behaviors[48]. While there are numerous mass media campaigns that have been implemented to try to improve food choice, very few have incorporated sustainability considerations within them such as Meatless Monday and food waste campaigns[49]. Given the synergies between food choices that are healthy for people and the planet[50], there is a clear opportunity to integrate sustainability messaging into healthy diet campaigns to increase their impact.

Many consumers, including children and adolescents, are unaware of the impacts that their food choices have on the environment[51]. By creating mass media campaigns that highlight these connections – in a way that taps into what resonates with people, especially children and adolescents – there is a potential to shift consumption patterns. Taking stock of the number of campaigns that refer to sustainability would help to highlight the gaps in current practices, and opportunities to strengthen these campaigns by integrating sustainability in a synergistic way.

Given the limited number of campaigns to date that have incorporated climate change and sustainability concepts within them, this indicator would highlight where we are now, and where we need to go, to strengthen consumer messaging. The World Cancer Research Fund's NOURISHING policy database already provides a repository of mass media campaigns targeting food choice. This existing database could potentially be leveraged to include information about sustainability references in healthy diet campaigns to help monitor this indicator over time while building on, rather than duplicating, current efforts.

Shauna Downs, Rutgers School of Public Health

3.5 Number of countries with food control systems adapted to the increased food safety risks associated with climate change

As set out in FAO's I-CAN report *Climate Action and Nutrition: Pathways to Impact*[52], climate change also affects the nutritional quality of food. Severe flooding and droughts affect pathogens and introduce toxins to crops which can result in the consumption of foods contaminated with illnesses such as norovirus infection or salmonellosis[53]. Increased consideration should be given to climate factors in food safety databases. However, no such centralisation of information currently exists.

Panel D highlights why this indicator is important and current ongoing efforts to improve data collection.

48 *Afshin et al., 2015; Wakefield et al., 2010*

49 *Sullivan et al., 2021; Reynolds et al., 2019*

50 *Willett et al., 2019*

51 *MacDiarmid et al., 2016; Mann et al., 2018; Fox et al., 2021*

52 *FAO, 2023a*

53 *National Institute of Environmental Health Sciences, 2022a*

FOOD CONTROL SYSTEMS AND THE NEED TO ADDRESS FOOD SAFETY RISKS ASSOCIATED WITH CLIMATE CHANGE

Climate change is already showing the impacts on food safety and food production. Emerging pathogens' production of natural toxins are some of the food safety hazards that might be exacerbated by increases in sea water temperature and global warming. The more severe weather events such as typhoons, flooding, drought, and increased human-animal interactions will also affect food safety and food production. Governments must be prepared to mitigate the food safety and food security impacts of climate change through early warning systems, evaluation of trends, surveillance systems and mechanisms to rapidly respond to these events. In order to do this, it is necessary to include the One Health approach in food control systems that will allow countries to detect, prevent and respond to emerging diseases at the human-animal-environment interface so as to address food-related public health issues more effectively.

Considering the WHO Global Strategy for Food Safety 2022-2030, the current two progress indicators do not refer directly to climate change. The indicators are specifically related to surveillance of foodborne diseases and to response to food safety emergencies. However, the abovementioned strategy, in strategic priority number 2, requests countries to identify and respond to food safety challenges resulting from global changes and food systems transformation. A strong foodborne disease surveillance system and an emergency response plan for foodborne events should consider climate change as a driver for food safety events.

In this regard a database could consider both JEE[54] and SPAR[55] from the International Heath Regulations (IHR) and additionally to add data from the assessment tool that is being developed by WHO and International Finance Corporation (IFC) / World Bank that includes the assessment of this capacity in the food control systems.

The database could be based on JEE/SPAR, collecting from those, and adding information from the assessment tool WHO/IFC. It also should show global and regional averages to allow the country to identify its position in comparison to regional and global levels.

A compilation of examples, cases and best practices can be an additional source of information for countries to include this topic in their emergency plans.

Simone Moraes Raszl, WHO

WHO manages the IHR – a set of public and legal regulatory frameworks that monitor public health and emergencies with the potential to cross borders. Under the IHR, there are frameworks which measure actions on food safety. Two of these include the JEE and the SPAR. The JEE is a multilateral collaboration to assess country capacities in preventing, detecting, and responding to public health emergencies. The SPAR is a self-assessment conducted by WHO member states which reports on implementations of health requirements.

Neither the JEE nor the SPAR currently contain robust evaluations linked to climate change. Although, one indicator within the JEE measuring 'Health Emergency Management', is used in annual reporting for the Lancet Countdown Climate Change and Health report.

Panel E further sheds light on the issue.

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54 Joint External Evaluation – please read subsequent paragraphs for more detail.

55 State Party Self-Assessment Annual Reporting – please read subsequent paragraphs for more detail.

ON THE LINKS BETWEEN CLIMATE CHANGE AND FOOD SAFETY RISKS

The indicator definition may suggest a series of causal chains that have not yet been assessed at a detailed level. While it is recognized that climate change will affect certain food safety risk profiles, the effects are as nuanced as climate change itself is multiplied with the variations in soil and water composition, agricultural practices, diets and food preparation preference, and the varying degrees of the formalisation of the national economy and level of institutional coordination within a country.

A general overview of some of the main drivers of how climate change may affect food safety has been published by the FAO and is available on the following links: How is climate change affecting the safety of our food?, Climate change: Unpacking the burden on food safety, together with more targeted reports, e.g., Advances in science and risk assessment tools for Vibrio parahaemolyticus and V. vulnificus associated with seafood, Edible insects through the food safety lens and in part here: Thinking about the future of food safety (fao.org). This illustrates the complexity of the impact of climate change on food safety and due to that complexity, it is challenging to classify if and how many changes to the food regulatory system had been a response to climate change or whether it was a response to market forces and new scientific insights.

To measure the outcome of effective food safety regulations with regard to climate change is complex. It requires the causal chain mentioned above to be well understood in all contexts, and requires well established surveillance for food safety, public health and the integration of these surveillance services to understand attribution of burden of disease. These services and their close integration are not consistently available in many LMICs, making it challenging to produce results at a regular basis.

Markus Lipp, Eleonora Dupouy, Vittorio Fattori, Keya Mukherjee, FAO

Pillar 4: Investments

4.1 Value of Green Climate Fund initiatives that include nutrition considerations[56]

The Green Climate Fund (GCF), founded in 2010, has a mandate to support countries in meeting their NDC ambitions to reduce emissions. At least half of all GCF climate adaptation funding must go towards the most climate vulnerable countries, largely comprised of SIDS, LMICs and African states. GCF seeks to de-risk and mobilise large-scale climate finance whilst promoting sustainable socioeconomic development and climate innovation in policymaking.

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56 Please review the special note on finance indicators under Annex 2 for more detail on how this indicator was assessed.

Figure 17: Nutrition Considerations in GCF Funding all projects in 2021 and 2022
(USD millions and % of total for year, N=51)
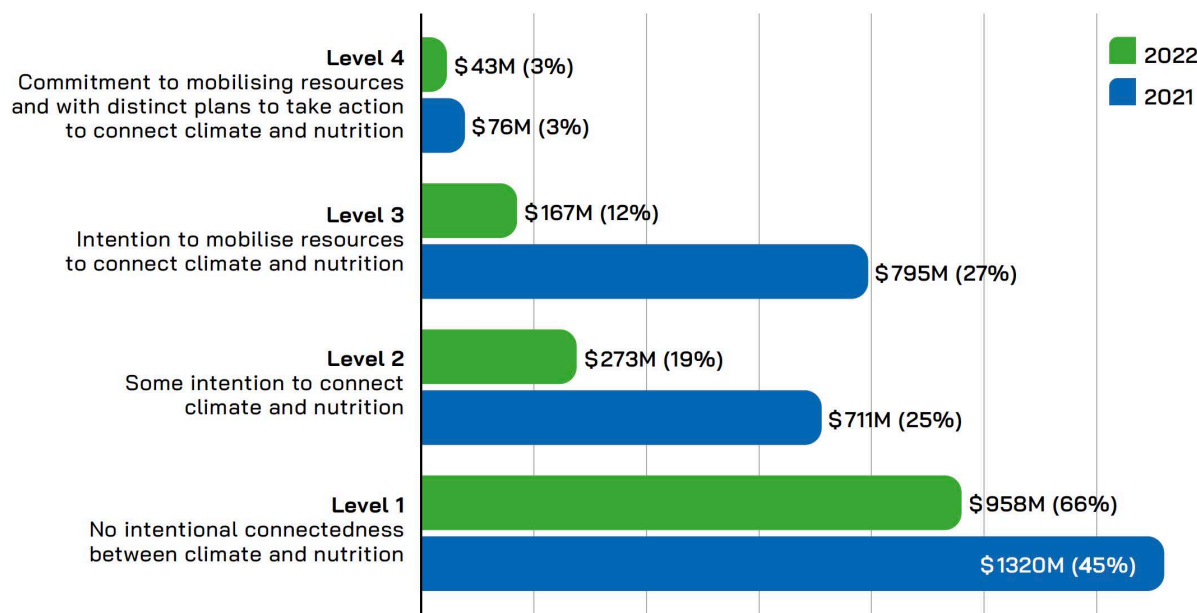
GCF Funding Proposals Source: GCF Project Portfolio, version as of August 2023)

When analysing the GCF funding proposals for each project, nutrition considerations was understood to be measures or interventions which the funding intends to target that explicitly involves nutrition-specific actions. Whereas some measures may be nutrition-sensitive, if the overarching goal was to target agriculture or food broadly without directly mentioning the keyword 'nutrition' or other keywords intending to address nutritional concerns, such as 'diets', this is not counted as a nutrition consideration. The key here is to assess for intentionality.

There were 32 funded GCF projects in 2021 and 19 in 2022. In 2022, 66% of project value had no link to nutrition (level 1). In 2021 the corresponding number was 45%. The integration with nutrition was higher in 2021 than in 2022. Only 3% of grants in both years meet the highest level of integration (level 4). More GCF funding could go towards nutrition-specific interventions. A substantial proportion of GCF projects in 2021 were related to food security or agriculture, but often did not mention nutrition explicitly.

Given that the mission of GCF is to support implementation of NDCs, it is reasonable to assume that improvements in the integration of nutrition considerations into NDCs would be reflected into a greater priority for nutrition on the GCF agenda.

4.2 Value of World Bank loans that are nutrition and climate supporting

For World Bank (IBRD and IDA) projects during 2018-2022, 86% included climate themes, compared to 6% of projects which included nutrition themes (specifically nutrition, not food security). Less than 1% of projects included both climate and nutrition themes.

Among all the finance indicators, including those from the GCF and ODA, the World Bank is the only organisation able to capture a granular level of detail. This is achieved through a dedicated Central Coding Team which assigns percentages for each theme, including for climate and nutrition by project. For example, if 50% is assigned to nutrition for a specific

project, this means that 50% of the total commitment amount of that project has targeted benefits for improving nutrition. Currently, however, it is not possible, from publicly available data, to assess the amount of funding that addresses the overlap between climate and nutrition. One reason is because it is not possible to reconcile funding totals from the IDA Statement of Credits and Grants and IBRD Statement of Loans with project information available on the World Bank's public access project database. The main reason is because granular-level data on funding towards specific themes is only accessible by individual project information on the online database, meaning that to calculate specific funding percentages by theme would require hundreds of hours of manual labour in data entry.

Standardising the reporting of funding for both nutrition and climate would provide much greater clarity on total overlap financing. Policymakers and researchers would be able to track financing data more efficiently and projects will be more intentional in their targets for nutrition and climate.

4.3 Value of food impact investing funds that build in climate considerations

There are numerous funds which focus on climate, and which focus on food and nutrition. Some of the biggest climate funds are the GCF and the Global Environment Facility (GEF). Major food and nutrition funds include the Blackrock Group Nutrition Fund, the Credit Suisse and JP Morgan Sustainable Nutrition Fund, and the EIT (European Institute of Innovation and Technology) Food Impact Fund. Impact investments are a crucial source of private sector and blended financing. Mobilising this funding could have serious positive implications towards both climate and nutritional outcomes.

With thousands of both public and private impact funds currently in existence, many of which have impacts towards climate and nutrition, it is a currently infeasible task to track the accurate amount of funding from food impact investing funds that build in climate considerations.

We have discussed this indicator with the GIIN. The GIIN is a network with hundreds of members, all of which are impact investing funds. They aim to catalyse innovative investments to address global issues and provide an evidence base on efficient investment approaches. Within their current data set, they are able to locate investors which have targeted both nutrition-related SDGs (2 and 3) and climate-related SDGs (6, 7, and 13). Amongst the investors who have disclosed the SDGs they target in their portfolio, 22% indicated that they target at least one nutrition-related and one climate-related SDG.

However, this data is at the portfolio level rather than the granular level. It is not currently possible to confidently assert the amount of funding, out of GIIN's total Assets Under Management (AUM) of $271B, how much of this financing directly links climate and nutrition. In addition, the data only relates to SDG targets, so we cannot state that these definitely intended to target climate or nutrition. For example, within SDG 2: Zero Hunger, this funding may have gone towards food security and hunger rather than nutrition.

Impact investing in areas that link climate and nutrition remains a new and emerging field, but it will very likely grow in the near future. More research, analysis, time and effort could be dedicated from both investor and research communities into what databases should, or could, be constructed.

Panel F explores provides more detail on this indicator.

ASSESSING THE NUTRITION AND CLIMATE IMPACT OF IMPACT INVESTING FUNDS

Impact investing funds aim to offer investors a social impact in addition to a financial return. The GIIN estimates that over 3,000 organisations currently manage $1.164 trillion in impact investing AUM. Additionally, the compound annual growth rate of impact investments between 2017 and 2022 was 18%, signalling rapid growth. Of the 17 SDGs, SDG13 on climate action is the 2nd most targeted SDG for investors (by 80% of investors), SDG3 on good health and wellbeing is targeted as the 6th most important (by 62% of investors), and SDG2 on hunger and malnutrition targeted as only the 13th most important SDG (by 47% of investors). Furthermore, GIIN informs us that among investors who disclosed the SDGs they target with their portfolio, 22% indicated that they target at least one nutrition-related (SDGs 2 or 3) and one climate-related (SDGs 6, 7, or 13). Investors in the GIIN database targeting Nutrition and Climate (as defined above) collectively manage $271 billion in impact AUM as of Dec 31st, 2021[57]. Unfortunately, we cannot precisely state how much of that AUM ($271 billion) is actually flowing towards investments targeting nutrition and climate goals. The $271 billion figure represents the entire organisational impact AUM of investors targeting climate and nutrition, but many of these investors also target other goals which undoubtedly draw from these funds as well. As such, we cannot confidently state a percentage of the impact investing market that is flowing towards climate and nutrition. We aim to work with GIIN to develop more specific numbers in the future, however, the potential to grow climate-nutrition impact investments in this space is clear given that many investors already have climate and nutrition in their portfolios and given the potential to invest in actions that advance climate and nutrition goals at the same time[58].

Lawrence Haddad, GAIN

4.4 Number of companies in World Benchmark Alliance that score well on nutrition and sustainability

The World Benchmark Alliance represents a collection of private sector organisations worldwide which aim to work together to contribute to the SDGs. This is important as the SDGs cannot be achieved without support from the private sector, especially in financing and narrative setting.

350 of the world's most influential food and agriculture companies were assessed for this indicator. We used the Sustainability and Nutrition Scores from WBA's 2021 Food and Agriculture Benchmark, specifically MA2 (Measurement Area) on Environment and MA3 on Nutrition. Each of MA2 and MA3 have a maximum score of 30. We note that 'sustainability' is not the same as 'climate' but there is a significant overlap.

Below is table 5 showing the breakdown of how the classification levels are assigned:

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57 *Hand et al., 2023*

58 *FAO, 2023a*

Table 5: Scores Required for each of the Classification Levels

	MA3 Score 0-9	MA3 Score 10-19	MA3 Score 20-30
MA2 Score 0-9	Level 1	Level 2	Level 2
MA2 Score 10-19	Level 2	Level 3	Level 3
MA2 Score 20-30	Level 2	Level 3	Level 4

Level 1
No intentional connectedness between climate and nutrition

Level 2
Some intention to connect climate and nutrition

Level 3
Intention to mobilise resources to connect climate and nutrition

Level 4
Commitment to mobilising resources and with distinct plans to take action to connect climate and nutrition

Figure 18: Climate-Nutrition Integration for 350 Companies Based on WBA Scores from 2021 Food and Agriculture Benchmark

Level 4
Commitment to mobilising resources and with distinct plans to take action to connect climate and nutrition — 0%

Level 3
Intention to mobilise resources to connect climate and nutrition — 10%

Level 2
Some intention to connect climate and nutrition — 18%

Level 1
No intentional connectedness between climate and nutrition — 72%
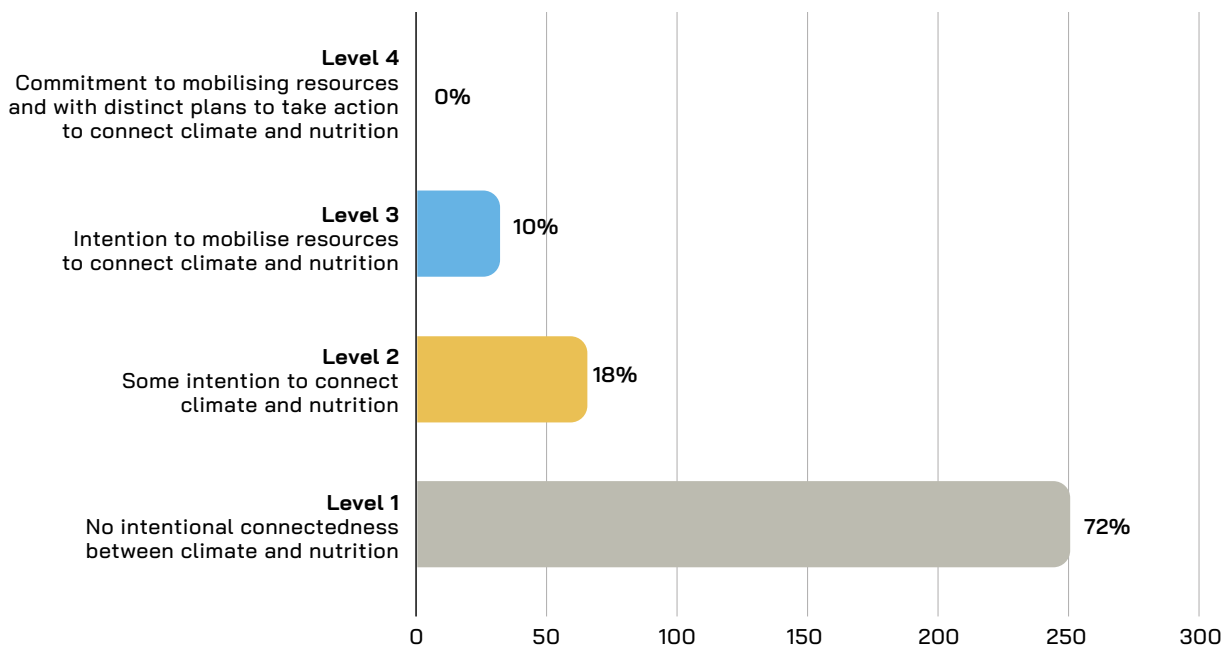
Data Source: WBA 2021 Food and Agriculture Benchmark[58], versions as of April 2023

72% of companies scored at the lowest level of integration (level 1), 18% at level 2, 10% at level 3 and zero companies were classified as level 4, the strongest integration between climate and nutrition. This is a high number of key food and agriculture industry players which do not take actions towards improving environment or nutrition.

The 315 companies that are at level 1 or 2 have considerable room to improve their scores on nutrition and sustainability. They should consider the potential for improving both by linking them together in a more intentional manner through focusing, say, on reducing food loss and waste of nutritious foods.

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59 *Please note that WBA has updated the Food and Agriculture Benchmark in October 2023, and the 2021 Food and Agriculture Benchmark is no longer publicly available online.*
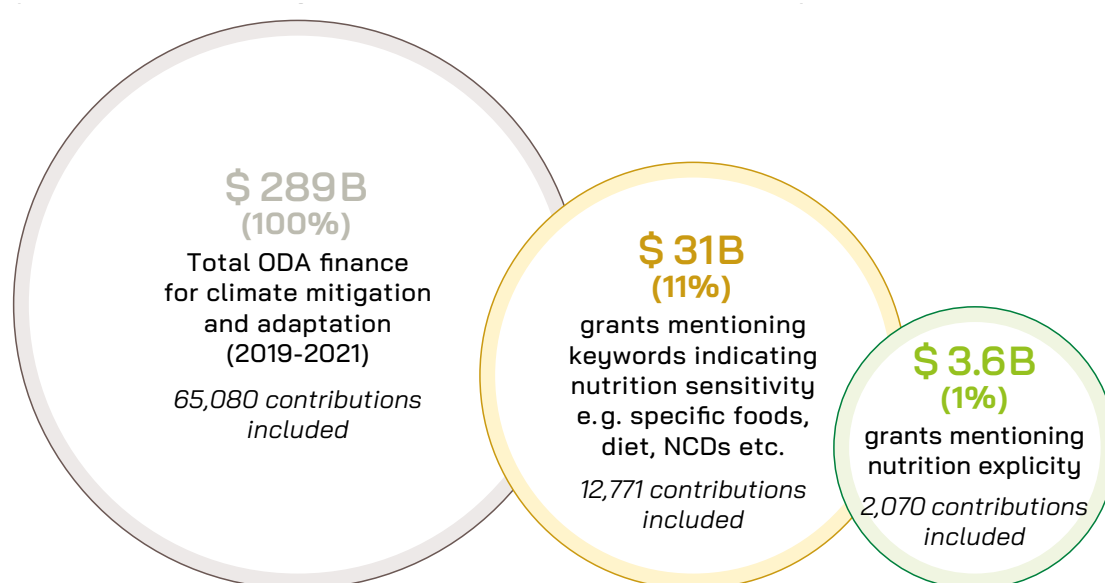
4.5 Value of ODA to climate that is linked to nutrition

ODA is government aid that promotes and specifically targets the economic development and welfare of developing countries[60]. For this analysis, climate-related development finance data from the OECD[61] was used.

Figure 19: Nutrition Considerations in Climate-Related ODA Funding from 2019-2021 Inclusive (USD Billions and % of total funding, total of 65,080 contributions included)

$ 289 B (100%)
Total ODA finance for climate mitigation and adaptation (2019-2021)
65,080 contributions included

$ 31B (11%)
grants mentioning keywords indicating nutrition sensitivity e.g. specific foods, diet, NCDs etc.
12,771 contributions included

$ 3.6B (1%)
grants mentioning nutrition explicity
2,070 contributions included

Data Source: Climate Change: OECD DAC External Development Finance Statistics, versions as of June 2023

From 2019-2021, there were a total of 65,080 OECD climate-related ODA commitments. Of these, only 2,070 commitments explicitly referenced nutrition, either through the purpose code or in the title or in the description, – approximately 3% of commitments and 1% of total financing by monetary value (in USD).

When expanding the analysis to include all commitments mentioning a wider list of keywords including specific foods, diet, NCDs etc. then the total rises to 13,771 or 21% of the total commitments and 11% of total financing by monetary value (in USD).

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60 *Source: OECD Official Website*

61 *Source: Climate Change: DAC External Development Finance Statistics, 2019-2021*

Figure 20: Financial Instruments Used for All OECD Climate-Related Financing from 2019-2021 inclusive
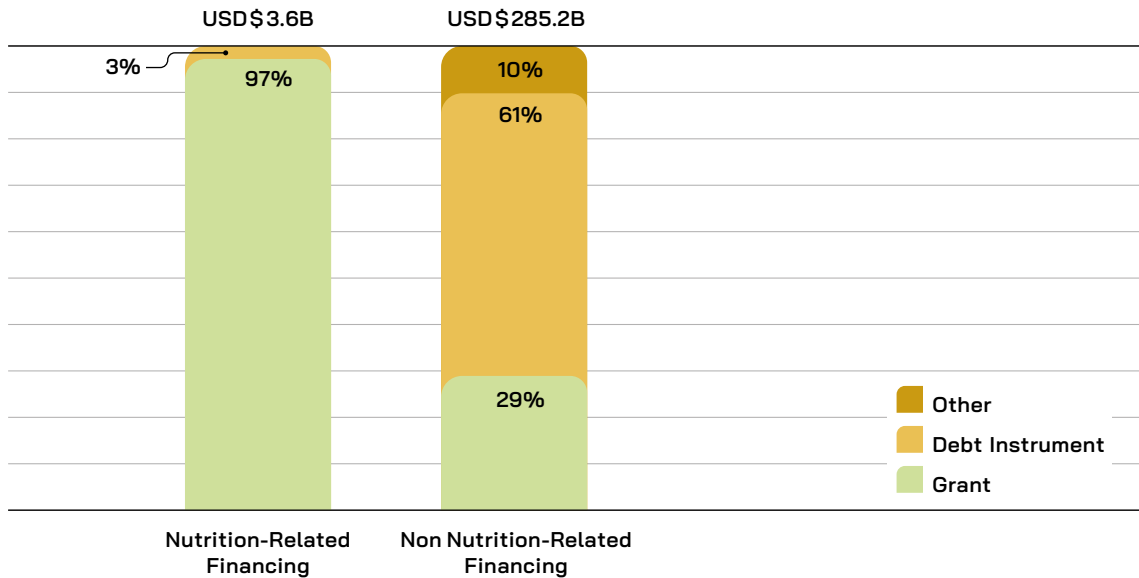
On financing instruments, 97% of all financing explicitly referencing nutrition comes from grants, compared to non-nutrition financing in which 61% is in the form of debt.

25% of ODA climate financing that links to nutrition comes from European Union institutions, with the vast majority of all financing originating from the Development Assistance Committee[62] (DAC) countries. At 47%, Sub-Saharan Africa receives the highest share of climate ODA that explicitly references nutrition.

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62 The DAC acts under the guidance of the OECD and has 24 member states: Australia, Austria, Belgium, Canada, Denmark, the European Union, Finland, France, Germany, Greece, Ireland, Italy, Japan, South Korea, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

Conclusions

The key findings in this baseline report have important applications for improving both climate and nutrition outcomes by catalysing more and better integrated action between the two.

First, the report identifies opportunities for countries, businesses, and development agencies to improve integration of climate and nutrition action to spur acceleration in the outcomes of both. There are gaps at the implementation, action and support level (e.g. nutrition is not present enough in in NDCs and NAPS), at the data and knowledge level (e.g. climate is not present enough in global nutrition report commitments), at the policy level (e.g. food procurement and dietary guidelines do not emphasise climate enough) and at the finance level (there is a low level of investment by development agencies and businesses in the nexus of climate and nutrition).

Second, there are bright spots with certain countries, businesses and agencies leading the way. We have highlighted these and we can all learn from them.

Third, the actions that serve to accelerate climate and nutrition need to become better understood and socialised. This is the remit of the complementary paper produced by FAO: *'Climate Action and Nutrition: Pathways to Impact'.*[63] The baseline paper identifies the areas for greater investment in action to advance nutrition and climate together and the FAO paper tells us what stakeholders might consider investing in.

Fourth, there were many challenges in collecting the baseline data. It took much more time than we had anticipated. We hope that the methods we have used in this initial report will be refined and can form the basis for more routine data collection in future years. Additionally, we hope that methods to collect integrated data will be improved. Our results suggest several areas for strengthening.

Fifth, we very much hope that individual countries will use the baseline to set their own targets for some of these indicators. 'Country level' data are available at the request of countries. Tracking of indicators towards targets will help governments assess progress and identify areas where more support can be brought to bear.

Integrated action on climate and nutrition can lead to an acceleration of improvement in both outcomes. It makes little sense to exclude nutrition areas of action for improved climate outcomes, nor to exclude climate areas of action to improve nutrition outcomes. Not all the opportunities for integration will prove fruitful, but all should be explored. We trust that this I-CAN baseline report will serve as a key guide to that exploration.

2030 is drawing close. Time is of the essence as we strive to achieve the SDGs, aiming to eliminate hunger and malnutrition whilst ensuring positive impacts for climate action and our natural environment. With sustained and combined efforts, closer integration between climate and nutrition is possible, and will have positive impacts on the lives of millions around the world – today and tomorrow.

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63 FAO, 2023a

Annex 1 - Literature Review

This section will review some existing reports published by NGO partners which assess NDCs and rank them based on pre-determined criteria. Our methodology was developed using these precedents to guide our design.

Reports that assess NDCs were chosen due to 1) the availability of reports that assess NDCs in comparison to lower levels of available data for reports that assess the other I-CAN indicators, 2) NDCs being a common linking point for every country, and 3) I-CAN indicator 1.1 assessing NDCs as one of the focal points for the baseline paper given the higher level of political knowledge surrounding NDCs and 4) NDC as a priority for COP and member states overall.

The literature review was useful in providing successful and credible examples of methodologies developed for similar types of data assessment and informed the design of the I-CAN baseline methodology. Main lessons learned include:

◗ Measuring the degree of integration should and can be ranked in 3-5 levels broadly ranging from no integration to integration with specific plans for action

◗ Mitigation and adaptation actions should be given equivalent status in the indicators, given that 1) it is difficult to clearly differentiate between the two, 2) we cannot claim with certainty that one is more conducive towards climate and nutrition action than the other and therefore should be ranked higher, and 3) some policies will proposed joint mitigation and adaptation actions

Below is a detailed review of three chosen reports, including: 1) FOLU's (The Food and Land Use Coalition) 2021 report: 'From Global Commitments to National Action: A Closer Look at Nationally Determined Contributions from a Food and Land Perspective', 2) GAFF's (Global Alliance for the Future of Food) 2022 report: 'Untapped Opportunities for Climate Action: An Assessment of Food Systems in National Determined Contributions; and 3) WWF's (World Wide Fund for Nature) 2022 paper: 'Unlocking and Scaling Climate Solutions in Food Systems: An Assessment of Nationally Determined Contributions'.

FOLU Report: 'From Global Commitments to National Action: A Closer Look at Nationally Determined Contributions from a Food and Land Perspective'

FOLU (The Food and Land Use Coalition) published this report in November 2021 which analyses 15 NDCs submitted before October 2021, representing over 60% of greenhouse gas emissions, including Argentina, Australia, Brazil, Canada, Colombia, Ethiopia, the European Union, Indonesia, Japan, the Republic of Korea, Mexico, the Russian Federation, South Africa, the United Kingdom, and the United States of America. The report was prepared in advance of COP26 and assesses how action-oriented the NDCs are in terms of transforming the food and land sector, what specific policy measures they propose, and where policy gaps and opportunities are.

Firstly, we will review how the report assesses the question 'How action-oriented are the analysed NDCs from a food and land perspective?'.

How action-oriented are the analysed NDCs from a food and land perspective?

Table 1a. Overview of findings

	Actions in agriculture and food	Actions in LULUCF	Food and land policies	Public finance commitments	Spatial information	Technology
Argentina	▲▲	▲▲	▲▲	▲	▲▲	▲
Australia	▲	O	O	▲	O	▲
Brazil	▲▲	▲	▲▲▲	▲▲	O	O
Canada	▲▲▲	▲▲▲	▲▲	▲▲▲	O	▲
Colombia	▲▲▲	▲▲▲	▲▲▲	O	▲▲	▲▲
Ethiopia	▲▲▲	▲▲▲	▲▲▲	▲	O	▲
EU	O	▲	▲▲	O	O	O
Indonesia	▲▲	▲▲▲	▲	▲	▲	▲▲
Japan	▲▲	▲▲	O	O	O	O
R. of Korea	O	▲	O	O	O	O
Mexico	▲▲	▲▲	▲▲	O	O	▲
Russian Fed.	O	▲	O	O	O	O
South Africa	▲	O	O	O	▲	▲
UK	▲▲	▲	▲▲▲	▲	▲	▲▲
USA	▲▲	▲	O	▲	O	▲▲
Overall Number of NDCs with a very high (green), high (light green), medium (yellow) or low (orange) rating (out of 15 NDCs analysed)	3 / 7 / 2 / 3	4 / 3 / 6 / 2	4 / 4 / 1 / 6	1 / 1 / 6 / 7	2 / 3 / 10	4 / 6 / 5

Legend	Priority actions in food and land	Food and land policies supporting priorities	Public financial commitments	Spatial information	Technology
▲▲▲ Very high	Specific orientations across different subsectors including specific targets and means of implementation	Sectoral policies referenced in relations to actions for both sectors	Specific indications of funding for actions in both sectors	Inclusion of specific map(s) of current and intended land use	Specific indications of technological development needs or plans in the food and land sector, detailed focus areas, and means of implementation/funding
▲▲ High	Specific orientations across different subsectors	Sectoral policies referenced in relations to actions sector	Specific indications of funding for actions in one of the sectors	Inclusion of potentially-actionable maps	Specific indications of technological development needs or plans in the food and land sector and detailed focus areas
▲ Medium	Generic orientations	Sectoral policies referenced but not linked to specific actions	General indications of funding for actions in at least one sector	Generic information on spatial planning and/or non-actionable maps	General indications of technological development needs or plans in the food and land sector
O Low	No coverage or details on orientations	No sectoral policies listed	No detail on funding for actions in the food and land sector	No information on spatial planning	No detail on technological development needs or plans in the food and land sector

For detailed assessment criteria, see annex

Five criteria are chosen for assessment (shown in the legend), and they are ranked into four levels of 'low', 'medium', 'high', and 'very high'. The requirements to meet the four levels for each of the five criteria are different, but broadly, they can be broken down as such:

Low: does not cover any relevant information

Medium: generic indications or mentions of relevant information

High: specific indications of action-orientation

Very High: requirements for the 'high' level have been met but there is further specificity provided on how the actions will be taken in terms of plans, funding, roadmaps, or hitting targets

A shape(s) is assigned to each level for easier cognitive association.

Next, we reviewed how the report assesses the question 'What specific policy measures are included in the analysed NDCs with regard to policy interventions to transform food and land use?'

Ten types of policy measures are chosen by FOLU, with three ranking levels based on 'no mention or action', 'nominal mention', and 'essential action'. The data is colour coded.

For each section of the report, a short written explanation for country-specific analysis is provided in the text of the report. FOLU also produced a 'Country Profiles' report which provides a deep dive analysis into each country.
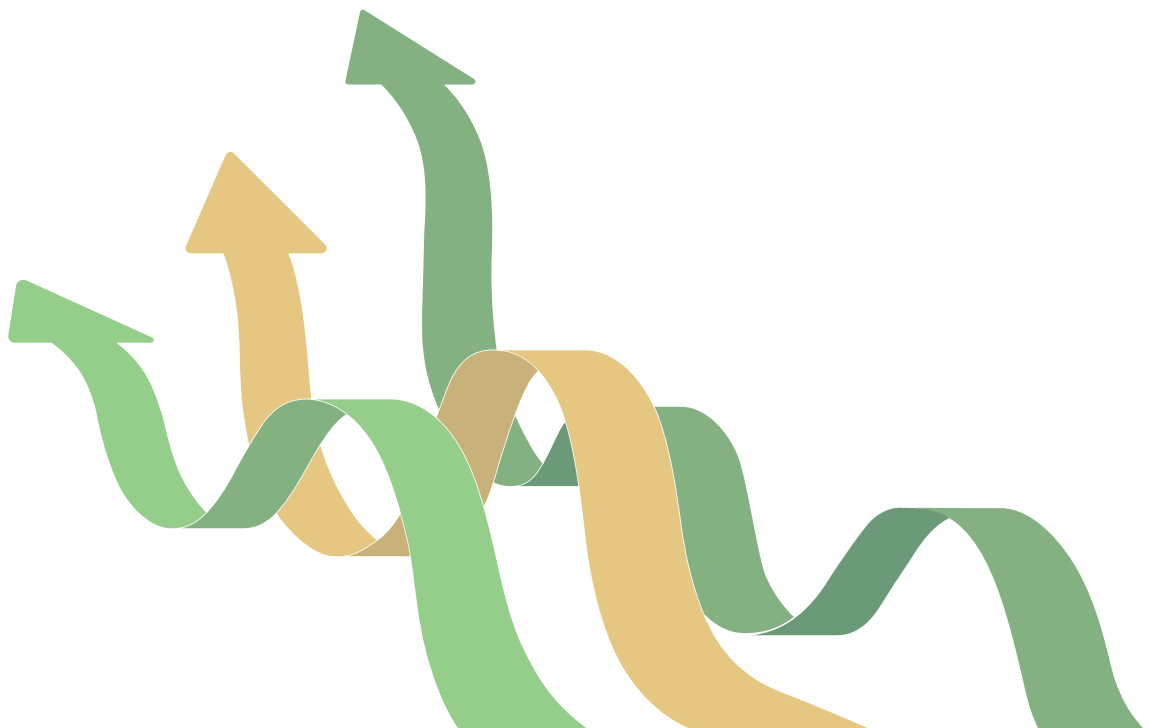
What specific policy measures are included in the analysed NDCs with regard to policy interventions to transform food and land use?

Table 2a. Indications of policy responses to leverage critical transitions and food and land use transformation

Critical Transitions	ARG	AUS	BRA	CAN	COL	ETH	EU	IDN	JAP	ROK	MEX	RUS	RSA	UK	US	Highlights
Sustainable and healthy **diets**	Nominal	None	None	None	Essential	None	None	None	None	None	Nominal	None	None	Essential	None	*Only the UK and Colombia provide indications of diet-related policy measures.*
Productive and regenerative **agriculture**	Essential	Essential	Essential	Essential	Essential	None	Essential	Essential	Essential	None	Essential	Essential	Essential	Nominal	Essential	*Consistently addressed by most NDCs.*
Protect and restore **nature**	Essential	None	Essential	Essential	Essential	Essential	Nominal	Essential	Nominal	Essential	Essential	Essential	Essential	Essential	Essential	*Consistently addressed by most NDCs.*
Healthy and productive **ocean**	Essential	None	Essential	Essential	Essential	Nominal	None	Essential	None	Essential	Essential	None	Essential	Essential	Nominal	*Covered by almost half of the NDCs.*
Diversified **protein** supplies	None	None	None	None	None	Essential	None	None	None	None	None	None	None	None	None	*Only covered by Ethiopia in relation to diversifying livestock.*
Reduce **food loss/waste**	Nominal	None	None	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	None	Nominal	Nominal	None	None	*Most countries address waste management without explicitly linking food waste.*
Sustainable **local food** economies, loops, and linkages	Essential	None	None	Nominal	Essential	None	Nominal	None	None	None	Essential	None	None	Essential	None	*Mostly addressed by Latin American countries regarding circular economy policies.*
Digitalised and efficient food and land use systems	Essential	Nominal	None	Essential	Essential	Essential	Essential	Nominal	Essential	None	Essential	Essential	Essential	Essential	Nominal	*Covered by half of the NDCs, but none address open-source tools.*
Stronger and better adapted **rural livelihoods**	Essential	None	None	Essential	Essential	Essential	Essential	Essential	None	Essential	Nominal	None	Essential	Essential	Essential	*A just transition is addressed by most NDCs, but not consistently linked to a policy action.*
Gender and **equal access**	Essential	None	Nominal	Essential	Essential	Essential	Essential	Essential	None	Essential	None	Essential	Essential	Essential	None	*Consistently addressed by most NDCs, mostly in terms of gender-informed policies.*

● Essential Action
NDC lists essential policy action(s), including specific commitments, strategies, or funding, related to the critical transition.

● Nominal Mention
NDC provides inexplicit or unclear information on the key transition (i.e., topic is mentioned, but not as a policy action).

● No Mention or Action
NDC does not mention any specific information on policy interventions for the critical transition.

GAFF Report: 'Untapped Opportunities for Climate Action: An Assessment of Food Systems in Nationally Determined Contributions'

GAFF (Global Alliance for the Future of Food) produced this report in 2022 which applies an Assessment Framework to 14 countries including Bangladesh, Canada, China, Colombia, Egypt, the European Union, Kenya, Senegal, South Africa, the United Kingdom, the United States and Vanuatu. The report is part of a toolkit that highlights some of the many advantages of adequately and comprehensively integrating food systems transformation in NDCs.

As part of this toolkit, GAFF commissioned Climate Focus and Solidaridad to develop the Assessment Framework, which is published in a separate document 'A practical guide to assessing food systems in Nationally Determined Contributions'.

The Assessment Framework was developed under, and guided by, the Seven Calls to Action and the Seven Principles. These are used to assess the extent to which a food systems perspective is adopted in developing and implementing NDCs.

The Assessment Framework considers three key elements of the NDCs, including: 1) the process of planning, developing, and formulating the NDC, 2) the content of the NDC, including its targets and measures, and 3) how the NDC is to be implemented and monitored. Further priority actions were added to these elements after GAFF's review of the 14 countries, which proposed ways for deeper integration of food systems into NDCs.

The actual results from the assessment of the 14 countries was presented in a written format which considered all three key elements, with one section discussing all the countries together rather than an individual highlight for each country.

WWF Paper: 'Unlocking and Scaling Climate Solutions in Food Systems: An Assessment of Nationally Determined Contributions'

WWF (World Wide Fund for Nature) produced this paper in 2022 which reviews previous and updated NDCs of the 134 parties which submitted an updated NDC as of September 2022. The NDCs were reviewed to determine if and to what extent food systems measures are incorporated in these climate plans.

The review and analysis involved three steps:

1. Gathering qualitative information from each NDC: An assess-ment framework identified information related to food systems in each NDC. Qualitative information was gathered through a key-word search of terms related to food systems including equity considerations, co-benefits, and ecosystems in each NDC. The keyword search assess-ment is available in the Annex 2.

2. Assessing the quality of food systems measures in NDCs: An analysis framework gauged the degree and scope of food systems measures within all updated NDCs and compared this with the previous versions of these NDCs.

3. Identifying trends and gaps: Trends in updated NDCs and previous NDCs and between the NDCs of individual countries were identified to determine if and how updated NDCs have changed regarding incorpo-ration of food systems measures.

When gathering qualitative information from each NDC, a keyword search was used by researchers with a list of pre-determined list of keywords most relevant to the concepts they were searching for. For example, this was the list of keywords used to identify relevant mitigation targets and measures for food systems:

" climate-smart agriculture, sustainable livestock, agroecology, regenerative agriculture, sustainable agriculture, sustainable aquaculture, sustainable fishing, sustainable land management, sustainable forest management, and agro-pastoral systems, conservation agriculture, precision agriculture, food waste, food loss, and sustainable diets, nature-based solutions, organic waste, composting, circularity, circular systems, waste solid waste (MSW), landfill, methane, land use and land use change and forestry (LULUCF). "

For more complex concepts, such as examining whether mitigation and adaptation measures are quantitatively grounded, researchers would review manually and determine the outcome.

When assessing the quality of food systems measures in NDCs, the main results presented in the paper involve whether the updated NDCs were improved from the previous versions. The improvements are measured by using a checklist of five criteria, including:

1) Food Systems in Mitigation, 2) Food Systems in Adaptation, 3) Numerical mitigation targets for food systems, 4) Ecosystems mentioned, and 5) Role of IP/LC mentioned (Indigenous Peoples and Local Communities). This is then used to determine whether the updated NDC was improved with a short written summary of the main findings.

See examples below:

KEYS

ECOSYSTEMS

AGRICULTURAL LAND · FOREST · MARINE · URBAN · GRASSLAND & SAVANNAH · WETLAND · OTHER

STATUS OF INTEGRATION OF FOOD SYSTEMS IN NDC

- 🟩 FOOD SYSTEMS MEASURES IMPROVED IN THE UPDATED NDC
- 🟨 FOOD SYSTEMS MEASURES DID NOT CHANGE IN THE UPDATED NDC
- 🟧 FOOD SYSTEMS MEASURES DECLINED IN UPDATED NDC

Country	NDC version	Food Systems in Mitigation	Food Systems in Adaptation	Numerical mitigation targets for food systems	Ecosystems mentioned	Role of IP/LC mentioned	Status of integration of food in NDC	Summary assessment findings
CANADA	Previous NDC	✓	✗	✗	🌿🌾🟦	✓	🟩	The previous NDC includes waste management and ecosystem measures, whereas the updated NDC has mitigation, adaptation, and numerical goals to transform food systems, including climate smart agriculture. **The updated NDC also mentions plans to reduce food and organic waste sent to landfills by 2030.**
	Updated NDC	✓	✓	✓	🌿🌾🟦🌱	✓		

Country	NDC version	Food Systems in Mitigation	Food Systems in Adaptation	Numerical mitigation targets for food systems	Ecosystems mentioned	Role of IP/LC mentioned	Status of integration of food in NDC	Summary assessment findings
OMAN	Previous NDC	✓	✓	✗	🟦	✗	🟧	Oman's previous NDC mentions mitigation from solid waste and adaptation in agriculture. The updated NDC considers food security adaptation measures but does not include food systems elsewhere. Both NDCs include sustainable fishing measures.
	Updated NDC	✗	✓	✗	🟦	✗		

Country	NDC version	Food Systems in Mitigation	Food Systems in Adaptation	Numerical mitigation targets for food systems	Ecosystems mentioned	Role of IP/LC mentioned	Status of integration of food in NDC	Summary assessment findings
TANZANIA	Previous NDC	✓	✓	✗	🌿🌾🟦	✗	🟨	Both NDCs include climate smart agriculture and sustainable livestock practices. The updated NDC does include sustainable fishing, which is not in the previous NDC. No quantitative food-systems mitigation target is in either NDC.
	Updated NDC	✓	✓	✗	🌿🌾🟦	✗		

The results are presented in a statistical and written format within the paper, with a summary overview of all reviewed NDCs in Annex 1 and a detailed methodology outline in Annex 2 of the paper.

Annex 2 - Detailed Methodology

Below is an outline of how the classification process was conducted for all qualitative reviews, including indicators: 1.1 on NDCs, 1.2 on Climate NAPs, 1.4 on NNPs, 2.2b on Data and Knowledge Portals, 2.3 on IPCC Reports, 2.4 on GNR Commitments, 3.2 on FBDGs, and 3.3 on Food Procurement.

1. Keyword searches (nutrition keywords in climate documents and vice versa) were conducted to identify if relevant keywords are present in the documents analysed

2. Relevant sections were read, analysed, and a classification level (1-4) was assigned for each document

3. Documents were run through Python (a high-level computer programming language) software for a second round of keyword searches

4. Missing keywords (if any) from the manual review were further added in and analysed

5. Review process is repeated and conducted for the second time

6. Final classification levels are assigned, and all data is aggregated to form data visualization (charts and graphs)

We present here a list of all the keywords used in the baseline analysis, for both the climate and nutrition sides. Depending on the indicator, a mixture of keywords more relevant to that specific indicator may have been used. This can be made available upon request.

In our analysis, we tested documents for many nutrition-relevant keywords including terms related to food safety, or food quality. The appearance of these keywords alone is not sufficient to be considered as addressing nutrition explicitly. In each instance, the sentence and context in which this keyword is used will be reviewed manually to determine whether there are nuances to indicate that this intends to address nutrition. Likewise, the same process has been repeated for climate-relevant keywords to make sure they intend to address climate, such as for the word sustainability, which could have multiple meanings. The reason we have tested for these types of keywords is to ensure that we did not miss out on subtleties in the text which has implications for our findings.

In several indicators, the phrase 'climate considerations' is used. For this analysis, we define this as explicit references to climate change, the mitigation of greenhouse gas emissions and adaptation to the immediate effects of climate change, and other associated issues and concepts. We recognise the limitation this has compared to more comprehensive analyses which could also consider additional environmental loads and stresses which are often climate-related, such as land systems change, freshwater use, biogeochemical flows, atmospheric pollution, biodiversity loss and ozone depletion. However, this definition is considered sufficient for the purpose of this report: to analyse the extent to which policies, strategies and approaches are taking an *intentional* approach to *explicitly* linking climate and nutrition.

Nutrition Keywords

Group 1 - General Nutrition: Nutrition, Nutritional, Nutrient(s), Malnutrition, Undernutrition, Overnutrition, Nutritious, Nutritious Foods, Food Systems

Group 2 - Diet-related: Diet(s), Balanced Diet, Healthy Diet, Unhealthy Diet, Affordable Diet, Accessible Diet, Available Diet, Diet Diversity, Plant-Based, Vegan, Vegetarian

Group 3 - NCDs and Human Health: Obesity, Overweight, Underweight, Weight Loss, Weight Gain, Anemia, Anaemia, Diabetes, Blood Pressure, Hypertension, Blood Sugar, Cholesterol, Cardiovascular Disease, Blood Iron, Stunting, Wasting

Group 4 - Food Safety: Food Label, Food Safety, Food Control, Food Quality

Group 5 - Food Groups and Types: Vegetable(s), Fruit(s), Meat, Red Meat, White Meat, Fish, Starch, Dairy, Protein, Fat, Fats, Oil, Oils, Grain, Grains, Wheat, Rice, Maize, Nuts, Eggs, Milk, Pulses, Animal-Sourced Foods / ASF

Group 6 - Nutritional Content: Vitamin, Micronutrient(s), Mineral, Fiber, Fibre, Calcium, Gluten, Calorie, Caloric, Carbohydrate, Sodium, Salt, Sugar, MSG, Iron, Zinc, Fortified, Biofortified, Fortification, Biofortification

Climate Keywords

Group 1 - General Climate: Climate, Climate Change, Climate Crisis, Greenhouse Gas(es), CO2, GHG, Emissions, Extreme Weather, Methane, Sea Level(s), Global Warming, Temperature, Biodiverse(ity), Mitigation(s), Adaptation(s), Net Zero

Group 2 - Energy: Carbon, Fossil Fuel(s), Oil, Coal, Energy Efficient, Renewable Energy

Group 3 - Sustainability: Sustainable, Sustainability, Recycle(ing), Reduce(ing), Reuse(ing), Single-Use Plastic, Compost(ing), Biodegrade(able), Package(ing)

Group 4 - Food: Food Loss(es), Food Waste(s), Overproduce(ing), Shelf Life, Portion Size, Local(ly), Regional(ly), Season(al)

Group 5 - ESG: Fairtrade, Animal Welfare, Free Range, Water Use, Land Use, UNFCCC, ESG

Group 6 - Agriculture: Intensive Farming, Overfarming, Crop Diversity, Overgrazing, Monoculture, Indigenous Crops, Organic, Bio, Nature-Based Solutions, Neglected-Underutilised Species, Agroecology, Ecology

Python software was used to reinforce the manual reviews of the documents. It was a tool that was used to streamline the baseline analysis process and was useful in capturing details which may have been missed from human error. This strengthened the accuracy of the results. However, by no means were the Python-produced results the main determinant of the classification levels themselves. Human reviews remained the final authority on the classification of documents.

The Python code was designed to capture: 1) whether the keyword appears in the document, 2) which page the keyword appears on (in accordance with the pdf page number, not the document page number), 3) the total number of times the keyword appears in the document, and 4) a short extracted sentence/paragraph in which the keyword appears in. An Excel file with the corresponding data fields was produced by the Python software. For transparency, the Python code we have used for keyword searches is presented below:

```python
import pandas as pd
from PyPDF2 import PdfReader
import re

file_names = ['The document(s) to be analysed was inputted here']

keywords = ['The keywords to be searched for was inputted here']

all_keyword_results = []

for file_name in file_names:
    pdf = PdfReader(open(file_name, 'rb'))

    keyword_pages = {}
    keyword_count = {}
    keyword_sentences = {}

    for keyword in keywords:
        pages = []
        count = 0
        sentences = []
        for page_number in range(len(pdf.pages)):
            page = pdf.pages[page_number]
            text = page.extract_text()
            matches = re.finditer(r"\b(?:{})\b".format(keyword), text, flags=re.IGNORECASE)
            for match in matches:
                count += 1
                sentence_start = text.rfind('.', 0, match.start()) + 1
                sentence_end = text.find('.', match.end())
                sentence = text[sentence_start:sentence_end].strip()
                sentences.append(sentence)
                if page_number + 1 not in pages:
                    pages.append(page_number + 1)
        keyword_pages[keyword] = pages
        keyword_count[keyword] = count

        keyword_sentences[keyword] = sentences
    # Convert the results to a pandas DataFrame
    data = {'Keyword': [], 'Pages': [], 'Total Occurrences': [], 'Sentences': []}
    for keyword, pages in keyword_pages.items():
        data['Keyword'].append(keyword)
        data['Pages'].append(', '.join(map(str, pages)) if pages else 'Not found')
        data['Total Occurrences'].append(keyword_count[keyword])
        data['Sentences'].append('\n'.join(keyword_sentences[keyword]))

    df = pd.DataFrame(data)
    df['File Name'] = file_name  # Add the file name as a column

    all_keyword_results.append(df)
# Concatenate the results for all files into a single DataFrame
combined_results = pd.concat(all_keyword_results, ignore_index=True)

# Save the combined results to an Excel file
combined_results.to_excel('The desired output Excel file name was inputted here',
index=False)
```

All documents used for the baseline analysis have undergone at least rounds of two human reviews. These results have been shared with partner organisations, including FAO, WHO, and SUN. For all non-English documents, a machine translation software called

DeepL was used where the file type was compatible with the software. Otherwise, all keywords in local languages were used for the keyword search as part of a manual review.

Table 6: Detailed Coding Table for Classification of the Four Levels under Each Indicator

Indicator	Level 1	Level 2	Level 3	Level 4
Implementation, Action, and Support				
1.1 Number of Nationally Determined Contributions (NDCs) that include nutrition-related actions	No mentions of relevant nutrition keywords and concepts in the NDC	Mentions of relevant nutrition keywords and concepts in the NDC AND Some analysis conducted into linkages between nutrition and climate	Level 2 is met, with deeper analysis on nutritional linkages (opportunities/risks) to climate and vice versa AND Nutrition improvement is an objective within the NDC with some initial plans on measures to be taken to achieve this	Level 3 is met, with in-depth analysis on nutritional linkages to climate and vice versa AND Nutrition improvement is targeted within the NDC with clear actions outlined and distinct plans on policy/program design e.g., timeline, funding, regions, baselines and targets, lead agencies etc.
1.2 Number of climate National Adaptation Plans (NAPs) that include nutrition-related actions	No mentions of relevant nutrition keywords and concepts in the NAP	Mentions of relevant nutrition keywords and concepts in the NAP AND Some analysis conducted into linkages between nutrition and climate	Level 2 is met, with deeper analysis on nutritional linkages (opportunities/risks) to climate and vice versa AND Nutrition improvement is an objective within the NAP with some initial plans on measures to be taken to achieve this	Level 3 is met, with in-depth analysis on nutritional linkages to climate and vice versa AND Nutrition improvement is targeted within the NAP with clear actions outlined and distinct plans on policy/program design e.g., timeline, funding, regions, baselines and targets, lead agencies etc.
1.3 Number of climate-informed nutrition interventions and programmes	Not applicable - Agreed with our partners WHO, FAO, and SUN to drop this as an indicator on its own as this is covered under other indicators e.g., 1.4 on NNPs, 3. 2 on FBDGs etc.			
1.4 Number of National Nutrition Plans (NNPs) that refer to climate	No mentions of relevant climate keywords and concepts in the NNP	Mentions of relevant climate keywords and concepts in the NNP AND Some analysis conducted into linkages between nutrition and climate	Level 2 is met, with deeper analysis on climate mitigation or adaptation strategies AND Climate mitigation / adaptation is an objective within the NNP with some initial plans on measures to be taken to achieve this	Level 3 is met, with in-depth analysis of climate implications on nutrition and vice versa AND Climate mitigation / adaptation is targeted within the NNP with clear actions outlined and distinct plans on policy/program design e.g., timeline, funding, regions, baselines and targets, lead agencies etc.
1.5 Number of significant multilateral partnerships in the climate-nutrition area	Not applicable – Initial analysis was conducted, but after discussions with our partners we have agreed that the classification levels are not relevant for this particular indicator due to: 1) difficulties in accurately capturing/defining what is considered a significant multilateral partnership and 2) the number of partnerships is not indicative of the success/impacts of partnerships			

Indicator	Level 1	Level 2	Level 3	Level 4
Capacity Building, Data, and Knowledge Transfer				
2.1 Value of public R&D funding programmes that bridges climate and nutrition	Not applicable - There is currently no accurate way to assess this indicator'			
2.2a Number of countries that have conducted a climate change and health vulnerability assessment (V&A) which included nutrition Insights from WHO's Health and Climate Change Survey 2021 used for this analysis – section on 'Malnutrition and Food-Borne Diseases' assesses these 5 criteria: • Health surveillance system exists? • Health surveillance system includes meteorological information? • Climate-informed health early warning system in place? • Climate-informed health early warning system has been evaluated? • Health sector response in place?	0 out of 5 criteria met	1 out of 5 criteria met	2-3 out of 5 criteria met	4-5 out of 5 criteria met
2.2b Number of data and knowledge portals that bring climate and nutrition together	The portal contains relevant keywords and concepts on climate but not nutrition, or vice versa	The portal contains both climate and nutrition keywords and concepts AND Basic analysis conducted into linkages between nutrition and climate	Level 2 is met, with deeper analysis into nutrition-climate linkages AND Using data and evidence from both climate and nutrition angles in cross-cutting analysis	Level 3 is met, with in-depth analysis on nutrition-climate linkages AND Integrated climate and nutrition data is available on the portal e.g. graphs that cross-link climate and nutrition data over time
2.3 Number of references to nutrition science articles in IPCC reports	No references to nutrition science articles in IPCC report	Some references to nutrition science articles in IPCC report, 1-2 mentions	References to nutrition science articles in IPCC report, 3-5 mentions	Distinct references to nutrition science articles in IPCC report, more than 5 mentions
2.4 Global Nutrition Report tracks nutrition-promoting climate adaptation actions	No mentions of relevant climate keywords and concepts in the commitment	Mentions of relevant climate keywords and concepts in the commitment AND Some analysis conducted into linkages between nutrition and climate	Level 2 is met, with deeper analysis on climate mitigation or adaptation strategies AND The commitment targets a goal which will have climate benefits with some initial plan for project/programme delivery	Level 3 is met, with in-depth analysis of climate implications on nutrition and vice versa AND The commitment directly targets a climate-related goal with distinct plans for project/programme delivery e.g., timeline, funding, action plans

Indicator	Level 1	Level 2	Level 3	Level 4
Policy and Strategy				
3.1 Number of countries which are promoting climate-smart nutritious foods such as neglected underutilised species (NUS) and fortified/biofortified crops and staple foods	Not applicable - There is currently no accurate way to assess this indicator			
3.2 Number of country food-based dietary guidelines that include climate considerations	No mentions of relevant climate keywords and concepts in the FBDG	Mentions of relevant climate keywords and concepts in the FBDG AND Some analysis conducted into linkages between nutrition and climate. This includes the recognition of at least one link	Level 2 is met, with deeper analysis on climate implications within the FBDG AND Recommends population to eat foods from more sustainable sources	Level 3 is met, with in-depth analysis of climate implications within the FBDGs AND at least one of the following: Climate frameworks systemically integrated into the FBDG design OR Recommends population to eat foods from more sustainable sources with clear advice on how to do so. A non-exhaustive list of recommendations can be found on the discussion of the incorporation of sustainability into FBDGs from FAO[62]
3.3 Number of countries that factor climate into food procurement decisions for food in public settings (e.g., school meals and school feeding, health and care facilities), as well as safety nets and emergency programmes Note* Analysis on this indicator was conducted by WHO consultants	No mention of relevant key words and/or concepts relating to climate topics	The food procurement policy contains climate and food/nutrition considerations and/or analyses AND/OR The food procurement policy includes voluntary climate criteria for food purchased, served or sold	The food procurement policy includes at least one mandatory climate criteria for food purchased, served or sold	The food procurement policy includes multiple mandatory criteria (i.e. categories of criteria topic) for food purchased, served or sold
3.4 Number of healthy diet campaigns that also refer to sustainability, especially for children	Not applicable - There is currently no accurate way to assess this indicator			
3.5 Number of countries with food control systems adapted to increased food safety risks associated with climate change	Not applicable - There is currently no accurate way to assess this indicator			

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62 Source: FAO's *Dietary Guidelines and Sustainability* *for Food-Based Dietary Guidelines*

Indicator	Level 1	Level 2	Level 3	Level 4
Investment				
4.1 Value of Green Climate Fund initiatives that include nutrition considerations Note* Please also review the special note on finance indicators	No mentions of relevant nutrition keywords and concepts in the approved funding proposal	Mentions of relevant nutrition keywords and concepts in the approved funding proposal AND Some analysis conducted into linkages between nutrition and climate	Level 2 is met, with deeper analysis on nutritional linkages (opportunities/risks) to climate and vice versa AND Nutrition improvement is an objective within the approved funding proposal with some initial plans on measures to be taken to achieve this	Level 3 is met, with in-depth analysis on nutritional linkages to climate and vice versa AND Nutrition improvement is targeted within the approved funding proposal with clear actions outlined and distinct plans on policy/program design e.g., timeline, funding amounts, regions, baselines and targets, lead agencies etc.
4.2 Value of World Bank loans that are nutrition and climate supporting	Not applicable – see special note on finance indicators			
4.3 Value of food impact investing funds that build in climate considerations	Not applicable - There is currently no accurate way to assess this indicator			
4.4 Number of companies in World Benchmark Alliance that score well on nutrition and sustainability Under the 2021 Food and Agriculture Benchmark, there are scores on MA2 (Measurement Area) on Environment and MA3 on Nutrition - both are ranked out of a total score of 30 Scores are provided by the WBA up to 1 decimal point and have been rounded to the nearest whole number	MA2 score is between 0-9, and MA3 score is between 0-9	MA2 score is between 0-9 and MA3 score is between 10-19 OR MA2 score is between 0-9 and MA3 score is between 20-30 OR MA2 score is between 10-19 and MA3 score is between 0-9 OR MA2 score is between 20-30 and MA3 score is between 0-9	MA2 score is between 10-19 and MA3 score is between 10-19 OR MA2 score is between 10-19 and MA3 score is between 20-30 OR MA2 score is between 20-30 and MA3 score is between 10-19	MA2 score is between 20-30 and MA3 score is between 20-30
4.5 Value of ODA to climate that is linked to nutrition	Not applicable – see special note on finance indicators			

Special Note on Finance Indicators

For all quantitative reviews on the finance indicators, including: 4.1 on GCF, 4.2 on World Bank, and 4.5 on ODA, a separate process was used from the qualitative reviews. Published ODA data on climate financing (publicly available on the OECD website) was reviewed for finance-related analysis. This dataset does not include funding markers that consider nutrition. This limits analysis on funding going towards both nutrition

and climate objectives. The I-CAN baseline review team considered three methods to identify funding which considers nutrition, as follows:

1. **Using purpose codes**

Each ODA contribution is marked with a single purpose code defined by the OECD, denoting the intended sector of a contribution. 12240 is used to denote contributions which target 'Basic Nutrition' Other relevant codes for

nutrition would be 43073 'Food Safety and Quality', 12310 'NCDs Control, general' etc.

Advantage of this method:

◗ High certainty that contributions with relevant purpose codes are supporting nutrition objectives

Analysis limited by:

◗ Likely to significantly underestimate the amount of finance as contributions where nutrition is a secondary objective are not captured
◗ As each contribution is only able to be assigned one purpose code, this method is not well suited to the objective of measuring funding for both nutrition and climate

This method is not used for any of the I-CAN baseline analysis.

2. Keyword searches of available files (e.g., in project titles and descriptions)

Within the ODA funding dataset, additional fields were available which include project title and description information. By searching for climate or nutrition-relevant keywords in this funding information, we can get a clearer sense of what the funding intends to target. This helped identify: 1) projects mentioning nutrition directly and 2) projects mentioning a full set of nutrition-related keywords including on NCDs, diets, food types etc.

Advantages of method:

◗ Possible to analyse a large number of projects
◗ Includes at least some projects where nutrition may be a secondary objective

Analysis limited by:

◗ Unknown what % of total contribution is supporting nutrition objectives
◗ Not possible to verify projects manually given large dataset (e.g., 65,000+ ODA contributions)
◗ Likely to be inaccuracies where keywords are picked

up but are not relevant or projects are missed where keywords were not used in the title or description

This method is used for indicator 4.5 on ODA funding to climate that is linked to nutrition.

3. Analysis of project information

For funding from specific donors (e.g. GCF and World Bank), additional information on each project is available on their websites. Given the smaller number of projects (as compared to total ODA), it is feasible to analyse individual projects for explicit references to nutrition in line with other qualitative analysis.

Advantages of method

◗ More accurate than methods (1) and (2)
◗ Includes projects with nutrition as a secondary objective and allows levels of classification (for GCF)

Analysis limited by:

◗ Differences in project dates and funding totals makes comparison to published ODA challenging
◗ Not possible to scale-up method to analyse larger numbers of grants and loans

This method is used for indicators 4.1 on GCF funding and 4.2 on World Bank funding. For the GCF, there were 19 projects in 2022 and 32 projects in 2021, accounting for a total of 51 projects used in the baseline analysis. Each project has an approved funding proposal, which was analysed in accordance to the guidelines set out in the coding table above. For the World Bank, the World Bank Group has a dedicated Central Coding Team which estimates the % of funding, out of the total project commitment amount, going towards various themes. Climate is listed as a sub-theme under 'Environment and Natural Resource Management', and Nutrition and Food Security is listed as a sub-theme under 'Human Development and Gender'. The latter can be disaggregated into the % of funding going towards only nutrition (separate from food security).

However, whilst useful to know how the World Bank classifies % of funding for each theme, granular-level data has not been analysed in this report due to the

reasons listed under the main section discussing indicator 4.2.

Special Note on OECD-DAC Marker Codes

The OECD through the DAC has developed a series of markers (OECD-DAC markers) for tracking policy objectives of development cooperation activities. Markers provide data regarding policy areas covered by international agreements and are a key transparency tool for ODA and broader development finance in particular. These policy markers include gender, nutrition, climate change and others[63].

FAO currently utilises nine OECD-DAC policy markers to characterise its entire portfolio, including the nutrition marker, the climate change mitigation and climate change adaptation markers. With the nutrition marker, projects are labeled on a three-scoring coding system from a scale of 0 (nutrition not targeted), 1 (nutrition is a significant objective), to 2 (nutrition is the principal objective). Similarly, the two climate markers are employed to assess the extent to which climate considerations are integrated into a project's design and implementation. FAO utilises the policy markers to fulfill its corporate reporting obligation to the international aid transparency initiative (IATI) and to identify the coherence and interlinkages between existing FAO projects. An assessment was conducted using multiple policy makers simultaneously to explore the nexuses between nutrition, biodiversity and climate change from 2019-2020[64].

Considering the advantages of the policy marker, OECD-DAC policy markers and purpose codes should take precedence in future editions of the I-CAN baseline analysis whenever such data is accessible.

Most notably, this would be relevant to indicator 4.5 Value of ODA to climate that is linked to nutrition. Use of the OECD purpose codes as the sole determinant of climate-nutrition integration is not used for this analysis. This is because we have decided to present the results as all ODA financing to climate which considers nutrition, rather than only those tagged with a nutrition purpose code. From 2019-2021, 499 commitments were tagged with a nutrition purpose code. Out of these, 302 commitments did not include the keyword 'nutrition' in the project title or description. A further 1,571 projects contained the keyword 'nutrition' in the project title or description but were not tagged with a nutrition purpose code. This is most likely because the primary objective of these 1,571 projects (which is what the OECD purpose code intends to measure) is not focused on nutrition. For a more comprehensive presentation of what is considered as ODA financing to climate that is linked to nutrition, we have decided to combine the total number of both the projects tagged with a nutrition purpose code and the projects which included the keyword 'nutrition' in the project title or description but are not tagged with a nutrition purpose code. This brings the grand total to 2,070 projects which we consider as 'linked to nutrition'.

The OECD-DAC marker codes should not be confused with the OECD purpose codes, as they are different. Marker codes provide detail on the degree in which a particular theme is a specific objective or focus within a project or program. Purpose codes classify the project or program under the primary objective. Both types of codes are important for accurately tracking and reporting on development assistance activities.

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63 OECD, 2020

64 FAO, 2021

Table 7: 'Sources of All Datasets Used for the I-CAN Baseline Analysis

Indicator	Source of Documents / Data
Pillar 1: Implementation, Action, and Support	
1.1 Number of Nationally Determined Contributions (NDCs) that include nutrition-related actions	The NDCs used for this analysis were sourced from the official UNFCCC NDC Registry, versions as of June 2023.
1.2 Number of climate National Adaptation Plans (NAPs) that include nutrition-related actions	The NAPs used for this analysis were sourced from the UNFCCC Submitted NAPs database, versions as of June 2023.
1.3 Number of climate-informed nutrition interventions and programmes	N/A - Not analysed
1.4 Number of National Nutrition Plans (NNPs) that refer to climate	The NNPs used for this analysis were generously contributed by SUN based on countries where they have an active presence. Versions as of August 2023. Not available for public access.
1.5 Number of significant multilateral partnerships in the climate-nutrition area	N/A - Not analysed
Pillar 2: Capacity Building, Data, and Knowledge Transfer	
2.1 Value of public R&D funding programmes that bridges climate and nutrition	N/A - Not analysed
2.2a Number of countries that have conducted a climate change and health vulnerability assessment (V&A) which included nutrition	Insights for this analysis were drawn from the 2021 WHO Health and Climate Change Survey Report.
2.2b Number of data and knowledge portals that bring climate and nutrition together	All 26 data and knowledge portals assessed are listed in the main section under indicator 2.2b, with hyperlinks to each source used. Versions as of June 2023.
2.3 Number of references to nutrition science articles in IPCC reports	The two reports used for this analysis are the AR6 Synthesis Report: Climate Change 2023 and the Special Report on Climate Change and Land 2019, both from the IPCC.
2.4 Global Nutrition Report tracks nutrition-promoting climate adaptation actions	The data used for this analysis was sourced from the GNR's NAF Commitment Tracker, versions as of April 2023.
Pillar 3: Policy and Strategy	
3.1 Number of countries which are promoting climate-smart nutritious foods such as neglected underutilised species (NUS) and fortified/biofortified crops and staple foods	N/A - Not analysed
3.2 Number of country food-based dietary guidelines that include climate considerations	The FBDGs used for this analysis were sourced from FAO's FBDG database, versions as of July 2023.
3.3 Number of countries that factor climate into food procurement decisions for food in public settings (e.g., school meals and school feeding, health and care facilities), as well as safety nets and emergency programmes	The public food procurement nutrition-related policies used for this analysis were sourced from WHO's GINA database, versions as of June 2023.
3.4 Number of healthy diet campaigns that also refer to sustainability, especially for children	N/A - Not analysed
3.5 Number of countries w/ food control systems adapted to increased food safety risks associated w/ climate change	N/A - Not analysed
Pillar 4: Investments	
4.1 Value of Green Climate Fund initiatives that include nutrition considerations	The GCF funding proposals used for this analysis were sourced from GCF's project portfolio, versions as of August 2023.
4.2 Value of World Bank loans that are nutrition and climate supporting	The World Bank projects information used for this analysis were sourced from the World Bank's project and operations database, versions as of August 2023.
4.3 Value of food impact investing funds that build in climate considerations	N/A - Not analysed
4.4 Number of companies in World Benchmark Alliance that score well on nutrition and sustainability	The WBA scores used for this analysis were sourced from the WBA's 2021 Food and Agriculture Benchmark, The WBA has published their 2023 Food and Agriculture Benchmark in October 2023, and the 2021 Benchmark is not longer available for public access.
4.5 Value of ODA to climate that is linked to nutrition	The ODA climate financing data used for this analysis were sourced from the OECD official website, versions as of June 2023.

Three Categories of Indicators

Each indicator falls under one of three categories depending on their objectives.

Category 1 – Indicators measuring climate considerations within a nutrition context

Category 2 – Indicators measuring nutrition considerations within a climate context

Category 3 – Indicators measuring the degree which climate and nutrition are linked

The original methodology was designed with much more focus surrounding these three categories, but as we progressed with the analysis, the categories became less relevant in favor of the four classification levels. The review team came to the understanding that these three categories were too broad to capture the nuances related to each specific indicator, and that the classification levels provided a better picture on the actual integration between climate and nutrition. As such, there is no particular significance placed on these three categories within this version of the I-CAN baseline analysis.

Still, it is worth noting here what the three categories are given that they were used and disseminated in early versions of the I-CAN baseline materials.

These three categories could potentially be used to inform future developments on the I-CAN baseline or overall goals.

Table 8: Which of the Three Categories (listed above) Each Indicator Falls Under

Indicator	CATEGORY 1 Climate considerations within a nutrition context	CATEGORY 2 Nutrition considerations within a climate context	CATEGORY 3 The degree which climate and nutrition are linked
Implementation, Action, and Support			
1.1 Number of Nationally Determined Contributions (NDCs) that include nutrition-related actions		✓	
1.2 Number of climate National Adaptation Plans (NAPs) that include nutrition-related actions		✓	
1.3 Number of climate-informed nutrition interventions and programmes	✓		
1.4 Number of National Nutrition Plans (NNPs) that refer to climate	✓		
1.5 Number of significant multilateral partnerships in the climate-nutrition area			✓
Capacity Building, Data, and Knowledge Transfer			
2.1 Value of public R&D funding programmes that bridges climate and nutrition			✓
2.2a Number of countries that have conducted a climate change and health vulnerability assessment (V&A) which included nutrition		✓	
2.2b Number of data and knowledge portals that bring climate and nutrition together			✓
2.3 Number of references to nutrition science articles in IPCC reports		✓	
2.4 Global Nutrition Report tracks nutrition-promoting climate adaptation actions	✓		
Policy and Strategy			
3.1 Number of countries which are promoting climate-smart nutritious foods such as neglected underutilised species (NUS) and fortified/biofortified crops and staple foods			✓
3.2 Number of country food-based dietary guidelines that include climate considerations	✓		
3.3 Number of countries that factor climate into food procurement decisions for food in public settings (e.g., school meals and school feeding, health and care facilities), as well as safety nets and emergency programmes	✓		
3.4 Number of healthy diet campaigns that also refer to sustainability, especially for children	✓		
3.5 Number of countries w/ food control systems adapted to increased food safety risks associated w/ climate change	✓		
Investments			
4.1 Value of Green Climate Fund initiatives that include nutrition considerations		✓	
4.2 Value of World Bank loans that are nutrition and climate supporting			✓
4.3 Value of food impact investing funds that build in climate considerations	✓		
4.4 Number of companies in World Benchmark Alliance that score well on nutrition and sustainability			✓
4.5 Value of ODA to climate that is linked to nutrition		✓	
Total Indicators in each Category:	**8**	**6**	**6**

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Contact: Rue Varembé 7
1202 Geneva, Switzerland
Mailing address: PO box 55, 1211 Genève 20
T: +41 22 749 18 50