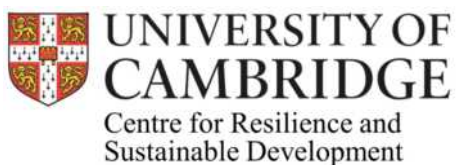


**Concept Note:**

**Increasing the local production and consumption of healthy food to reduce diet-related non-communicable diseases (NCDs) in Dominica**

**Partnership between EAT and the University of Cambridge  
Funded by Rockefeller Foundation**

January 2023



## **Key Question**

**How can Dominica increase the local production and consumption of healthy food to reduce diet-related non-communicable diseases (NCDs), in the working age population (14-65 age) by 2030?**

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Ministry of Agriculture, Fisheries, Blue and Green Economy

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## Executive Summary

Through its National Resilience Policy 2030, the Government of the Commonwealth of Dominica (hereafter 'the GOCD') is pursuing its goal of transforming Dominica into the world's first climate resilient country. This Cambridge Policy Boot Camp brings together two aspects of the National Resilience Policy - improving agricultural modernisation and resilience and the need for Dominicans to adopt healthier lifestyles in order to reduce the growing incidence of non-communicable diseases (NCDs) (Box 1).

The GOCD has put in place a range of agricultural, health/preventative health policies and education initiatives. For example the GOCD has formally constituted a National Food and Nutrition Council, and recently announced a Commissioner for NCDs. Since 2015, Dominica, has implemented a 10% tax on sugary foods/drinks and over the recent period undertaken extensive modernisation and resilience investments in the agricultural sector. The key issue facing the GOCD is limited 'whole of system' thinking - linkages/coordination - to integrate these different areas of policy making and government activities. A further issue is the limited use of the role of culture - working culture, labour law, mass and social media, island lifestyle habits, cultural food and exercise preferences - in promoting healthy eating. There is also an inadequate recognition at the policy level for interlinking the differing needs, barriers and opportunities between gender, working age and communities in sustainably accessing healthy lifestyles.

Through its collaboration in regional and international organisations - including CARICOM, PAHO/WHO, FAO, World Bank - Dominica has access to extensive sources of technical and financial support to link its NCD prevention and agriculture agenda's together. In addition, there is extensive research, resources and case studies of middle income countries whose approaches to NCD prevention can provide sources of inspiration for Dominica. For example, the WHO has identified a set of costed, cost effective measures that low and middle income countries could introduce to achieve a 15% reduction in NCD related premature mortality by 2030 in line with SDG Goal 3.4. In summary these are: reduce tobacco use, reduce harmful use of alcohol, promote healthy diet, promote physical activity.

Currently, there are a number of opportunities within Dominica that could be leveraged to link agriculture reform with health eating and NCD prevention and implement the type of measures proposed by the WHO - or other approaches. These include the recent appointment of a national coordinator across government ministries and agencies to address NCDs, and the reintroduction of primary health care nurse training. The forthcoming Small Island Developing States Ministerial Conference on NCDs and mental health organised by WHO in Barbados in June 2023 is another opportunity for Dominica to announce initiatives to link these two agenda's.

The policy concepts developed through the Cambridge Policy Boot Camp (CPBC) can provide a starting point for using these opportunities to make real progress on NCD prevention in Dominica.

## Useful Statistics

Commonwealth of Dominica, commonly referred to as Dominica, is an upper-middle-income Small Island Developing State (SIDS) in the Eastern Caribbean Region, with an estimated population of 72,413 and a gross domestic product of US\$554.181 million (World Bank, 2023).

Dominica has a relatively high Human Development Index Score of 0.736 - out of a maximum of 1 - and GDP/capita is \$7,653USD (World Bank, 2023). Approximately 72% of Dominicans live in urban areas. Agriculture remains the economic base of the country employing around 40% of the

workforce (Climate Resilience Executing Agency of Dominica, 2020). The Tourism Sector - particularly 'ecotourism' focussed on 'wellness and health' - is a major export. Debt levels are relatively high: the ratio of total debt to GDP is 82.7% (Climate Resilience Executing Agency of Dominica, 2020).

Citizens of Dominica have a high literacy rate of 92% and the longest life expectancy of the Caribbean. However, Dominica is also experiencing a population decline - partly due to an ageing population and low fertility but also because the population is considered 'fragile' - i.e. there is a tendency for outward migration in response to disasters such as cyclones (Ministry of Planning, Economic Development, Climate Resilience, Sustainable Development, and Renewal Energy, 2022). Current outbound migration is estimated at 5.31 people per 1000 people (CIA, 2022). There is a significant and well organised Dominica Diaspora community around the world that maintains links - and financial support - with communities on the Island.<sup>1</sup>

Dominica still retains a distinct indigenous community - the Kalinago People - in the eastern part of the Island. Geographically, the country has a rugged and mountainous interior, vulnerable to geological activity. The Dominican identity is associated with its natural forests, volcanic soils, rivers and marine environment. However, Dominica is also highly vulnerable to the effects of climate change. Key impacts include increased frequency and intensity of weather events, damage to infrastructure, agricultural crops and forest cover and loss of life and livelihoods and displacement of communities (Department of Finance, 2020).

## Background

### Dominica as a 'climate resilient country'

The Government of the Commonwealth of Dominica (hereafter 'the GOCD') is pursuing its goal of transforming Dominica into the world's first climate resilient country. This concept of 'resilience' is defined in the National Resilience Development Strategy (NRDS) 2030 as a combination of economic diversification, sustained sustainable and inclusive growth, employment creation and revenue generation, social development, social protection and poverty reduction, environmental management, and cultural preservation (Department of Finance, 2020).

The research question brings together two aspects of the National Resilience Policy 2030: development of agricultural resilience and objectives around promoting a healthier population including through reducing the prevalence of non-communicable diseases (NCDs). Specifically, this research will explore how the GOCD can support a healthier population through reducing the prevalence of diet related non-communicable diseases (Box 1) by encouraging the consumption of locally grown healthy food.

#### Box 1

##### What is a Non-communicable Disease?

The Caribbean Public Health Agency defined non-communicable diseases (NCDs) or chronic diseases as a group of conditions that are not passed from person to person and are mainly of a long duration and progress slowly. NCDs include cardiovascular diseases, diabetes, cancers, chronic lower respiratory diseases, sickle cell disease, mental illness and injuries. They are mainly a result of a combination of genetic, environmental, behavioural and metabolic risk factors, such as, physical inactivity, unhealthy diet, harmful use of alcohol, air pollution, stress and overweight/obesity. The way people live, work and play are contributing to this public health problem (CARPHA, 2022).

##### What is the working age population?

Under Dominica Law, the legal working age starts at 14 years.<sup>2</sup> Citizens become eligible for the pension at

<sup>1</sup> See for example The Dominica Overseas National Association in the UK <https://www.dona.org.uk/>

<sup>2</sup> see: <http://www.dominica.gov.dm/laws/chapters/chap90-05.pdf>

65 years of age<sup>3</sup>.

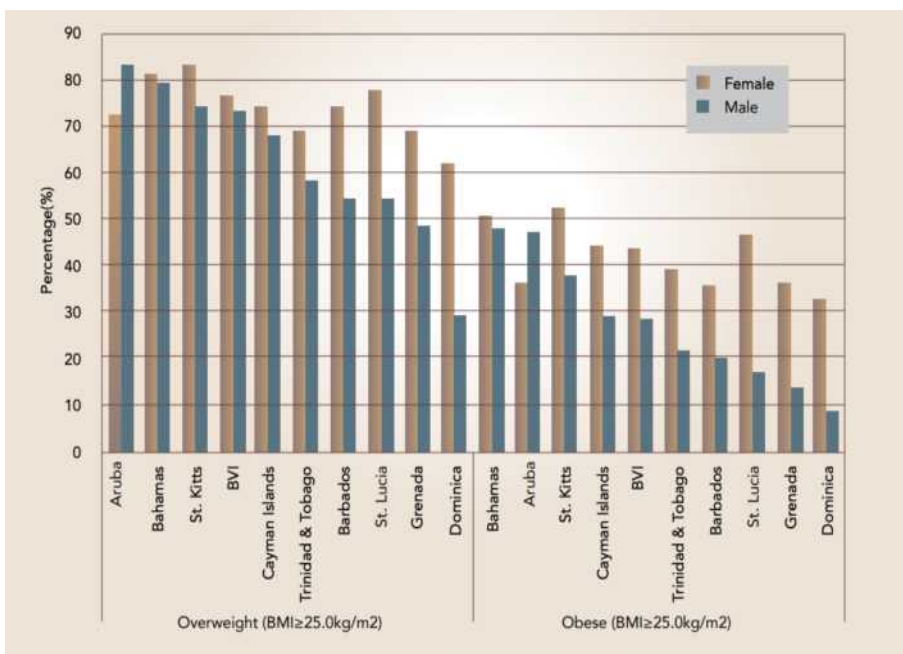
## Dominica Health Transition

Since the 1980s, Dominica, as a middle income country, like the rest of the Caribbean region, has been undergoing a nutrition transition. This is reflected in a shift in diets away from indigenous staples (cereals and starchy roots, fruits and tubers, locally grown fruits, vegetables, legumes) to diets that are more processed with excessive amounts of added sugars, fats/oils and sodium, and more alcohol. This shift is partially due to the demographic transition - that is the shift from rural to urban living - as well as the globalisation of western lifestyles. In Dominica, this nutritional transition is reflected in the relatively low rates of undernutrition throughout the population and an increasing prevalence of overweight and obesity, a main risk factor in non-communicable diseases (NCD), such as diabetes, hypertension, stroke, heart diseases and some forms of cancers (CARPHA, 2022).

The most recent statistics available from Pan American Health Organisation (PAHO) show that the Dominican population is experiencing relatively low levels of food malnourishment in 2019-21 - 6.9% - which is low, but nevertheless an increase from the 5.4% which was recorded in 2003/4 (last time data was available). However, about 20% of women are suffering from anaemia. Obesity rates are also rapidly growing with approximately 27% of the population (FAO, 2022a) considered overweight or obese. There is some evidence that women experience higher rates of overweight and obesity (Figure 1) and undertake less physical exercise than men (Figure 2).

PAHO (2018, 2020) argues that NCDs are now amongst the leading causes of death across the Caribbean region. In this context, the available data from the Global Nutrition Report places Dominica in a relatively poor health status relative to its neighbours (Global Nutrition Report, 2022):

**Figure 1: Prevalence of overweight and obesity in selected Caribbean SIDS**



Source: PAHO (2018)

“Dominica has shown limited progress towards achieving the diet-related non-communicable disease (NCD) targets.

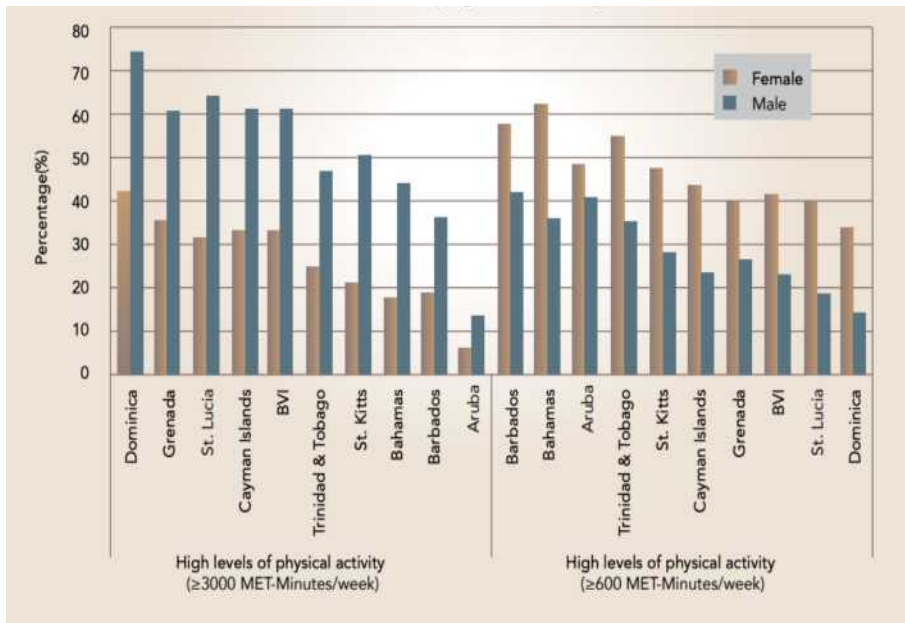
The country has shown no progress towards achieving the [global] target for obesity, with an estimated 38.8% of adult (aged 18 years and over) women and 22.9% of adult men living with obesity. Dominica's obesity prevalence is higher than the regional average of 30.7% for women and 22.8% for men. At the same time, diabetes is estimated to affect 15.7% of adult women and 9.7% of adult men.”<sup>4</sup>

<sup>3</sup> see: <https://dss.dm/coverage/pensioners/>

<sup>4</sup> For example making progress towards SDG 3.4 by 2030 reduce by one-third pre-mature mortality from non-communicable diseases (NCDs) through prevention and treatment,

Instability and vulnerability caused by the impact of climate change and other natural and economic shocks undermine efforts

**Figure 2: Level of physical activity in selected Caribbean SIDS**



to achieve food and nutrition security in the Caribbean. This may be due to, for example, extensive damage to property and lives in the agricultural and food sector disrupting production, or as a result of storm damage to transport systems. Global economic crisis has, and can, resulted in an increase in food insecurity due to reduced levels of remittances and healthy food being priced beyond the reach of the poor (FAO, 2022a).

Source: PAHO (2018)

## Dominica Agricultural Transition

Through the development of the *National Resilience Development Strategy*, the GOCD has recognised that local agriculture needs to play an important part in addressing the growing prevalence of NCDs through the provision of locally grown healthy foods (Department of Finance, 2020). Agriculture and fisheries play an important role in the economy, contributing around 10-13% of GDP (Government of Dominica, 2021a). Local food production remains a vital food source for the Islanders, as well as securing livelihoods for around 30% of the population living in rural areas.

The agricultural sector is dominated by crop production for both domestic and export markets - including banana, tree crops and root crops, citrus, coconut, fresh vegetables and fruits, cocoa and coffee. The producer base is dominated by an increasing number of small, resource constrained farmers, involved mainly in producing food crops on complex multiple cropping systems. The livestock sub-sector remains relatively under-developed, but is an increasingly important prospect for agricultural diversification. It comprises mainly of small livestock, reared on relatively small farms, dominated by poultry (layers and broilers) and pig production, with cattle (beef and dairy), goats and sheep reared on a smaller scale. Ninety-five percent of animal products are sold for domestic consumption. Fisheries in Dominica is largely artisanal and small-scale capture (marine) fishery, mostly for domestic consumption. There is only one major commercial aquaculture farmer operating seven ponds producing freshwater prawns. In the wake of Hurricane Maria in 2017, fish from the domestic sector was identified as an important food source and therefore of food resilience during the period of recovery in the agricultural sector (Turner et al, 2020). The main challenges that have historically affected the agriculture sector in Dominica have been examined in

detail through multiple studies. For example, the the National Agricultural Policy summarises the biophysical and systemic/ institutional challenges facing the sector as including (Government of the Commonwealth of Dominica 2021b):

- poor agricultural practices which have compromised ecosystem/environmental resilience and exacerbated vulnerabilities to natural hazards;
- high production cost structure, associated with reliance on costly imported inputs, farm labour availability and quality problems and uncontrolled theft of agricultural produce;
- general un-competitiveness of agricultural products in export markets, both from a price and quality perspective, the latter reflecting difficulties in compliance with international standards;
- institutional weaknesses, including data and information systems for evidence-based decision making and short-term successes in mitigating risk factors inherent to agriculture;

## Imported Food and Food Legislation

Dominica is a net importer of food and its imports are dominated by energy dense foods high in fat, oil, sugar and salt. These imported energy dense foods have gradually replaced traditional locally grown roots, tubers, fruits and vegetables in local diets.

FAO estimates that these imported foodstuffs comprise about 55% of the food consumed in the country, with the food import bill increasing from US\$ 25 million in 1997 to US\$ 35 million in 2018. At the same time, agricultural exports had fallen sharply from about US\$ 28 million in 1997 to US\$ 7 million in 2018. Despite the huge potential for fisheries, the country is a net importer of fish, with canned fish (sardines and mackerel), dried salted cod and cured herring being the main imported products.

Food legislation and regulation – as it applies to nutrition in Dominica is relatively limited. A legislated Food and Nutrition Council has operated since 1981 with some regulatory powers (see below). Since 2015, Dominica has sought to address the high level of sugar consumption through 10% excise tax on sugary drinks sold in the country (Global Food Research Program, 2022). There is some evidence that sugar taxes decrease sugar consumption (e.g. Bercholz et al, 2022) - although it is unclear whether this has been successful in reducing sugar consumption in Dominica.

Nutrition labelling regulation is in place but is only required for foods that make a health claim and are voluntary for all other foods.<sup>5</sup>

## The Economic Impact of Non-Communicable Diseases

The health impacts of NCDs in the Caribbean are well understood (The Health Caribbean Coalition, 2021). However, addressing NCDs is also important for economic development and resilience. The significant economic and financial burden NCDs placed on communities both at the level of the individual and their households, on health budgets and on labour productivity makes it an important component of achieving economic resilience for Dominica.

For individuals, living with NCDs has been shown to reduce income earning ability and to significantly increase health costs and lifestyle opportunities. Although data is scarce, evidence indicates that individuals and households living with NCDs can spend up a third of total household expenditure on out of pocket health expenses - drastically reducing their ability to spend on quality of life opportunities.

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<sup>5</sup> See: <https://extranet.who.int/nutrition/gina/en/node/25355>



People with NCDs have a higher utilisation of health care services (World Bank, 2013). For health systems, medical expenditure to manage NCDs is more costly than managing other diseases. For example, the annual cost of treating a patient with diabetes in Dominica was estimated to be around \$1334 USD per year (International Diabetes Federation, 2021)<sup>6</sup>, which is more than double the amount of total health expenditure of USD 427 per capita and five times greater than the public health budget per capita of \$266 USD per capita per year (WHO, 2023).

At a macroeconomic level, high prevalence of NCD can reduce the workforce through reducing available working hours (e.g. due to absenteeism related to medical care) and reducing productivity - leading to overall reduction in economic growth, although the evidence is sparse and mixed. For example a study in Fiji found a small but measurable decrease in GDP for every 1% increase in NCDs in the population (Chand et al 2020). By contrast Bloom et al (2018) found that the impact of NCDs and mental health conditions on GDP between 2015-2030 to be around \$81.96bn USD and \$18.45billion USD for Jamaica.

In Dominica, the percentage of the working age population is estimated to be 41% in 2021 - that is, less than half the population. The future economic welfare of Dominica therefore requires active intervention to minimise the negative impact of NCDs on labour productivity and public health expenditure.

## The Objectives of Cambridge Policy Boot Camp

The GOCD has broadly recognised the relationship between the agricultural sector, local food production and healthy diets but has yet to consolidate this connection into funded, operationalizable, policy concepts and programs. In this Cambridge Policy Boot Camp (CPBC) we will explore potential policy concepts that link these two areas of public policy using system based tools to answer the question:

***How can Dominica increase the local production and consumption of healthy food to reduce diet-related non-communicable diseases (NCDs), in the working age population, by 2030?***

Here, **diet-related non-communicable diseases** are defined, in the first instance, as the primary health related diseases facing the Dominican community - obesity, diabetes and hypertension (Box 1). The working age population is defined as individuals between the ages of 15 and 65 (Box 1).

This workshop has been co-designed and co-convened as a partnership between the Ministry of Agriculture, Fisheries, Blue and Green Economy, the Climate Resilience Execution Agency for Dominica (CREAD) and the University of Cambridge. Intended outcomes from the workshop is the articulation of policy concepts for operationalising the link between objectives for nutrition interventions for NCDs, and the agricultural sector. These concepts could include, for example, policies to reduce reliance on highly processed imported foods, increase accessibility and affordability of healthy locally grown food and/or modernising the agricultural sector to improve access to markets for locally grown fruit and vegetables.

This Concept Note sets out a non-exhaustive summary of relevant background information that may be useful to CPBC participants.

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<sup>6</sup> The calculations used for this figure means that this is likely to be an overestimate - but is nevertheless illustrative of the costs involved in treating an NCD patient.

## Challenges and Responses

Addressing the challenges facing Dominica's agricultural sector, while pursuing the objective of expanding the production of local healthy food, forms the basis of the Report *Agricultural and Food Systems Transformation Roadmap for Dominica, released in 2021* (Government of the Commonwealth of Dominica 2021a). With specific reference to addressing Dominica's SIDS status and the high vulnerability to geological activity, and the impacts of climate change, this Report identified a range of institutional and policy constraints to the sector, including:

- Weak adaptive management to hazards and climate impacts - e.g. insufficient data, lack of affordable insurance, inadequate access to climate smart technologies in agriculture.
- Inadequate investment in agricultural infrastructure - e.g. renewable energy, roads, irrigation, digital innovation.
- Inadequate development and organisation of value chains and value added activities.
- Weak policy institutions - reforms needed in land tenure, R&D activity, finance and insurance. Poor alignment between agriculture and other adjacent areas such as environmental policy.
- Lack of collective organisation by farmers and fishers.

Through its linkages and programs with CARICOM, the WHO and the FAO, the GOCD has access to a broad range of resources, technical assistance and some financial support to begin addressing these - and many other challenges in the food sector - and has begun to do so (e.g. FAO 2020a, FAO 2020b, FAO 2022b, FAO 2022c).

These international and regional programs, however, do not carry the ultimate responsibility for improving the health and diets of Dominicans - this lies with the GOCD itself. The 'missing piece' is a 'whole of government' approach that draws in regional and international resources to align with, and provide resources for, the existing range of domestic policies - as well as filling in gaps in national policy approaches.

Against this background, and in the context of pursuing the twin goals of reducing NCDs and increasing local healthy food production, this research reinterprets the key challenges facing the GOCD as:

1. **The need to institutionalise the resources and technical training made by regional and international organisations in Dominica's food systems.** Significant financial and technical resources have been provided by regional and international organisations on health and agricultural programs (see below). The GOCD now needs to institutionalise the learnings from these projects and incorporate them into Dominican laws, regulations, systems and funding pathways in order to secure outcomes and scale their impacts as required.
2. **Identifying additional resources to implement existing programs.** National policies for health and agricultural development are largely unfunded. For example, the National Agricultural Policy does not have a dedicated financial resources identified - although it is recognised that both government budgetary support and leveraged resources from civil society, the private sector and international organisations will be required.
3. **Lack of adequate legislative framework and regulation to manage the nutrient context of food.** Some progress has been made in regulating sugar, but similar regulations have

not been extended to other harmful substances. Nutrient labelling is limited only to when a product makes a health claim. Such regulation could be applied to imported and domestically produced food - as set out in the *CAPHRA 6 Point Plan* (CARICOM, 2017). Related to this, the mandate of the Food and Nutrition Council is limited to food security issues and does not encompass food nutrition.

- 4. Lack of coherent policy and regulatory framework to develop integrated approaches to nutrition across government ministries - particularly at the operational level.** Dominica has clearly articulated the link between agriculture and healthy food in its National Policy documents – but mechanisms for implementing this link – and leveraging it to address the prevalence of NCDs - has yet to be developed at a policy and operational level in a way that coordinates different parts of the government . For example, agricultural industry investment and programs need to focus on activities that complete the supply chain from grower to consumer - e.g. value added activities, transport and food storage. Similarly there is no overall strategy for developing targets or objectives around the importation and sale of highly processed foods.
- 5. Increase public healthy diet promotion and education.** There are some diet promotion activities primarily targeted at school children and their parents. Further work could be pursued in promoting healthy, local diets to the broader population – which would generate more immediate health benefits. In addition, public health campaigns should also incorporate the need for physical activity - particularly targeted at women.
- 6. Ensuring the food becomes and remains affordable and accessible.** The FAO (2022a) calculated that the daily cost of a healthy diet in Caribbean countries was around USD 4.23 per person per day. This compares to the average minimum hourly wage rate of USD 2.31 - USD 2.96/hr (6.25-8 XCD/hr). Assuming that 1.5 working age (age between 15-65) adults per household of 4 individuals engaged in waged employment, this amounts to about 48%-60% of minimum wage spent on food.<sup>7</sup> The FAO (2022a) considers a healthy diet unaffordable when its costs exceed 52% of income. Significant work, therefore, is required to ensure that healthy food becomes, and remains affordable in Dominica.
- 7. Old policies regulating labour laws and minimum wage** - Minimum wages in Dominica have recently been increased - the first time since 2007.<sup>8</sup> However, other labour and working conditions, as enshrined in Dominica’s Labour Contracts Act have not been updated since 1990<sup>9</sup>. In this legislation, standard working hours are 40 hours per week - or no more than 8 hours per day and with at least one full day off per week. Legislated entitlement to vacation is limited to 2-3 weeks per year.<sup>10</sup> Currently, the evidence is inconclusive as to the link between long working hours, shift work and NCDs (e.g. Rivera et al, 2020) although a recent meta-analysis of 72 studies found a significant association between job strain, long working hours and heart disease (Niedhammer et al, 2021).
- 8. Recognising that preventing NCDs is a cultural issue, as much as a technical issue for agriculture, education and health ministries.** Tobacco use, physical inactivity, harmful use of alcohol and unhealthy diets are the key risk factors in developing NCDs (WHO, 2018) - all of which are heavily influenced by factors such as media/social media, advertising/ marketing, traditional culture, education, social values and attitudes towards gender equality. In addition, issues such as urban design/infrastructure, women’s safety in

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<sup>7</sup> Wage rates have been taken from here:

<https://www.ilo.org/dyn/natlex/docs/ELECTRONIC/113806/142878/F-144593602/DMA113806.pdf> This calculation assumes an exchange rate of 1 USD = 2.70014 XCD. Calculated from the Xe.com website 9 January, 2023. <https://www.xe.com/currencyconverter/convert/?Amount=8&From=XCD&To=USD>

<sup>8</sup> see <https://news.gov.dm/news/5289-minimum-wage-increase-for-dominicans>

<sup>9</sup> <https://www.ilo.org/dyn/natlex/docs/ELECTRONIC/83840/92863/F1026881250/DMA83840.pdf>

<sup>10</sup> see <http://www.dominica.gov.dm/laws/chapters/chap89-04.pdf>

the community - and working hours/culture discussed above - can also play a role.

Initial research for this project has demonstrated that Dominica has already started addressing these challenges. Existing responses from the GOCD and the regional and international agencies to the health and agriculture in Dominica are briefly described below.

## The Government of the Commonwealth of Dominica Response

The GOCD has put in place a range of agricultural, health/preventative health policies and education initiatives in response to its objectives for agricultural development and prevention of NCDs. The overarching national objectives for health and agriculture are set out in the National Resilience Development Strategy. Specifically it states (Department of Finance, 2020, p49-50):

“By 2030, the Government aims to make the country food-secure. To achieve the thrust to provide a sustainable supply of food for the country, efforts will be undertaken to develop a highly productive agricultural sector that is modernised and regionally and internationally competitive, generates sustainable jobs and incomes for producers, and guarantees production despite weather conditions..... To address the challenges and to revitalize the sector over the medium term Government will increase investments in the sector and adopt strategies aimed at .... [inter alia]:

- increasing agricultural production, distribution and access with a resultant reduction in the food import bill
- improving accessibility to farms and markets;
- encouraging the use of modern technology and innovations in farming
- encouraging higher levels of productivity of locally produced goods
- encouraging the consumption of healthy, locally produced food” (Source: National Resilience Development Strategy. P. 49-50)

These overarching goals are elaborated in the National Agricultural Policy - discussed below - the Dominica Climate Resilience and Recovery Plan 2020-2030 (Climate Resilience Executing Agency of Dominica, 2020) and the Agriculture and Food Systems Transformation Roadmap for Dominica (Government of the Commonwealth of Dominica, 2021a). Overall, it considers health and nutrition as a whole of government topic that involves the Ministries responsible for agriculture, education and health as well as specific agencies such as the Climate Resilience Executing Agency of Dominica (Food and Nutrition Council 2014). This approach has, for example, underpinned the recent announcement that the Government announced that it will appoint a coordinator across government to address non-communicable diseases such as obesity (Dominica, News Online, 2022).

## Education Related Initiatives

**School Nutrition Policy** was jointly developed by the Ministry of Health, Wellness and New Health Investment and the Ministry of Education, Human Resource Planning, Vocational Training and National Excellence initially in 2012 and revised in 2016. The overall goal is to provide a school environment that support learning and the development of healthy lifelong eating and activity behaviours through incorporation of nutrition and physical activity into the curriculum, improving food service environment in schools and provision of nutritious meals.

**Development of School Feeding Program/Policy** is jointly funded by the GOCD, the Swiss Development Agency and Lamb’s Feast as a social safety net for children from poorer families. The objective is to reduce hunger, ensure that children receive one nutritious meal per day and improve

school attendance/retention. Utilisation has increased over time and the program is considered successful, however problems remain with lack of standards, access, training and variety of meals served.<sup>11</sup>

## Health Related Initiatives.

Key cross GOCD health policies and initiatives have been identified as follows.

1. **National Food and Nutrition Council** is a multisector body with a renewed mandate to work across Ministries on the issue of food and nutrition security. Previously, the Council has worked with the FAO on the development of dietary guidelines for Dominica.
2. **Development of Dominica Specific Food/Nutrition Guidelines - these guidelines were developed in 2007.**<sup>12</sup> These have been promoted in schools and health centres - but these efforts need to be expanded to reach a broader audience.
3. **Food and Nutrition Security Policy** was released by the Dominica Food and Nutrition Council in 2014 to set out a whole of GOCD concrete strategies to address food availability, food access and stability and nutritional adequacy. This Policy has largely remained unimplemented due to a lack of funding and other resources - such as technical expertise.
4. **Introduction of a 10% tax on drinks and food with high sugar content.** This tax was introduced in 2015 to address sugar consumption. No evaluation could be found for Dominica, however a study of 31 low and middle income countries found that increases in tariffs for 'unhealthy foods', including sugar, was associated with a reduction in obesity rates (Abay et al, 2022).
5. **Establishment of a Health Promotion Resource Centre** was established as an independent agency to promote relevant information on health and healthy lifestyles to the population. The Centre is run by the Chief Medical Officer, a Health Promotion Coordinator, two Health Educators, a Nutritionist, a Communication Officer, and supporting technical staff.<sup>13</sup>
6. **"Healthy People Beautiful Communities" Program** - is a national public health program to coordinate and deliver healthy lifestyle programs to local communities and to facilitate cooperation between GOCD agencies, civil society and the private sector in promoting health.<sup>14</sup> The Ministry of Health is the lead agency, but the program coordinates programs with the Sports Division, Youth Division, Community Development/Social Services, Adult Education, Agricultural Division, Environmental Coordinating Unit, Forestry Division, Office of disaster management, National securities and the Ministry of Education.

## Agricultural Related Initiatives

Agriculture is a key pillar in the National Resilience Development Strategy (Department of Finance, 2020). The GOCD's vision for agriculture elaborated in the related **National Agricultural Policy (NAP)** (Government of Dominica, 2021) which provides the national roadmap for this sector's transformation. Objective three of the NAP is *To consistently supply the national food system with an increasing portion of safe and nutritious locally produced foods that meet dietary and food*

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<sup>11</sup> Food and Nutrition Council, Dominica. "The Food And Nutrition Security Policy For The Commonwealth Of Dominica," February 2014.

<sup>12</sup> <https://www.fao.org/nutrition/education/food-dietary-guidelines/regions/countries/Dominica/en>

<sup>13</sup> <https://healthpromotion.gov.dm/about-us/health-promotion-resource-centre>

<sup>14</sup> <http://healthpromotion.gov.dm/programmes/healthy-people-beautiful-communities/23-mission-vision>

*preferences of the population and assure basic food needs in the aftermath of man-made and/or natural disasters.*

The NAP identifies two pathways for achieving objective 3:

- facilitate and support the operations of a National Food and Nutrition Security Council to identify and prioritise systems to assure household and community access to availability of foods (fresh and processed plant and animal) produced and supplied by the local farming and processing sector.
- facilitation of food self-reliance programmes among communities and households, with a focus on organised youth-enabled initiatives, such as, school gardens, public canteen, youth-led food gardens, etc.

The GOCD anticipates that implementation of these two pathways will require development of partnerships across the government sector, civil society and the private sector.

In addition to the NAP, several other GOCD programs are worth noting. First, as part of a broader approach to attracting investment in Dominica, the GOCD offers entrepreneurs a range of fiscal incentives for investment in aqua-culture and agriculture, including duty excise exemptions on input materials, and corporate and VAT holidays.<sup>15</sup>

Second, as part of its annual operations, the Ministry of Agriculture, Fisheries, Blue and Green Economy maintains its ongoing program of investing in the agricultural and fisheries sector modernisation. (Ministry of Planning and Economic Development, 2019). This includes investments in support to farmers and fishers for modernising and implementing new techniques, varieties and food safety, extension services and infrastructure investment and producer support. Currently, the budget for these activities is valued at \$20.3million XCD (pers. comm).

## Regional and International Responses

At the international and regional level, Dominica engages in food production and health related programs with the World Health Organisation – through the Pan American Health Organisation (PAHO), CariCom and FAO. Collectively, these programs have, and will continue to provide, valuable sources of technical assistance and knowledge exchange for the GOCD as it links its NCD prevention and agriculture agenda's together. Below is a selection of relevant regional and international agriculture and nutrition programs for which Dominica has participated. Signing up to, and participating in these regional agreements can be interpreted as a signal of the GOCD's political commitment to health and agricultural reform.

Key programs and initiatives include:

1. **The Inter-American Institute for Cooperation on Agriculture (IICA)** is a specialised agency for agriculture of the Inter-American System that supports agricultural development and rural well-being through the provision of technical guidance and support on bioeconomy and productive development, natural resources and risk management, trade, territorial development and family farming, and agricultural health and food safety.<sup>16</sup> IICA is currently implementing a range of capacity building resilience programs within Dominica.

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<sup>15</sup><https://www.investdominica.com/invest-here/industry-sectors/organic-agribusiness-aquaculture-and-manufacturing>

<sup>16</sup> For a list of recent projects in Dominica see:

<http://apps.iica.int/DashboardProyectos/programas/Listado?OPER=1&UNT=2D&ARCH=1>

- 2. The Pan American Health Organisation (PAHO)/WHO Multi-country Cooperation Strategy for Barbados and Eastern Caribbean Countries, 2018-2024.** Strategy 3 within this agreement includes a focus on linking nutrition with NCDs, and Food Security (Pan American Health Organization, 2018). In support of this Strategy PAHO provides a range of technical guidance and frameworks for a range of preventive health topics such as prevention of obesity in children, promotion of physical exercise, provision of ‘food labelling’ models ready for adaptation to participating countries. This has included drafting a School Nutrition Policy, observance of the Caribbean Wellness Month and launching events with the Dominica Diabetes Association (Ministry of Planning and Economic Development , 2019).

The PAHO was also instrumental in developing for the Eastern Caribbean a context specific nutrition and energy intake guide which was published in 2020 (Pan American Health Organization, 2020).

- 3. FAO Agricultural Programs in Dominica<sup>17</sup>** The FAO has implemented a number of agricultural development programs within Dominica over the last decade through its country program framework. These can provide important ‘pieces’ of the puzzle in expanding domestic agriculture. These include:
  - **Improving Agriculture Resilience and Adaptive Capacity to Secure Food and Rural Livelihoods** in the Commonwealth of Dominica - this provided technical training and introduction of new technologies into the sector, in support of the Agricultural Transformation Roadmap (FAO, 2022b).
  - **“Climate change adaptation of the Eastern Caribbean fisheries sector” (CC4FISH)** - the purpose of this project was to increase resilience, reduce vulnerability and introduce adaptation measures - and address barriers to change - to fisher communities in selected Caribbean SIDS (including Dominica). In addition, the project undertook to strengthen regional fishery bodies to promote regional collaboration (FAO 2022c).
  - **Strengthening Institutional and Technical Capacity for Providing Agricultural Services in Dominica** - this provided technical support to strengthen diagnostic laboratory capacities for animal and plant pest and disease management (FAO, 2020a).
  - **Sustainable Approaches to Agro-Processing and Value Chain Development of Root and Tuber Crops in the Caribbean.** This regional program supported Dominica to develop the potential of root and tuber crops to contribute to poverty reduction and rural and economic transformation, reduction of food and nutrition insecurity, address the high incidence of non-communicable diseases and to reduce reliance on food imports. Key activities included technical training of value chain creation, coordination and management (there was no existing value chain coordination occurring), demonstration projects for new technologies, nutritional analysis of local flours and demonstration of bread making using them. Technical advice on developing cassava flour processing (FAO, 2020b).
  - **Enhancing Institutional Capacities in Statistical Data Collection and Analysis in the Agricultural Sector in OECS Member States** - to strengthen the planning function of the GOCD agricultural planning by supporting the development of its agricultural statistics systems (FAO, 2020c).

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<sup>17</sup> See for example: <https://www.fao.org/publications/search/en/?country=RG9taW5pY2E=>

- **Strengthen the Technical Capacity of Young Professionals to Support the Coordination and Implementation of Projects** - to support Dominica (and other Caricom countries) to build capacity, and networking opportunities for young professionals in the food and agricultural sector (FAO, 2021).
4. **The Caribbean Community (CARICOM)** has a number of related programs that could support Dominica in transforming the agricultural sector and linking to healthy diets:
- **Caribbean Agricultural Development Institute (CARDI)** - for the provision of technical support and agricultural related research and development (CARDI, 2018).
  - **Caribbean Public Health Agency (CARPHA)** - has worked with the Ministry of Health, Wellness and New Health Investment have undertake a range of nutritional programs including promotion of breastfeeding, launch of World Diabetes Day,<sup>18</sup> training of Community Health Aids in the preparation of healthy meals - as a primary health care measure, implementing nutrition education/counselling to parents, children and people living with NCDs and the promotion of school gardening and locally grown healthy food. CARPHA has developed a range of model nutrition based plans and policies including for school feeding, management of obesity and NCD, reduction of sodium and technical training of nutritional analysis software (see CARPHA, 2022). A major initiative in 2017 was the program for *Promoting Healthy Diets, Food Security, And Sustainable Development In The Caribbean Through Joint Policy Action* which consisted of a 6 point plan to prevent childhood obesity. These points are: food labelling, standards for improving nutritional quality of food, trade and fiscal policies to regulate the nutritional content of food imports and food chain incentives to address supply chain issues and demand side for healthy food (CARICOM, 2017).
  - **The Healthy Caribbean Coalition (HCC)**. The HCC was established in 2008 in response to a Declaration of Heads of Government of the Caribbean Community (CARICOM) on non-communicable diseases (NCDs). It is the only Caribbean NCD alliance of over 100 health and non-health civil society organisations (CSOs). The HCC provides technical advice, community engagement programs, model legislation and regulation, provision of health promotion material (The Healthy Caribbean Coalition, 2021).

## International Opportunities

As noted above, there has been significant effort to support the development of Dominica's agricultural sector, and promote preventative health in its communities. Recently, two additional initiatives offer Dominica opportunities to pursue its healthy diet/preventative NCD agenda. These are discussed briefly below.

### The Healthy Caribbean Coalition (HCC)

In 2021, The HCC released its Transformative New Agenda (TNA) for the prevention and control of NCDs in the Caribbean region, based on lessons from managing the COVID-19 pandemic and its interaction with NCDs in particular (The Healthy Caribbean Coalition, 2021). The TNA delivers a framework that focuses on addressing 5 major diseases - cardiovascular diseases, diabetes, cancer, chronic respiratory diseases, and mental, neurological, and substance use disorders - and

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<sup>18</sup>

<https://www.carpha.org/Portals/0/Documents/Food%20and%20Nutrition%20Bulletins/CARPHA%20Food%20and%20Nutrition%20Bulletin%20202-2021.pdf>



five main risk factors - tobacco use, unhealthy diet, physical inactivity, harmful use of alcohol, and air pollution.

The TNA could provide a new range of ideas, and technical support, that could be adapted for Dominica. Strategies identified for this agenda are summarised in Box 2.

### **Box 2: Key Strategies in the HCC Transformative New Agenda for NCDs in the Caribbean**

Advocacy and communication that re-frame NCDs to emphasise their threat to equity and the progressive realisation of the right to health,

Greater engagement with PLWNCDs,; Involvement and centring of PLWNCDs, children, adolescents, youth, and other persons in interventions that affect them to ensure appropriateness and facilitate success;

Enhanced investment in, and capacity building of, civil society to perform its functions, including to mobilise people, act as a catalyst for NCD social activism and movements, and galvanise action;

Raising awareness, sharing information, and building capacity regarding NCDs, risk factors, equity, human rights, human security, and human capital;

Engagement with traditional and new media using NCD champions and policy entrepreneurs to contribute to the crafting and dissemination of audience-appropriate messages;

Use of settings for health promotion and preventive interventions, including schools, workplaces, faith-based organisations, and communities;

Integration of multisectoral actions that address NCD reduction and related issues, including food and nutrition security, the climate crisis, and preparedness for future pandemics, emergencies, and disasters;

Partnerships, networking, and resource mobilisation, including promotion of a social impact business model for healthy commodity industries such as those providing financial, insurance, telecommunications, media, agricultural, and transportation services, identifying shared value and win-win situations for private sector and public health, tailored to Caribbean realities;

Research, including political economy and behavioural economics analyses, which, respectively, catalyse evidence-based interventions and effective stakeholder partnerships, and nudge persons toward desired behaviour change;

Surveillance, monitoring, and evaluation, for assessment of the NCD situation, trends, and the progress and impact of interventions, and to hold governments, civil society, and private sector accountable, and monitor conflict of interest; Identification and implementation of sustainability mechanisms, to preserve and build on gains made, through institutional and other systems and structures;

Use of digital strategies and platforms, which is cross-cutting, with implementation of digital strategies to promote the TNA-NCDs, support interventions, strengthen health literacy, improve equitable access to accurate information, and enhance telehealth interventions; and

Promotion of the development of plans to implement the TNA-NCDs by key stakeholders and sectors.

Source: The Healthy Caribbean Coalition, 2021

## Small Island Developing States Ministerial Conference, June 2023

The WHO SIDS Ministerial Conference on the prevention and control of NCDs and mental health is planned for 14-15 June in Barbados. The objectives are to set out an ambitious agenda for addressing NCDs and mental health in SIDS - and will serve as an input into the preparatory process leading to the fourth High-level meeting of the United Nations General Assembly on NCDs in 2025 and to future global summits on mental health.

A SIDS High-level technical meeting on NCDs and mental health preparatory meeting will be held on 17-18 January 2023<sup>19</sup> to discuss opportunities to scale up multi-sectoral actions, to share experiences, discuss and identify key recommendations and to present and discuss the WHO NCD Implementation Road Map 2023–2030 and its application in SIDS countries. The expected outcome of the preparatory meeting is a report with key recommendations that will serve as the zero draft for the negotiated outcome document of the WHO SIDS ministerial conference on NCDs and mental health in June 2023.

## World Health Organisation “Best Buys” and Lancet Research

Since 2018, the WHO, through its *Saving Lives, Spending Less* program has identified a set of costed, cost effective measures that low and middle income countries could introduce to achieve a 15% reduction in NCD related premature mortality by 2030 in line with SDG Goal 3.4. Some of these best buys look at low cost treatment options, while those recommended actions for NCD prevention are summarised in Box 3. The WHO estimates that the combined cost of all measures is an additional US\$1.27 per person per year, but that for every dollar invested, the country will receive \$US7 in return by 2030.

### Box 3: WHO’s Best Buys - focussing on NCD Prevention

<b>1. Reduce Tobacco Use</b>	<ul style="list-style-type: none"> <li>• Increase excise taxes and prices on tobacco products</li> <li>• Implement plain packaging and/or large graphic health warnings on tobacco packages</li> <li>• Ban tobacco advertising, promotion and sponsorship</li> <li>• Ban smoking in all indoor workplaces, public places, and on public transport</li> <li>• Warn about the harms of smoking/tobacco use and secondhand smoke through mass media campaigns</li> <li>• Provide tobacco cessation programs</li> </ul>
<b>3. Reduce Harmful Use of Alcohol</b>	<ul style="list-style-type: none"> <li>• Increase excise taxes on alcoholic beverages</li> <li>• Ban or restrict alcohol advertising.</li> <li>• Restrict the physical availability of retailed alcohol</li> <li>• Enact and enforce drink-driving laws and blood alcohol concentration limits</li> <li>• Provide psychosocial intervention for persons with hazardous and harmful alcohol use</li> </ul>
<b>3. Promote Healthy Diet</b>	<ul style="list-style-type: none"> <li>• Reduce salt intake by product reformulation, target setting, providing lower sodium options in public institutions, promoting behavior change through campaigns and front-of-pack labelling</li> <li>• Ban trans-fats in the food chain</li> <li>• Raise taxes on sugar-sweetened beverages to reduce sugar consumption</li> </ul>
<b>4. Promote Physical Activity</b>	<ul style="list-style-type: none"> <li>• Promote physical activity with mass media campaigns and other community based education, motivational and environmental programs</li> <li>• Provide physical activity counselling and referral as part of routine primary health care</li> </ul>

Source: WHO, 2018

More recently, research published by the Lancet (Watkins et al, 2022) identified 6 inter-sectoral policies - along with specific clinical interventions - that were deemed cost effective, feasible and relevant for low and middle income countries. The intersectoral interventions were identified as

<sup>19</sup>

<https://www.who.int/news-room/events/detail/2023/01/17/default-calendar/sids-high-level-technical-meeting-on-nncds-and-mental-health>

alcohol excise taxes, alcohol regulation, tobacco excise taxes, smoking regulations and information, education, and communication, sodium reduction measures, banning trans fats.

## National Opportunities

The GOCD has recently announced a number of initiatives that have the potential for supporting NCD interventions. These represent potential opportunities upon which to build nwcq include:

- Appointing a national coordinator to coordinate across government ministries and agencies to address non-communicable diseases. (Press Release link)
- Working with the World Bank to undertake a rapid assessment of the capacity of Dominica's primary healthcare system to diagnose, treat, and manage NCDs (Byron, 2023). The project is currently ongoing and set to report.
- Reintroduction of primary health care nurse training within Dominica to support NCD prevention within communities and primary health care settings. (Pandey, 2022).

Reforming agriculture is a clear priority for the GOCD - and there are clear mandates that policy concepts can be aligned with.

The key domestic opportunity for linking agricultural development to prevention of NCDs is the substantial political commitment expressed in the national policy document **National Resilience Development Strategy 2030** (Department of Finance, 2020). This strategy places agriculture, food security as one of seven key development objectives for Dominica to 2030. In addition, a key costed initiative under the strategy is to transform:

“Dominica as a Global Centre for Agriculture Resilience will transform the country into a model for best practice regionally and internationally, working across the value chain from farmers to end-users, with a dynamic Ministry of Blue and Green Economy, Agriculture and National Food Security as a key part of the sector's engine.

This initiative will develop a scientific, and practical, approach to reducing the vulnerability of farmers and fisherfolks through the adoption of resilient practices, as well as the introduction of resilient crops and infrastructure. Delivered by 2030 - this has been costed at around XCD 500 million (USD 18.5 million).” page iv (Climate Resilience Executing Agency of Dominica, 2020)

This commitment to linking agriculture and healthy diets is reflected in the language used in the Agriculture and Food Systems Transformation Roadmap for Dominica identified (but not committed to) are:

- Encourage nutrition sensitive food production to focus agriculture on producing nutritious main staples including neglected but nutritious local and indigenous varieties and species of root and tuber crops, indigenous vegetables and fruits.
- Improve food storage to reduce food loss and waste through the introduction of low-cost, energy efficient on-farm storage units. Develop systems to recycle food wastes.
- Examining the role of regulation and incentives for food labelling, improving the nutritional content of food and beverages sold in the country.

Another opportunity arises from the Dominica Climate Resilience and Recovery Plan 2020-2030, which was developed in response to the growing impact of climate change. A key pillar of the plan is the vision to transform Dominica into a Global Centre for Agriculture Resilience that showcases and models regional and international best practice for value chain creation and management and

the introduction of resilient crops and infrastructure. The initiative will be led by the Ministry of Agriculture, Fisheries, Blue and Green Economy (Climate Resilience Executing Agency of Dominica, 2020).

## Potential learning opportunities from other countries

A recent study in *Nature* found that voluntary initiatives to improve food regulation in middle income countries is an ineffective response to NCDs (Erzse et al 2022). In considering regulation of the national food system and to encourage the uptake of healthy lifestyle habits, the GOCD may wish to consider a number of international policy initiatives explored by other national governments. These include:

- Introducing tax incentives for employers to provide healthy lifestyle benefits to their staff. For example in the UK, there is a provision in the national tax code for employers to receive tax benefits if they provide exercise facilities for staff or subsidise membership to gyms and/or provide bicycles for staff use.<sup>20</sup> The UK Government is also exploring the concept of providing vouchers, discounts and rewards for healthy eating and healthy behaviours such as exercise.<sup>21</sup>
- There is little evidence that higher minimum wages lead to more nutritious and healthier diets (e.g. Pohl et al, 2018, Palazzolo and Pattabhiramaiah, 2021). However, the use of specific rebates and cash back programs of between 10% and 25% for healthy food purchases has been successful in South Africa (see Sturm et al, 2013 and Hawkes et al, 2015).
- There is evidence that introducing junk food marketing regulation can significantly reduce the purchasing of junk food items (e.g. Kovic et al, 2018). For example in the UK junk food advertising is banned during TV 'children hours' and there is growing pressure to extend that to 9pm.<sup>22</sup>
- This is a significant international discussion around the benefits of incorporating preventative health care measures - e.g. obesity management - into mainstream health services. For example, the National Health Service in the UK has incorporated access and referral to preventative health measures into routine for managing hospital patients and is now referring patients with type 2 diabetes and/or obesity to subsidised weight management programs.<sup>23</sup>

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<sup>20</sup> See: <https://www.gov.uk/guidance/fitness-at-work>

<sup>21</sup> See: <https://www.gov.uk/government/news/new-pilot-to-help-people-exercise-more-and-eat-better>

<sup>22</sup> See for example [https://www.sustainweb.org/childrens-food-campaign/junk\\_food\\_marketing/](https://www.sustainweb.org/childrens-food-campaign/junk_food_marketing/)

<sup>23</sup> See: <https://www.longtermplan.nhs.uk/areas-of-work/prevention/treating-and-preventing-ill-health/>

## Cambridge Policy Boot Camp: Part of the Food System Game Changers Lab 2.0

The Food Systems Game Changers Lab (FSGCL) 1.0 - which was a major part of the Summit - collected more than 500 solutions, from 83 participating countries, during the leadup to the Summit reflecting a diverse range of ideas, innovations and initiatives. Further screening of the ideas brought together 24 Solution Cohorts who co-created an Action Agenda that offers a vision for future food systems that are sustainable, equitable, healthy, and diverse, as well as a transformative pathway to realise that vision through a particular collective solution set.

The Cambridge Policy Boot Camp (CPBC) builds on the work of FSGCL 2.0 by providing the tailor connections between specific food system problems that a (local or national) governments want to tackle and the participants in the Game Changers Lab who have chosen to specialise in that particular area of the food system.

The CPBC methodology allows participants to engage in an intensive exploration of a given challenge through a multi-layered system lens, guided and supported by a dedicated group of expert facilitators and mentors with years of substantive expertise. The “challenge owner” (government entity) takes part and is committed to taking forward the outcomes of the boot camp.

The CPBC approach can greatly facilitate the process of moving from a specific solution, developed as part of the FSGCL 1.0, to propositions with system-changing potential, via matchmaking with governments and companies and “stress testing” of the propositions against the realities of a particular context.

### The Cambridge Policy Boot Camp (CPBC)

The CPBC is a transdisciplinary ‘action research’ method developed by Dr Nazia M Habib, the Centre Head and the Founder of the Centre for Resilience and Sustainable Development (CRSD) at the University of Cambridge, UK. A multi-disciplinary team of experts at the Centre are also members of the Department of Engineering at the University of Cambridge.

The CPBC is an agile approach to quickly identify, document and use evidence to develop potential solutions for a complex policy problem. The aim is to integrate multiple perspectives, using mutually reinforcing frameworks, that can provide practical direction for complex decisions<sup>74</sup> and promote resilient solutions within the given context and resources.

Using collective design thinking CPBC supports decision makers to make better decisions without spending a lot of time, money and energy by addressing three key challenges in designing policy:

- 1. Insights brought to unlock thematic challenge** - allows policymakers to quickly come to terms with the complex systems within which they operate, and the scope and scale of potential effective policy responses (e.g. complex multi-level governance of the food system and public food)
- 2. Insights brought to unlock technical challenges** - this acts to improve coordination and collaboration between knowledgeable parties and the powerful entities required through creative and critical thinking to unlock shared insights to find common ground. Doing so often reduces transaction cost and improves shared trust in the policy system.

- 5. Insights brought to unlock outreach challenge** - this acts to engage with external agencies (including media) to secure (implicit) buy-in in the new policy systems, This is an important part of the CPBC design to create potential institutions that can facilitate, promote and secure long term long term solutions for promoting healthy diets and preventing NCDs in Dominica.

Using a combination of dynamic systems thinking approach blended with political economic theories, decision science and creative design, a CPBC exposes participants to social design thinking, complex deductive reasoning and empathetic analysis. Articulation of outcomes, exposure to trade-offs, unintended complexity and inefficiency in the existing system enables individuals to question inherent biases, exercise critical thinking capacity and to practise negotiated reasoning skills in a short burst of time.

Empirical studies on the impacts of applying system thinking indicate that systems thinking can significantly improve organisational leadership performance and efficiency (Skaržauskienė, 2010), and is integral to effective project management (Kerzner, 2017) which can improve crisis responses (Goldberg, 2013).<sup>24</sup> Improving crisis response is part of developing a resilient system, which can also optimise itself by conducting specific practices such as getting rid of outdated knowledge or tools (Cherney and Head, 2011), and engaging in co-producing research, form new network, and invest in new structures (Kitson et al, 2018).

CPBC is primarily intended to benefit identified lead organisations in the process - as they are the accountable party with the mandate to implement the best ideas developed by participants.

The anticipated outcomes from the CPBC are:

- 1) sharpened quality of the solutions** in terms of their relevance and effectiveness in a particular policy/political economy context.

- 2) expanded individual level capacity amongst the participants** (stakeholders, shareholders) to apply systems thinking in the development of solutions; and

- 3) generating advance commitment** in specific policy-making entities (national or local) to operationalize solutions.

To ensure we achieve these outcomes, the co-creating partners in this action-research have set out a number of the **impact variables** that are intrinsically connected with the impact outcomes and intertwined in the CPBC delivery process. During Phase 1, context-specific definitions are being developed that are locally understood, and the anchor agency and the ultimate beneficiaries are being identified while drawing up the boundary conditions for the systems analysis to develop Phase 2. During Phase 2, when the workshop mode is on, participants who are representing the ultimate beneficiaries along with other shareholders and leadership representatives from the stakeholders, are learning various creative and analytical tools and applying them to define and analyse the solutions. During the workshop, participants learn system thinking approaches and apply them. In Phase 3, the leadership representatives from the stakeholder group not only become the designers of the policy ideas but also engage in the validation of the synthesis which leads to advanced buy-in for the policy pathway that emerged from the co-creation process.

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<sup>24</sup> Decision makers and participants from over 90 countries have benefited from the Cambridge Policy Boot Camp experience. Policy topics addressed in CPBC exercises have spanned safe repatriation of refugees to upskilling policy for industry 4.0. To find out more about the research centre work see <https://www.crsd.landecon.cam.ac.uk>

## The CPBC Delivery Process

Each Cambridge Policy Boot Camp works with an ‘anchor agency’ that holds the appropriate budget and mandate for taking forward any policy options developed - and is therefore the ultimate beneficiary of the project.

In Dominica, the ‘anchor agency’ will be the Ministry of Agriculture, Fisheries, Blue and Green Economy.

Representatives from stakeholders and shareholders are identified through rigorous consultation with the global and national experts who are dealing with the policy challenge on a daily basis. It is their insight into the value chain of the policy and product that allows CPBC to address unintended consequences collectively and efficiently.

There are five stages in executing a Cambridge Policy Boot Camp. Throughout these stages, the EAT and Cambridge teams will work together with the responsible government institution that has committed to the CPBC as “owner”<sup>25</sup> of the key challenge question, and with Thought for Food as the host of FSGCL.

- (a) **Stage 1: Setting up (Overall project):** The FSGCL 2.0 leadership team, along with the EAT-Cambridge team develop a Country/Idea selection protocol to ensure the CPBC is targeted well. Based on the framework, countries will be selected or invited, a decision to be made collectively.
- (b) **Stage 2: Interlinked Analysis (CPBC Phase 1):** Conducting background research to identify and map the underlying system of relevance to the specific challenge area and corresponding solution cohort that the government entity wants to engage with through the CPBC, related networks and the ultimate beneficiaries. This stage takes approximately two to three months to complete.
- (c) **Stage 3: Boundary Setting (CPBC Phase 2):** Define a question that pinpoints the exact challenge that a government entity wants to tackle, within its institutional mandate, and that matches the specific FSGCL solution cohort.
- (d) **Stage 4: Workshop Design and Execution (CPBC Phase 3):** Design a time-bound workshop in close collaboration with the lead government institution as identified in phase 1 (See figure 1), and invite ultimate beneficiaries as identified through these same steps. Participants from the FSGCL solution cohort will also be identified and selected to play important roles - some as mentors, others as facilitators or note takers, and others as participants.

The workshop date is 28 July, 2022 from 09:00 to 13:00 (London, UK Time).

- (e) **Stage 5: Synthesis, Follow-Up and Evaluation (Overall project):** There will be constant engagement between the EAT-Cambridge team throughout the process. In particular there will be structured collaboration to produce two types of documents reporting on the synthesis of the outcomes from the CPBC.

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<sup>25</sup> Also known as the anchor agency.

### **Defining key terms in the CPBC methodology**

**Shareholders** are the problem owners and less powerful groups in the policy system. If anything improves in the policy system due to a policy application, the shareholder group should benefit first. For example, a healthy school meal will benefit the students before their families for having healthy children.

**Stakeholders**, as categorised in the CPBC analytical process, possess greater political economic power. This group is often represented by institutions that have institutional mandates or some provision of responsibility to implement the articulated policy, when made public. It is the same group that can contest the policy or help complete the policy life cycle. The CPBC method applies insights from network research to identify stakeholders who need to be part of the co-creation process of policy articulation to reduce unintended consequences. By involving policy stakeholders from the starting point of the CPBC design phase, individuals participating in the process benefit from systems level understanding and can appreciate the institutional value of being part of the change process that a particular policy design is aiming for.

'*Ultimate Beneficiary*' (*UB*) is a group of population represented within the shareholder group, is also identified *for whom* the policy articulation is needed and is going to take place. During this first phase, boundary conditions are set around the problem in partnership again with the anchor agency who is aiming to improve communication and commitment to its shareholders and stakeholders of the solutions.

*Policy Anchor (PA)* is a member within the stakeholders category, often a government institution at any level—national, regional or local—which is the *owner* of the challenge and hence has the authority to make policy and institutional changes.<sup>26</sup> Every CPBC is delivered in partnership with a local *policy anchor agency*. Policy anchor agency is the 'owner' of the solution. The owners are typically a local institution, a government agency that is responsible for rolling out a transformation change for a given challenge.



**Figure 5: Sketch of intertwined representation of CPBC Participants**

<sup>26</sup> For an example of a recent Cambridge boot camp see: <https://www.globalfood.cam.ac.uk/news/un-food-systems-summit-2021-and-eat-foundation-applied-cambridge-policy-boot-camp-methodology>



## Co-creation Partners, Participants and Facilitators

### Participating Organisations

Ministry of Agriculture, Fisheries, Blue and Green Economy

Ministry of Planning

Inter-American Institute for Cooperation on Agriculture (IICA)

Food and Nutrition Council

Ministry of Health, Wellness and Social Services

Ministry of Environment, Rural Modernization and Kalinago Upliftment

Ministry of Education, Human Resource Planning, Vocational Training and National Excellence

Dominica Bureau of Standards

Women & Gender

National Focal Point Farmers Cooperatives

### University of Cambridge, UK

No.	Name	Title
1	Dr Nazia M Habib	Associate Professor and Head of Research Centre, Centre for Resilience and Sustainable Development (CRSD), University of Cambridge, UK
2	Dr Nicky Athanassopoulou	Research Associate and Head of Knowledge Transfer, Centre for Resilience and Sustainable Development (CRSD) and IFM Engage, University of Cambridge, UK
6	Mr Terry Nicklin	Communication Specialist, the Centre for Resilience and Sustainable Development (CRSD), University of Cambridge, UK
7	Dr Hannah Parris	Research Associate of the Centre for Resilience and Sustainable Development (CRSD), University of Cambridge, UK
8	Mr Charles Mawusi	Administrator of the Centre for Resilience and Sustainable Development (CRSD), University of Cambridge, UK
10	Mr Richard Jones	Centre for Resilience and Sustainable Development, University of Cambridge, UK
11	Mr Steve McCauley	Senior Fellow of the Centre for Resilience and Sustainable Development, University of Cambridge, UK

## EAT Foundation Experts:

No.	Name	Title
1	Olav Kjørven	Senior Director of Strategy, EAT Foundation
3	Marius Weschke	Senior Implementation Officer, EAT Foundation

## Game Changers Lab

No.	Name	Title
1	Ms Liesl Hattingh	Marketing Specialist, UCT Research Contracts & Innovation

## Agenda

Date: Tuesday, January 17, 2023

Time: 14:00 - 18:00 (London)

Zoom: <https://eng-cam.zoom.us/j/4330861571>

Time	Speakers and sessions
5 min (1400-1405)	<p><b>Welcome and Introduction (HELLO)</b></p> <p><b>Anchor:</b> Mr. Steve McCauley, CRSD Senior Fellow Dr Nazia M Habbib (2 min) <b>Room:</b> Main Session</p>
5min (1405-1410)	<p><b>Opening Remarks</b></p>
15min (1410-1425)	<p><b>Invite Experts To Speak On The Issue</b></p> <p>Five experts will offer <b>3 minutes of reflection</b> on the thematic challenge of the Cambridge Policy Boot Camp. <b>Room:</b> Main Session</p>
15min (1425-1440)	<p><b>Introduce Techniques (BRIEFING)</b></p> <p>Multiple thinking techniques will be introduced to the participants who are then asked to select one or two techniques to address the CPBC challenge. <b>Room:</b> Main Session</p>

<p>90min (1440-1610)</p>	<p style="text-align: center;"><b>Group Application (APPLIED THINKING)</b></p> <p>Groups will be formed and sent to the breakout room where they will use the thinking techniques to analyse the CPBC challenge and come up with tentative solutions. Experts will be assigned to each room to provide further help.</p> <p style="text-align: center;"><b>5 Minutes Break</b> (at the discretion of the Facilitator)</p> <p style="text-align: center;"><b>Room:</b> Breakout rooms</p>
<p>5min (1610-1615)</p>	<p style="text-align: center;"><b>Break</b></p> <p style="text-align: center;"><b>Room:</b> Main room</p>
<p>10min (1615-1625)</p>	<p style="text-align: center;"><b>NABC Presentation skill (Elevator Pitch)</b></p> <p>A technique will be introduced to the groups to enable them to summarise their ideas for presentation.</p> <p style="text-align: center;"><b>Anchor:</b> Dr Nazia Habib</p> <p style="text-align: center;"><b>Room:</b> Main room</p>
<p>50 min (1625-1715)</p>	<p style="text-align: center;"><b>NABC Presentation Prep (SMART THINKING)</b></p> <p>Groups will re-enter the virtual room and rework on their solutions by revisiting the presentation technique.</p> <p style="text-align: center;"><b>Room:</b> Breakout rooms</p>
<p>30 min (1715-1745)</p>	<p style="text-align: center;"><b>NABC Presentation</b></p> <p>All the groups will come back to the main room, and present their ideas one by one to the experts and decision-makers from various stakeholder institutions. Each group is given 5 minutes to present their solution.</p> <p style="text-align: center;"><b>Room:</b> Main room</p>
<p>10min (1745-1755)</p>	<p style="text-align: center;"><b>Feedback and Discussions</b></p> <p>The best idea will be announced and offered a chance to be integrated with further support from the Ministry of Health.</p> <p style="text-align: center;"><b>Room:</b> Main Session</p>
<p>5min (1755-1800)</p>	<p style="text-align: center;"><b>Closing Remark</b></p>

**The Cambridge Team will stay online for the next 30 minutes to answer questions and network with participants.**

## Appendix

**Figure 1. Map of Dominica**



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