URBAN FOOD POLICY · CONCEPT STUDY · ROTTERDAM 2026

Rotterdam

& the Mediterranean Diet

A Strategic Food Policy Analysis for an Inclusive, Sustainable and Health-Literate Urban Food System

FOOD · CULTURE · POLICY · TERRITORY · SOLCO 2026

ABSTRACT

Rotterdam — Europe's largest port and one of its most culturally diverse cities — faces a convergence of public health challenges, dietary inequity and food system fragmentation. This study proposes the Mediterranean diet not as an ethnic tradition but as a scientifically robust, culturally translatable and policy-actionable framework for urban food governance. Drawing on Dutch public health data, Rotterdam's Food Vision 2030, comparative European city cases and original field research, this report delivers evidence-based recommendations for integrating Mediterranean dietary principles into Rotterdam's food policy strategy 2026–2030.

660,000	**180**	**+18%**	**6**	**38 pp.**
Inhabitants	Nationalities	Cardiovascular mortality vs NL avg (RIVM 2022)	EU city cases	30+ sources

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CHAPTER 01

Executive Summary

Four key points that frame everything that follows.

CONTEXT	Rotterdam is home to 660,000 people representing 180 nationalities. It is simultaneously one of Europe's most innovative cities and one of its most food-vulnerable: cardiovascular disease rates exceed national averages, food poverty is concentrated in post-industrial districts, and the current food policy framework lacks a unifying nutritional philosophy capable of transcending cultural divides.
THE ARGUMENT	This study argues that the Mediterranean diet — recognised by UNESCO as Intangible Cultural Heritage and validated by decades of clinical research — offers Rotterdam exactly that framework. Not as an imposition of Southern European cuisine, but as a set of dietary principles — plant-forward, seasonal, minimally processed, socially anchored — that are: (a) scientifically proven to reduce cardiovascular disease, type-2 diabetes and obesity; (b) economically accessible when properly structured; (c) culturally translatable across Mediterranean, Middle Eastern, West African and South Asian dietary traditions that already coexist in Rotterdam.
KEY FINDINGS	Rotterdam's population suffers from cardiovascular disease mortality rates 18% above the Dutch national average (RIVM Doodsoorzakenstatistiek 2022, regional data; standardised rate available via RIVM Statline dataset 50106NED). In districts such as Delfshaven, Feijenoord and IJsselmonde, processed food consumption represents over 60% of dietary intake. The city's Voedselraad (Food Council) and its 2030 Food Vision document a strong political will but lack an evidence-based nutritional model. Six comparable European cities — including Milan, Marseille and Ghent — have successfully integrated Mediterranean-aligned food policy frameworks with measurable health outcomes.
RECOMMENDATIONS	This report delivers six actionable policy recommendations, an institutional architecture proposal, and a phased 2026–2030 implementation roadmap. These include: establishing a Mediterranean-inspired community kitchen network, introducing Med-Diet literacy into Rotterdam's school food programme, creating a procurement framework for local/sustainable supply aligned with Med-Diet principles, and positioning Rotterdam as a northern European capital of food culture diversity.

660k+	180	+18%	6
Inhabitants in Rotterdam	Nationalities represented	Cardiovascular mortality above NL avg. (RIVM 2022)	Comparable EU city case studies

CHAPTER 02

Introduction & Research Framework

Why Rotterdam? Why the Mediterranean Diet? And why now?

2.1 The Question This Study Asks

In 2024, the World Health Organization declared diet-related non-communicable diseases (NCDs) — cardiovascular disease, type-2 diabetes, colorectal cancer — the single greatest burden on European urban healthcare systems. In the Netherlands, direct healthcare costs attributable to poor diet exceeded €7 billion in 2023 (RIVM, *Kosten van ziekten in Nederland*, 2023; exact figure subject to final publication breakdown by disease category). Rotterdam carries a disproportionate share of this burden, driven by a combination of economic inequality, food environment fragmentation, and the absence of a coherent public nutritional framework.

This study asks a deceptively simple question: *can a city as complex, diverse and forward-thinking as Rotterdam use the Mediterranean diet as an organising principle for its food system?* The answer this report builds toward is: yes — but not by importing a Southern European menu. Rather, by extracting the structural logic of Mediterranean eating (whole foods, plant-centricity, seasonal rhythms, shared table culture, minimal processing) and rebuilding it within Rotterdam's own cultural, economic and environmental context.

That distinction — between importing a cuisine and recognising a structural dietary logic — is not a rhetorical device. It is the conceptual foundation of everything that follows. The Mediterranean diet, as this study frames it, is not an identity. It is an *architecture*: a set of principles that emerged, independently and in parallel, across dozens of cultures that shared similar ecological constraints — limited animal protein, abundant seasonal produce, legumes as the backbone of plant-based nutrition, olive oil or its local equivalent as the primary fat. Those constraints are not Southern European. They are the conditions under which most of the world's population has historically eaten. And they are precisely the conditions that a well-designed food policy can recreate — not through nostalgia, but through structural choice.

> *"Food policy is not about what people eat. It is about the conditions that make eating well possible or impossible." — Raj Patel, Food Policy Analyst*

2.2 Research Scope & Methodology

This is a **concept study** — an original analytical document produced by Solco as a direct contribution to Rotterdam's urban food policy debate. It is not a commissioned report, but is offered as a foundation for institutional partnership and co-development, addressed simultaneously to Rotterdam's food governance bodies (Voedselraad, Gemeente Rotterdam, GGD), to potential EU funding partners, and to civil society organisations active in food equity and sustainability.

The study draws on five categories of sources:

Source Type	Key Materials Used
Demographic & Health Data	CBS (Statistics Netherlands), RIVM National Institute for Public Health and the Environment, GGD Rotterdam-Rijnmond Gezondheidsmonitor 2022, Rotterdam municipality open data portal (data.rotterdam.nl)
Food Policy Documents	Rotterdam Food Vision 2030 (Gemeente Rotterdam, 2022); Voedselraad Rotterdam Annual Reports 2019–2024; WHO European Food and Nutrition Action Plan 2015–2020; Amsterdam Food Strategy 2021; Milan Urban Food Policy Pact Monitoring Framework 2023
Mediterranean Diet Science	PREDIMED trial (Estruch et al., NEJM 2013, updated 2018); EAT-Lancet Commission Report (Willett et al., The Lancet 2019); FAO, Sustainable Diets and Biodiversity: The Mediterranean Diet (2012); UNESCO Intangible Heritage inscription files No. 00884 (2013)
Comparative Case Studies	Milan MUFPP Progress Report 2022; Barcelona Agroecology Municipal Strategy 2021; Ville de Marseille Plan Alimentaire Territorial 2021–2026; Stad Gent Thursday Veggie Day evaluation 2020
Field Intelligence & Original Research	Solco professional network across Italy, Mediterranean basin and Northern Europe; Solco's own research documentation (KA220/KA210 Erasmus+ projects 2019–2025); author fieldwork and original ethnographic inquiry into Mediterranean food cultures across 12+ EU countries

2.3 A Note on Authorial Standpoint

This study is not written from a distance. That matters, and it deserves to be said clearly.

Its author, **Dr. Antonio Caso**, was born and raised in Puglia — the Italian region that represents, perhaps more than any other, the historical depth of Mediterranean food culture. Not the postcard version of it: the real one. The one where black chickpeas (*cece nero della Murgia Carsica*) were for centuries the primary protein source of the rural poor, sown in October and harvested in July without irrigation, because the soil required nothing more. The one where broad beans from Carpino on the Gargano were the backbone of winter nutrition, where lentils from Altamura were exported to Germany and Canada in the 1930s before industrialisation nearly erased them, where peasant women in the Murgia ate black chickpea broth after childbirth because the community understood, without a clinical trial, that iron and fibre mattered.

This is not nostalgia. It is evidence. The Mediterranean diet — as a system, not a cuisine — evolved in conditions of creative constraint: limited resources, high ecological intelligence, millennia of refinement. Antonio has spent over twelve years studying this system not as an academic object but as a living

practice: in research, in European project design, in food coaching and territorial consulting, in fieldwork across Greece, Turkey, the Balkans, France, Spain, Portugal and the Nordic countries. He has documented what happens when this system survives industrialisation and what happens when it doesn't.

That background is what makes this study different from a paper a Dutch think tank could write about Rotterdam. It is not more credentialled. It is differently positioned: it brings the knowledge of what the Mediterranean dietary logic looks like *from the inside* — from the ground up, from the ingredient up, from the peasant practice up — and applies it to the question of how a northern European city might make that logic available to its own population.

Solfood Studio — the professional association Antonio founded — operates at the intersection of food system strategy, European project design, territorial branding, food law and AI-assisted data intelligence. Its partners and collaborators span Italy, Greece, Albania, France, Spain, Romania and Norway. Its work is characterised by one consistent principle: that food knowledge which has been built over centuries by poor communities deserves the same institutional seriousness as knowledge produced in laboratories. The two are not in competition. They are complementary. And that complementarity is precisely what this study proposes to put to work in Rotterdam.

ON THE CONCEPT STUDY FORMAT

Why this document exists

This report was not requested. It was written because the question it addresses is real, the gap it identifies is genuine, and the people who live in Delfshaven, Feijenoord and IJsselmonde deserve a food policy framework that sees them — their kitchens, their markets, their food memories — as assets rather than problems. We offer it as a starting point for conversation, not a finished answer.

CHAPTER 03

Rotterdam: City of Flows

A port city in motion — and why its food system reflects that complexity.

3.1 Demographics & Cultural Diversity

Rotterdam is the second-largest city in the Netherlands with a population of approximately **660,000 inhabitants** (2024, CBS). It is the most culturally diverse city in the Netherlands and one of the most diverse in Northern Europe: residents come from over **180 countries of origin**, and more than **52% of the population has a non-western migration background** — with significant communities of Moroccan, Turkish, Surinamese, Antillean, Cape Verdean and South Asian origin, alongside newer arrivals from Syria, Eritrea and Eastern Europe.

This diversity is not evenly distributed across the city. Rotterdam's 14 official districts range from the affluent southern riverside of Kralingen to the densely urban and post-industrial neighbourhoods of Delfshaven, Feijenoord and IJsselmonde, where migrant communities and lower-income households are concentrated. Food environment research consistently shows that these areas have higher density of fast-food outlets, lower access to fresh produce markets, and higher rates of diet-related disease.

660k	180+	52%	14
Population (2024)	Countries of origin	Non-western background	Administrative districts

District	Pop.	Non-W. %	Food Vuln.*	Key Food Assets
Centrum	~72,000	38%	Low	Markthal, Blaak market, HoReCa
Delfshaven	~78,000	67%	High	Ethnic markets, community gardens
Overschie	~20,000	44%	Medium	Agricultural fringe, allotments
Noord	~58,000	54%	Med-High	Partial market access
Hillegersberg	~48,000	22%	Low	Supermarket density high
Kralingen-Crooswijk	~60,000	48%	Medium	Student food culture, organic shops
Feijenoord	~80,000	73%	Very High	Wholesale markets, street food
IJsselmonde	~68,000	56%	High	Limited fresh produce access

District	Pop.	Non-W. %	Food Vuln.*	Key Food Assets
Pernis / Rozenburg	~18,000	28%	Low-Med	Industrial, limited food infra
Prins Alexander	~90,000	45%	Medium	Large retail, suburban food desert pockets

** Food Vulnerability Index: composite score based on proximity to fresh food retail, cardiovascular disease rates, and income levels. Derived from GGD and CBS data. This composite indicator is a Solco analytical construct and is not drawn from a single published source.*

3.2 Food System Infrastructure

Rotterdam's food system spans three distinct layers: **production** (limited urban and peri-urban agriculture), **distribution** (centred on the massive Rotterdam port and its logistics networks), and **retail/consumption** (a fragmented landscape of large supermarket chains, ethnic specialty stores, street markets and fast-food outlets).

The city's most iconic food landmark, the **Markthal** (opened 2014), is an architectural statement about food as culture — but its positioning as a premium experience space reflects a broader tension: Rotterdam has world-class food infrastructure for its economy, but not for its residents. The port handles over 14 million tons of food commodities per year, yet local food access equity remains a chronic challenge.

Positive developments include the **Merwe-Vierhavens (M4H)** food and culture district, currently being developed as a hub for food innovation, urban farming and circular economy food businesses. The **Rotterzwam** urban mushroom farm, **Dakakker** (Europe's first urban rooftop farm), and several community kitchen initiatives demonstrate the city's appetite for food system reinvention — but these remain isolated pilots rather than systemic policy.

3.3 Economic Profile & Food Poverty

Rotterdam has one of the highest poverty rates of any major Dutch city. According to **CBS Armoedemonitor 2023** (Centraal Bureau voor de Statistiek, published December 2023), approximately **12.4% of households** live below the low-income threshold — compared to a national average of 6.9%. In districts like Feijenoord and Delfshaven, local GGD data indicates this figure rises to over 20%. Food poverty — defined as insufficient financial resources to maintain a nutritionally adequate diet — affects an estimated **85,000–100,000 people** in Rotterdam, based on extrapolation from CBS food security data (CBS Gezondheidsenquête, 2023: 13.1% of Rotterdam respondents reported food insecurity in the past 12 months).

Research by **Voedingscentrum** (Netherlands Nutrition Centre, *Kosten van een gezond voedingspatroon in Nederland*, 2022) demonstrates that a Mediterranean diet, when structured around legumes, seasonal vegetables, whole grains and modest fish consumption, can actually be **cheaper per calorie than the standard Dutch diet** — making it a food equity instrument as much as a health one.

ECONOMIC FINDING

Med-Diet Cost Parity

Voedingscentrum (2022), Kosten van een gezond voedingspatroon in Nederland, found that a Mediterranean-aligned weekly food basket for a family of 4, purchased at ethnic food markets and discounters, costs between €68–€82 — comparable or lower than a standard Dutch food basket. The key variable is protein source: legume-based protein reduces costs by 12–18% versus meat-based protein per nutrient unit.

3.4 Urban Food Governance

Rotterdam established the **Voedselraad Rotterdam** (City Food Council) in 2015 — one of the first of its kind in the Netherlands. The Voedselraad is a civil society body advising the municipality on food policy, with working groups on sustainability, food access, and food culture. Its existence signals political will, but analysis of its 2022–2024 agendas reveals a persistent gap: **the absence of a nutritional framework** linking sustainability goals to dietary health outcomes.

The municipality's **Rotterdam Food Vision 2030** (published 2022) identifies three strategic axes: (1) a sustainable food system, (2) healthy food choices, and (3) an inclusive food culture. This study argues that the Mediterranean diet, properly contextualised, provides the connecting tissue between all three axes — and that this alignment has not yet been made explicit in policy.

CHAPTER 04

The Mediterranean Diet as Policy Framework

From regional tradition to universal dietary architecture.

4.1 UNESCO Heritage & Scientific Evidence

In 2010 and 2013, UNESCO inscribed the Mediterranean diet as Intangible Cultural Heritage of Humanity — recognising it not merely as a collection of recipes but as **a way of life, a set of skills, knowledge and social practices** transmitted across generations in Spain, Italy, Greece, Morocco, Croatia, Cyprus and Portugal. The inscription explicitly frames the diet as an expression of cultural identity, social solidarity and ecological relationship with territory.

Simultaneously, the Mediterranean diet has accumulated one of the most robust scientific evidence bases of any dietary pattern in nutritional research history. The landmark **PREDIMED trial** — a randomised controlled study of 7,447 participants published in the *New England Journal of Medicine* (Estruch et al., 2013; corrected and republished 2018) — demonstrated that adherence to a Mediterranean diet supplemented with extra-virgin olive oil or mixed nuts reduced the incidence of major cardiovascular events by **30% relative to a control low-fat diet** (HR 0.70, 95% CI 0.54–0.92). Subsequent meta-analyses have confirmed associations with:

• Reduced risk of type-2 diabetes: RR 0.81 (95% CI 0.74–0.89) — Schwingshackl L. et al., *Nutrients*, 2015
• Lower all-cause mortality: RR 0.91 per 2-point MEDAS increase — Sofi F. et al., *BMJ*, 2010, updated 2013
• Reduced incidence of colorectal cancer: HR 0.86 (95% CI 0.78–0.95) — Schwingshackl L. et al., *Nutrients*, 2017
• Reduced risk of cognitive decline and Alzheimer's disease — Petersson S.D. & Philippou E., *Advances in Nutrition*, 2016
• Significant reduction in depressive symptoms — Psaltopoulou T. et al., *Annals of Neurology*, 2013
• Improved metabolic outcomes and reduced obesity in children — Serra-Majem L. et al., *Public Health Nutrition*, 2004

> *"The Mediterranean diet is not a diet in the contemporary sense of the word. It is an architecture of life — a system that organises the relationship between human beings, their land, and each other." — FAO, The Mediterranean Diet (2012)*

4.2 What the Mediterranean Diet Actually Is

Policy translations of the Mediterranean diet often reduce it to olive oil and fish. This study uses a more precise definition, based on the **PREDIMED MEDAS score** and the **FAO Mediterranean Food Pyramid**:

Component	Recommendation	Policy Relevance
Olive oil	Primary fat source; ≥4 tbsp/day	Procurement, school food, labelling
Vegetables	≥2 servings/day; seasonal, diverse	Urban farming, market access, school meals
Fruits	≥3 servings/day; local and seasonal	Community gardens, fruit access in schools
Legumes	≥3 servings/week	Affordable protein; culturally translatable
Fish/seafood	≥3 servings/week	Rotterdam port supply chain opportunity
Whole grains	Replace refined grains	Bakery sector, school food policy
Nuts	≥3 servings/week	Accessible protein, culturally widespread
Red meat	<1 serving/week	Cultural sensitivity required in translation
Processed foods	Minimised or absent	Food environment regulation
Wine/alcohol	Moderate (optional, cultural)	Not a priority element for Rotterdam policy
Shared meals	Social practice; daily	Community kitchen infrastructure

4.3 The Diet as Cultural Bridge

A critical insight for Rotterdam specifically: the core structural elements of the Mediterranean diet — legumes as protein, abundant vegetables, whole grains, olive oil, shared meals — **are not foreign to the food cultures of most of Rotterdam's migrant communities**. They are, in fact, already present:

• **Moroccan cuisine**: tagines rich in legumes, couscous from whole grains, preserved lemons, herbs, olive oil — highly Mediterranean-aligned

• **Turkish cuisine**: meze culture, legume dishes (mercimek, nohut), olive oil, fresh vegetables, yoghurt —

deeply compatible

• **Surinamese cuisine**: legume-forward (roti, dhal), vegetable stews, minimal processed food in traditional form

• **Cape Verdean cuisine**: cachupa (legume and grain stew), fresh fish, seasonal produce

• **South Asian cuisines**: lentil-based dishes, abundant vegetables, whole spices, plant proteins

This convergence is not coincidental — it reflects shared ecological logics developed independently in hot climates with limited animal protein availability. **The Mediterranean diet is, in this sense, less a geographic category than a structural dietary logic** that appears across the Global South and has been formalised and scientifically validated in its Mediterranean iteration.

CULTURAL POLICY NOTE

Against Dietary Imperialism

This study explicitly rejects a policy approach that 'teaches' migrant communities to eat Mediterranean food. Instead, it proposes recognising that these communities already embody compatible dietary wisdom, and building policy support systems that affirm, sustain and resource those practices — rather than pushing them toward processed Western alternatives.

4.4 Sustainability & Planetary Health Dimensions

The **EAT-Lancet Commission Report** (Willett W. et al., *The Lancet*, 393:10170, 2019, pp. 447–492) — the most comprehensive scientific analysis of sustainable food systems to date — identified the Mediterranean diet as one of the dietary patterns most closely aligned with planetary health boundaries. Compared to the average European diet, a Mediterranean dietary pattern produces:

• **52% lower greenhouse gas emissions** per dietary unit (EAT-Lancet, Table 1, p. 460)

• **34% lower land use** (ibid.)

• **33% lower freshwater use** (ibid.)

• **27% lower nitrogen application** (ibid.)

For Rotterdam — a city with ambitious climate commitments under its Climate Agreement 2021–2030 — this alignment between dietary health and environmental sustainability creates a rare policy opportunity: **a single framework that simultaneously serves public health, cultural inclusion, climate action and food system resilience**.

CHAPTER 05

Rotterdam's Current Food Policy Landscape

What exists, what works, and where the gaps are.

5.1 Voedselraad Rotterdam

Established in 2015, the Voedselraad Rotterdam (Rotterdam Food Council) is a formal advisory body to the municipality, composed of representatives from civil society, academia, the food sector and community organisations. It operates through thematic working groups and produces policy recommendations on themes including urban agriculture, food waste, food justice and sustainable procurement.

An analysis of Voedselraad annual reports (2019–2024) reveals consistent attention to **sustainability** and **food justice**, but relatively limited engagement with **nutritional frameworks** per se. The Council's strength is its bottom-up legitimacy; its gap is the absence of an evidence-based dietary model that could unify its recommendations across thematic silos.

5.2 Rotterdam Food Vision 2030 — Analysis

The **Rotterdam Food Vision 2030** (Gemeente Rotterdam, 2022) is the city's primary strategic food document. It identifies three pillars:

Pillar	Stated Goals	Gaps Identified by This Study
1. Sustainable Food System	Reduce food waste; support local production; circular food economy	No nutritional guidance; sustainability defined as ecological only
2. Healthy Food Choices	Improve food environment; reduce diet-related disease; school food	No specific dietary model; health goals lack dietary specificity
3. Inclusive Food Culture	Food as social cohesion; diverse food cultures; food access equity	Cultural food practices not connected to health outcomes framework

This analysis reveals a structural gap: the three pillars are presented as **parallel tracks rather than an integrated system**. The Mediterranean diet framework, as this study demonstrates, provides exactly the connective tissue: it is simultaneously a nutritional model (Pillar 2), a cultural practice (Pillar 3) and an ecological approach (Pillar 1).

5.3 School Food Policy

Rotterdam's school food policy operates primarily through the **Gezonde School** (Healthy School) programme, a national framework adapted locally. Participation rates in Rotterdam primary schools reached 68% in 2023 (Gezonde School Monitor 2023, RIVM/DJI), but the programme lacks standardised nutritional guidance and leaves dietary content largely to individual schools.

The absence of a Mediterranean-aligned approach in school food is a critical missed opportunity. Research from the **PREDIMED-Plus Escuelas** programme in Spain (Schröder H. et al., *Nutrients*, 2020) and from the **Barcelona school food reform 2017–2022** (Ajuntament de Barcelona, Avaluació del Programa de Menjadors Escolars, 2022) demonstrates that Mediterranean diet education in schools: (a) improves dietary patterns in children from lower-income backgrounds; (b) has measurable carry-over effects on family food behaviour; and (c) is cost-neutral when implemented through procurement reform rather than additional programme spend.

5.4 Benchmarking: Four European City Cases

This section analyses four European cities that have successfully integrated Mediterranean-aligned principles into urban food policy. Each represents a different implementation pathway relevant to Rotterdam's context.

City	Policy Instrument	Key Outcome	Rotterdam Applicability
Milan (IT)	Milan Urban Food Policy Pact (MUFPP, 2015); school food reform led by Expo 2015 legacy	30% increase in legume/vegetable consumption in schools; food waste reduced 22% (MUFPP Progress Report 2022)	High — Milan has comparable size, diversity and school food infrastructure
Barcelona (ES)	Estratègia Alimentària 2021; proximity procurement mandate; Agroecosistema scheme	Local food procurement +40%; Med-Diet aligned school menus in 85% of public schools (Ajuntament de Barcelona, 2022)	High — strong policy framework and EU funding alignment precedent
Ghent (BE)	Thursday Veggie Day (since 2009); Voedselteam cooperative network	Plant-based meal choice normalised across city institutions; 25% reduction in animal protein in school meals (Stad Gent evaluation, 2020)	High — Ghent is geographically, demographically and politically comparable to Rotterdam

City	Policy Instrument	Key Outcome	Rotterdam Applicability
Marseille (FR)	Plan Alimentaire Territorial 2021–2026; Cuisine du Panier kitchen network; ANRU food district	14 community kitchens operational by 2023; 8,000 meals/week in food-vulnerable quartiers; cultural food integration documented (Métropole Aix-Marseille-Provence, 2021)	Very High — Marseille shares Rotterdam's port city, migrant diversity, post-industrial districts and food fragmentation profile

Sources: MUFPP Annual Report and Monitoring Framework 2022; Ajuntament de Barcelona, Avaluació Estratègia Alimentària 2022; Stad Gent, Gentse Donderdag Evaluatie 2020; Métropole Aix-Marseille-Provence, Plan Alimentaire Territorial 2021–2026.

> *"Marseille is the proof of concept. A city as diverse, as economically stratified, as geographically complex as Rotterdam — and it built a Mediterranean food culture policy that works. The tool was not cuisine. It was community infrastructure." — Solco Research Note*

CHAPTER 06

Dietary Patterns, Health Inequity & Urban Poverty

The data behind the urgency.

6.1 Rotterdam's Health Burden

Data from **GGD Rotterdam-Rijnmond** (the regional public health authority) and **RIVM** (National Institute for Public Health) paint a clear picture: Rotterdam's population suffers from diet-related disease rates significantly above Dutch national averages.

Health Indicator	Rotterdam %	Netherlands %	Excess Burden
Adult overweight (BMI >25)	54.2%	49.7%	+4.5 pp
Adult obesity (BMI >30)	18.8%	14.9%	+3.9 pp
Type-2 diabetes prevalence	8.9%	6.7%	+2.2 pp
Cardiovascular disease mortality	312/100k	264/100k	+18%
Children overweight (4–12 years)	21.3%	15.2%	+6.1 pp
Low fruit/vegetable consumption	67.4%	55.8%	+11.6 pp
High processed food consumption	58.9%	44.2%	+14.7 pp
Food insecurity (past 12 months)	13.1%	6.4%	+6.7 pp

Sources: GGD Rotterdam-Rijnmond, Gezondheidsmonitor Volwassenen en Ouderen 2022 (tabellenboek, overgewicht/obesitas, ervaren gezondheid en chronische aandoeningen sections; available via gezondheidinkaart.nl); RIVM, vzinfo.nl, hart-en-vaatziekten regionaal (interactive map, data 2020–2023); CBS, Gezondheidsenquête 2022 (food insecurity proxy via ervaren gezondheid en armoede indicators, CBS StatLine dataset 85563NED). ***Note: the Gezondheidsmonitor publishes data in a tabellenboek by theme, not in numbered tables; original draft table references (Tables 3.1, 4.2, 6.1; Table 5.3) have been removed as unverified. Data are available via the interactive portals cited above.***

Solco estimates annual diet-attributable healthcare costs in Rotterdam exceed €300M, based on RIVM cost-of-illness methodology adjusted for Rotterdam's excess disease burden (central estimate; range €280M–€420M).

18%
Excess cardiovascular mortality

21%
Children overweight rate

85k
People in food poverty

6.2 The Geography of Dietary Inequality

Health inequalities in Rotterdam are not randomly distributed. They follow a clear spatial and socioeconomic pattern, concentrated in the city's southern and western districts. Research by **GGD Rotterdam-Rijnmond** and **CBS Buurtmonitor** data consistently show that postcode area is among the strongest predictors of health outcomes in Rotterdam, with food environment factors (proximity to fresh food retail, density of fast-food outlets, pricing) identified as primary structural drivers of dietary inequality (GGD Rotterdam-Rijnmond, Gezondheidsmonitor Volwassenen en Ouderen 2022; CBS Gezondheid in Kaart, gezondheidinkaart.nl).

Districts with the highest food vulnerability scores — Feijenoord, Delfshaven, IJsselmonde — share several characteristics: higher density of fast-food outlets relative to fresh produce retailers; lower presence of organic or specialty food shops; greater distance to farmers' markets; and lower rates of urban agriculture participation (GGD Rotterdam-Rijnmond, Gezondheidsmonitor 2022, district-level analysis).

RESEARCH CONTEXT

Postcode as Dietary Destiny

GGD Rotterdam-Rijnmond Gezondheidsmonitor data (2022, available via gezondheidinkaart.nl) shows significant variation in overweight rates, chronic disease burden and self-reported health across Rotterdam districts. Feijenoord, Delfshaven and IJsselmonde consistently record worse outcomes than Kralingen-Crooswijk and Centrum. No published study has yet directly mapped Mediterranean Diet Adherence Score (MEDAS) values to Rotterdam postcode level. Applying MEDAS-based measurement as a food policy instrument to Rotterdam's most food-vulnerable districts is one of the primary recommendations of this study (see Recommendation R2).

6.3 Economic Barriers and Opportunities

A common misconception holds that healthy diets — and Mediterranean diets in particular — are necessarily more expensive than processed food alternatives. This assumption drives policy inertia and undermines food equity arguments. The evidence tells a more nuanced story.

The **Voedingscentrum** (Netherlands Nutrition Centre, *Kosten van een gezond voedingspatroon in Nederland*, 2022) found that the **price premium for a Mediterranean diet versus a standard Dutch diet is largely determined by protein source**: if Mediterranean protein comes from fish and quality meat, costs rise; if it comes from legumes, eggs and modest dairy, costs *fall*. The study estimated that a legume-forward Mediterranean diet basket is **12–18% cheaper** than the average Dutch household diet per nutrient unit — a finding consistent with earlier modelling by the **RIVM** (*Wat is een gezond voedingspatroon?*, 2021, p. 34).

This finding is crucial for Rotterdam's food policy context: the Mediterranean diet is not a luxury if properly translated. The barriers are not economic but **structural** — availability, literacy, cooking infrastructure and social norms — all of which are addressable through policy.

CHAPTER 07

The Mediterranean Diet & Rotterdam's Communities

The convergence already exists. Policy needs to see it.

Chapter 4 established the theoretical case for cultural translatability. This chapter makes it concrete — not through mapping exercises but through the actual logic of ingredients, of preparation, of what people cook when no one is watching and no nutritionist is counting MEDAS points.

The argument is this: the communities of Delfshaven, Feijenoord and IJsselmonde do not need to be *taught* the Mediterranean diet. In their kitchens, in their markets, in the food memory they carry from Morocco, Turkey, Suriname, Cape Verde and South Asia, the Mediterranean dietary logic is already present — often more intact than in the kitchens of the Dutch-heritage population that has been most thoroughly processed by the industrial food system. What policy needs to do is not introduce something foreign. It needs to *recognise* something that already exists, and build the institutional conditions that allow it to survive and thrive in an urban Northern European context.

7.1 The Legume — Where Every Tradition Converges

Begin with the legume. It is the single most important nutritional building block of the Mediterranean diet — the primary plant protein, the source of fibre, iron, zinc, folate, the ingredient that made it possible for populations without reliable access to meat to remain healthy across millennia. It is also, not coincidentally, the ingredient at the heart of nearly every culinary tradition represented in Rotterdam.

In Puglia — the Italian region that represents perhaps the most documented living archive of Mediterranean dietary practice — legumes were never a food choice. They were the food of structural necessity, refined over centuries into extraordinary diversity. The **cece nero della Murgia Carsica** (black chickpea of the Karst Murgia) was for generations the primary protein of the rural poor: drought-resistant, requiring no irrigation, sown in October and harvested in July, prescribed to new mothers and pregnant women because communities understood without clinical vocabulary that it was rich in iron and fibre. The **fava di Carpino** from the Gargano was the backbone of winter nutrition across Capitanata — its production was so central that the soil itself was organised around it, grown in rotation with durum wheat, fixing nitrogen back into the earth, closing the cycle perfectly. The **lenticchia di Altamura** was exported in the 1930s to Germany, Canada and the United States, a commodity in international trade, before industrial agriculture nearly erased it.

These are not curiosities. They are evidence that the legume as primary protein — not as a side dish or a poverty substitute — was a sophisticated, ecologically intelligent, nutritionally sound food system. It worked. It fed populations for centuries in conditions far harsher than those of contemporary Rotterdam.

And here is what makes Rotterdam remarkable: walk into a Moroccan grocery in Delfshaven, and you will find dried chickpeas — *hummus* in Arabic, a word that appears in texts from the 13th century onwards, the same legume that Horace mentioned Romans frying in olive oil. Walk into a Turkish market in Feijenoord, and you will find red lentils (*k■rm■z■ mercimek*), the base of mercimek çorbas■, a soup eaten across Turkey with the same structural logic as the Apulian chickpea soup: legume, water, olive oil, aromatic herbs. Walk into a Surinamese shop and you will find split yellow peas for *dhal*, a dish whose logic — legume slow-cooked to a thick, nourishing consistency, served with grain — is structurally identical to the Apulian *fave e cicorie* or the Sicilian maccu. The Cape Verdean *cachupa* — corn, beans, vegetables, occasional fish — is structurally a Mediterranean poor stew, the same logic that appears in Provençal soupe au pistou, in Catalan escudella, in Calabrian minestra.

This is not coincidence. It is the convergent evolution of food systems that faced the same constraint: how to nourish a family adequately when meat is expensive and seasonal vegetables are abundant. The Mediterranean diet formalised this logic and gave it scientific validation. But the logic itself belongs to no single culture. **It belongs to anyone who has ever had to eat intelligently with limited resources.** That is a significant fraction of Rotterdam's population.

> *"The artichoke comes from the Arabic karshuf. The word lemon from the Persian limu. The word carrot from the Greek karoton. The word spinach from the Persian aspanakh. The Mediterranean diet was never one culture's invention. It was always a shared accumulation." — Antonio Caso, A Small Bite of Puglia (2019)*

7.2 Community by Community — The Convergence in Detail

The table below maps the major cultural food communities of Rotterdam against Mediterranean dietary principles — not to score them, but to identify the specific ingredients, practices and traditions that already constitute a bridge. The policy implication follows from the mapping, not the other way around.

Community	Est. Pop.	Existing Med-Diet Elements	Primary Risk Factors	Policy Entry Points
Moroccan-Dutch	~90,000	Chickpea soups (harira), ful medames, couscous from semolina, olive oil as primary fat, preserved lemons, fresh herbs (coriander, parsley, mint), abundant seasonal vegetables, shared meal culture, Ramadan fasting rhythms	Second-generation shift toward processed snacks and sugar drinks; bread quality (refined vs whole)	Harira as flagship Med-Diet recipe in school and community kitchen programmes; Ramadan nutrition partnership; ethnic market as supply chain anchor
Turkish-Dutch	~50,000	Meze culture (shared small dishes of vegetables, legumes, yoghurt), mercimek (red lentil soup), nohut (chickpea dishes), olive oil, seasonal vegetables, bulgur and whole grains, shared table as social institution	Higher red meat consumption than optimal; white bread dominance; younger generations and fast food	Meze as the model format for Med-Diet community meals; bulgur pilot in school food; engagement via mosque community structures
Surinamese-Dutch	~65,000	Dhal (split pea, a structural twin of fave e cicorie), roti made with whole flour, vegetable curries using abundant spices, minimal processed food in traditional cooking, moksi alesi (rice and legume dish)	Urban adaptation toward processed food; sugary drinks; loss of traditional cooking practices in younger generation	Dhal as the entry point — nutritionally identical to Med-Diet legume dishes; cooking workshop format preserving intergenerational knowledge
Cape Verdean-Dutch	~25,000	Cachupa (slow-cooked corn, beans, vegetables, sometimes fish or meat) — structurally a Mediterranean poor stew; fresh fish culture; seasonal eating; communal food preparation	Limited institutional recognition of Cape Verdean food culture; isolation from mainstream food policy	Cachupa as case study for legume-grain integration in school menus; Cape Verdean community kitchen as pilot site
South Asian-Dutch	~30,000	Lentil-based dishes across multiple traditions (dal, masoor, chana), abundant use of seasonal vegetables, whole spices, plant protein dominance in vegetarian traditions, yoghurt	Higher processed food in younger generations; dietary transitions between generations	Dal as Mediterranean legume equivalent; spice culture as bridge to herb-forward Med-Diet cooking
Dutch-heritage	~310,000	Some dairy, bread, potatoes, vegetables; historical tradition of stamppot (legume and vegetable mash) has Med-Diet structural logic	Highest processed food consumption; highest red meat; lowest legume intake; most thoroughly industrial diet of any group	School food as primary lever; bread reform (whole grain); stamppot revival as culturally resonant legume entry point

7.3 The Etymology of Convergence

There is a deeper argument embedded in the ingredient map above, and it is worth making explicit because it goes to the heart of why this policy approach is not cultural imposition.

The word *artichoke* comes from the Arabic *karshuf*. The Arabs began cultivating it around the 4th century BC, and it arrived in Puglia — now Italy's first producer — through a cultural chain that runs from the Middle East through the Arab world through the medieval Mediterranean. The word *lemon* comes from the Persian *limu*. The word *spinach* comes from the Persian *aspanakh*, arriving in Europe through Arab agricultural science. The word *carrot* comes from the Greek *karoton*, and the Polignano carrot — grown in the sandy soils of coastal Puglia with brackish water — is an ecotype whose cultivation predates the standardisation of the orange carrot by Dutch farmers in the 17th century. The Apulian *carosello* — a cucurbit eaten unripe, cooler and more digestible than cucumber — is mentioned in documents from 1608 and found in near-identical form in the cuisines of Turkey, Syria and Lebanon, where it is eaten in the same way.

The point is not botanical. The point is that the ingredients of the Mediterranean diet were never the property of any single culture. They were assembled over millennia through trade, migration, agricultural exchange, and the shared logic of hot-climate, low-protein farming. When a Moroccan grandmother in Delfshaven cooks *harira* with chickpeas, tomatoes, coriander and lemon, she is not approximating the Mediterranean diet. She *is* the Mediterranean diet — or rather, she embodies one of its living branches, equally ancient and equally valid as the Pugliese who cooks the same legume in olive oil with pasta.

POLICY IMPLICATION

Recognition, Not Instruction

The practical consequence of this analysis is precise: a Mediterranean food policy for Rotterdam must be designed as a recognition programme, not a nutrition education programme. Its first act should be a formal mapping of existing food practices across communities — not to measure their deviation from a dietary ideal, but to document their alignment with it. That mapping becomes the evidence base for a food policy built from what already exists, rather than from what planners wish existed.

7.4 The Ethnic Food Market Network

Rotterdam has one of the Netherlands' richest networks of ethnic food markets and specialty grocers — concentrated in Delfshaven, around the Markthal/Blaak area, along West-Kruiskade and in Feijenoord. These markets, largely serving Moroccan, Turkish, Surinamese and Cape Verdean communities, **already stock the complete ingredient palette of a Mediterranean diet**: dried legumes in dozens of varieties, whole grains, olive oil, preserved vegetables, fresh herbs and aromatics, seasonal produce at significantly lower prices than mainstream retail.

A **Solco field survey (March 2026)** identified **47 ethnic specialty grocery stores and food vendors** in Rotterdam's Delfshaven, Feijenoord, West-Kruiskade and Blaak areas stocking Mediterranean-compatible staples — including Turkish, Moroccan, Surinamese and South Asian grocers selling dried legumes, whole grains, olive oil and seasonal produce. This figure does not include large-format supermarkets or mainstream retail. Prices were found to be 20–35% lower than mainstream supermarkets for equivalent nutritional value (methodology available on request). These are not peripheral food access points. They are the most under-recognised infrastructure asset in Rotterdam's food system. A Moroccan grocer in Delfshaven selling dried chickpeas and preserved lemons is already running, without any institutional support, the most nutritionally efficient food supply chain in the neighbourhood.

Yet these businesses remain entirely outside Rotterdam's food procurement framework. No school supply contract. No hospital catering agreement. No formal quality recognition. The recommendation in Chapter 8 (R4) addresses this directly — but the argument for doing so is not efficiency. It is justice. These businesses have maintained a Mediterranean food supply for their communities without policy support. Integrating them into the institutional food supply chain would simultaneously improve nutritional quality, reduce costs, support minority-owned businesses, and close the gap between what Rotterdam's food policy says it values and what it actually funds.

7.5 What the Kitchens Already Know

There is one more dimension of this convergence that data cannot capture but policy must acknowledge: the knowledge held in home kitchens.

Across Rotterdam's diverse communities, there are thousands of people who know how to cook legumes from scratch — who know that a Carpino-style fava needs soaking overnight, that a lentil soup deepens with a long simmer, that the right olive oil transforms a simple chickpea into something worth eating. This knowledge is not in cookbooks. It is transmitted in kitchens, from grandmothers to daughters, from neighbours to neighbours, across language barriers and cultural differences, through the shared experience of feeding a family well with modest means.

Industrial food culture actively erodes this knowledge. Every generation raised primarily on processed food loses another layer of it. The community kitchen programme proposed in Recommendation R2 is not primarily a nutrition intervention. It is a **knowledge preservation and transmission infrastructure** — a way of keeping alive the dietary intelligence that the Mediterranean diet, in all its cultural forms, has accumulated over millennia. Rotterdam already has the people who carry this knowledge. Policy needs to give them a room, a kitchen, and an institutional reason to share it.

CHAPTER 08

Strategic Recommendations

Six policy actions for Rotterdam — evidence-based and actionable.

The following six recommendations are presented in order of implementation priority. Each is grounded in the evidence presented in previous chapters, mapped to Rotterdam's existing policy framework (Food Vision 2030), and designed to be fundable through a combination of municipal budget, European structural funds (ESF+, ERDF), Erasmus+ and Horizon Europe programmes.

R1

Adopt a Mediterranean Diet Policy Anchor

Formally integrate the Mediterranean diet — defined by its structural principles, not its geography — as the nutritional framework underlying Rotterdam's Food Vision 2030. This requires amending the Food Vision document, commissioning a MEDAS baseline measurement for Rotterdam, and establishing a cross-departmental working group to align public health, education, procurement and culture policy under a single dietary framework. Estimated cost: €50,000–€80,000 (policy integration process).

R2

Launch a Mediterranean Community Kitchen Network

Create a city-supported network of 8–12 community kitchens in high food-vulnerability districts (Feijenoord, Delfshaven, IJsselmonde, Noord), using Marseille's Cuisine du Panier as the implementation model. Kitchens to serve a minimum of 200 meals/week each within 18 months, with menus designed around Mediterranean principles interpreted through community food cultures. Target: 12,000 meals/week city-wide within 3 years. Estimated cost: €600,000–€900,000 (initial capital + €300k/year running, partially recoverable through meal sales).

R3

Reform School Food Policy Around Mediterranean Principles

Implement a Mediterranean-aligned school food reform in all 240+ Rotterdam primary schools over a 3-year phased rollout. Reform includes: revised menu guidelines; procurement shift toward legumes, seasonal vegetables and whole grains; Mediterranean food literacy curriculum (2 hours/month, integrated into biology and citizenship); and chef training programme. Model: Barcelona school food reform 2017–2022. Estimated cost: €1.2M–€1.8M over 3 years (primarily procurement transition and training).

R4

Build an Ethnic Market Procurement Partnership

Establish a formal procurement partnership between Rotterdam's ethnic food market network and public food institutions (schools, hospitals, sports facilities, social care). Create a quality certification scheme for markets meeting Mediterranean-compatible supply standards. Provide logistics support and financial incentives for producers and markets participating. This simultaneously reduces costs, improves food quality, and strengthens the economic viability of minority food businesses. Estimated cost: €200,000 (setup) + €150,000/year.

R5

Introduce a Mediterranean Food Literacy Programme for Adults

Design and deliver a structured food literacy programme targeted at adults in high-vulnerability districts, using a format adapted from Solco's existing food coaching methodology and the EMBRACE European project model. Programme delivered through existing community health networks, libraries and neighbourhood centres. 12-session format; multi-language delivery (Arabic, Turkish, Papiamento, Tigrinya, Dutch). Target: 5,000 participants in Year 1; 15,000 by Year 3. Estimated cost: €250,000/year.

R6

Position Rotterdam in the Milan Urban Food Policy Pact

Rotterdam is not currently a signatory to the Milan Urban Food Policy Pact (MUFPP), the world's leading network of cities committed to sustainable food system transformation, with 220 member cities. Joining the MUFPP would: (a) provide Rotterdam access to best-practice data and city-to-city learning; (b) align Rotterdam's food policy with international standards; (c) strengthen applications for European funding (the MUFPP is explicitly referenced in ESF+ and ERDF food system investment frameworks). Cost: minimal (membership + coordination role).

8.1 Investment Summary

Recommendation	Timeline	Estimated Cost	Primary Funding Source
R1: Policy Anchor	Year 1	€50,000–€80,000	Municipal budget
R2: Community Kitchen Network	Years 1–3	€600,000–€900,000 + €300k/yr	ESF+, municipal, social enterprise
R3: School Food Reform	Years 1–3	€1.2M–€1.8M over 3 years	Municipal + Erasmus+ KA220
R4: Ethnic Market Partnership	Year 1–2	€200,000 + €150,000/yr	ERDF, municipal business support
R5: Food Literacy Programme	Year 1 onward	€250,000/year	ESF+, public health budget
R6: MUFPP Membership	Year 1 (immediate)	Minimal (<€20,000)	Municipal

Recommendation	Timeline	Estimated Cost	Primary Funding Source
TOTAL (3-year horizon)		€3.5M–€5.2M	60–70% coverable by EU structural funds

EU FUNDING NOTE

European Alignment

All six recommendations have been designed with EU funding eligibility in mind. R2 and R5 align with ESF+ Priority 4 (Social Innovation & Food) and the European Social Fund food security axis. R3 aligns with Erasmus+ KA220-SCH (school innovation partnerships). R4 aligns with ERDF Cohesion Fund and LEADER/CLLD food system investment. R6 MUFPP membership directly strengthens all EU food fund applications.

CHAPTER 09

Implementation Roadmap 2026–2030

Four phases, twelve milestones, one coherent system.

The implementation of Rotterdam's Mediterranean food policy is proposed as a four-phase programme running from 2026 to 2030, with a formal mid-point review in 2028 and outcome evaluation in 2030.

Phase	Period	Focus	Key Milestones
Phase 1: Foundation	2026 Q1–Q4	Policy integration & baseline measurement	1. Formal Food Vision amendment (R1) 2. MEDAS baseline survey (3 districts) 3. MUFPP membership application (R6) 4. Ethnic market network mapping (R4 prep)
Phase 2: Pilot	2027 Q1–Q4	First community kitchens & school pilots	5. 3 community kitchens operational (R2) 6. School food pilot in 30 schools (R3) 7. Food literacy cohort 1 — 1,500 adults (R5) 8. Ethnic market procurement MOU signed (R4)
Phase 3: Scale	2028–2029	System-wide rollout & EU fund activation	9. 10 community kitchens operational 10. School reform in 240+ schools 11. 10,000 adults through food literacy 12. ESF+ programme launched (5-year)
Phase 4: Embed	2030	Evaluation, institutionalisation & leadership	13. MEDAS impact measurement (vs. 2026 baseline) 14. MUFPP good practice report 15. Rotterdam as Northern European Med-Diet reference city

9.1 Governance Architecture

Successful implementation requires a **dedicated governance structure** that bridges existing municipal departments, the Voedselraad, and external partners. This study proposes the following architecture:

Mediterranean Food Policy Coordinator — a dedicated municipal role (0.8 FTE), housed within the Public Health department with formal reporting lines to Urban Planning and Education. Responsible for cross-departmental coordination and external partnership management.

Implementation Consortium — a formal partnership between Gemeente Rotterdam, Voedselraad Rotterdam, GGD Rotterdam-Rijnmond, Erasmus MC, and a designated food system NGO (e.g. Solco or equivalent). The consortium holds implementation responsibility, distributes EU funds, and manages reporting obligations.

Community Advisory Network — a structured engagement process with representatives of Rotterdam's major cultural food communities, meeting quarterly to provide cultural guidance, co-design elements and feedback on implementation.

9.2 Monitoring & Evaluation Framework

Progress will be tracked through five key indicators, measured at baseline (2026) and annually thereafter:

Indicator	Baseline (est.)	Target 2028	Target 2030	Source
Mean MEDAS score (Rotterdam)	4.1/14	5.0/14	6.2/14	Household survey, GGD
School meals meeting Med-Diet criteria	12%	45%	80%	School food audit
Community kitchen meals/week	0 (programme)	3,000	12,000	Programme monitoring
Adults completed food literacy	0 (programme)	3,000	15,000	Programme tracking
Cardiovascular disease mortality rate gap vs NL avg.	+18%	+12%	+6%	RIVM annual data

CHAPTER 10

Conclusion

A city that understands its food understands itself.

Rotterdam is, in the best sense, a city of contradictions. It is the gateway to Europe and a neighbourhood kitchen in Feijenoord. It is the most technologically advanced port in the world and a family in IJsselmonde choosing between fresh vegetables and a discount ready meal. It is a city that builds floating farms on the Maas and loses 300 residents per year to diet-related cardiovascular disease in its southern districts.

These contradictions are not irresolvable. They are, in fact, exactly the kind of productive tension that the Mediterranean diet — at its best — has always navigated. The Mediterranean diet was not invented by nutritionists. It evolved, over millennia, in poor coastal and agricultural communities that had limited resources and high biological intelligence about how to use them. It is, structurally, a diet of creative constraint, seasonal adaptation and social solidarity. Rotterdam, in 2026, needs exactly those qualities in its food policy.

> *"The Mediterranean diet is not a solution Rotterdam needs to import. It is a principle Rotterdam needs to recognise — in its own markets, its own communities, its own history of feeding a working city."*

This study has established five core conclusions:

1. **The need is real and urgent.** Rotterdam's diet-related health burden — 18% excess cardiovascular mortality, 21% childhood overweight — is not a natural inevitability. It is the predictable outcome of a food environment and food policy that lacks coherence, nutritional grounding and cultural sensitivity.

2. **The framework is available and validated.** The Mediterranean diet is among the most robustly evidenced dietary frameworks in existence, and its structural principles are directly applicable to urban food policy. The evidence is not contested.

3. **The cultural conditions exist.** The misconception that a Mediterranean diet is foreign to Rotterdam's diverse communities is demonstrably wrong. The city's Moroccan, Turkish, Surinamese, Cape Verdean and South Asian communities already eat, or have the cultural knowledge to eat, in ways profoundly aligned with Mediterranean dietary principles. Policy must affirm and resource this, not replace it.

4. **The infrastructure is present.** Rotterdam has community kitchens, ethnic food markets, urban farms, school food programmes and an active Voedselraad. What it lacks is an organising principle that connects them. This study proposes the Mediterranean diet as that principle.

5. **The funding is accessible.** European structural funds — ESF+, ERDF, Erasmus+ — are specifically designed for exactly the kind of food system transformation this study proposes. Rotterdam has the institutional capacity to access them; it requires only the policy framework to make the applications coherent.

An Offer — from Solco

Beyond the study

This report is an analytical contribution, but it is also a direct proposal. Solco offers to work alongside Rotterdam's food governance bodies — the Voedselraad, the municipality, GGD, Erasmus MC — in translating this framework into concrete implementation. Our offer includes:

• **Policy design support**: translating recommendations into municipal food policy language, aligned with Food Vision 2030
• **European project design**: writing Erasmus+ and ESF+ applications to fund community kitchen and school food programmes
• **Community engagement facilitation**: designing and running intercultural food policy co-design processes
• **Monitoring framework implementation**: deploying the MEDAS measurement protocol across Rotterdam districts
• **Research partnership**: joint publication of findings in peer-reviewed food policy literature

Solfood Studio — is a professional association founded by Dr. Antonio Caso, with 12+ years of experience in food system strategy across Italy, the Mediterranean basin and Northern Europe. We have designed and implemented European food projects in over 10 countries, advised municipalities and regional governments on agri-food strategy, and built the research capacity to bridge field-level knowledge with institutional policy.

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About This Document

Methodological Note — Solco Analysis vs. Cited Data

This document distinguishes between two categories of information: (1) **cited data**, drawn from named primary sources as referenced above, and (2) **Solco analysis** — original analytical constructs including composite indicators (Food Vulnerability Index, district-level food asset mapping), investment estimates (R1–R6 cost ranges), and strategic recommendations. Composite indicators and investment estimates are Solco analytical constructs informed by the cited literature but not directly derived from any single published source. They should be treated as expert assessments, not as empirical measurements. Where a table footnote reads 'Solco analysis' or 'composite indicator', this distinction applies.

This is a concept study produced independently by Solfood Studio (Professional Association for Food Strategy and Territorial Development). It is not a commissioned report by the Municipality of Rotterdam or any Dutch public authority. All data cited is drawn from publicly available sources as referenced above. The study is offered as a contribution to the urban food policy debate and as a direct proposal for institutional partnership. Reproduction permitted with attribution.

ANNEX

The Living Mediterranean

Apulian biodiversity as proof of concept — what a real Mediterranean food system looks like.

This annex exists to answer a question that a Dutch food policy professional is entitled to ask: is the Mediterranean diet, as described in this study, a real thing? Or is it a nutritional abstraction — a scoring system invented in clinical trials, disconnected from any actual food culture?

The answer is: it is entirely real. And one of the places where it is most documentably, most densely, most historically real is Puglia — the Italian region where this study's author was born and raised, and from which the field intelligence underpinning much of this report is drawn.

What follows is not a catalogue of regional products for tourism purposes. It is a structured argument, using Puglia's documented food biodiversity as evidence that the Mediterranean dietary framework — legumes as primary protein, ancient grain varieties, drought-resilient crops, seasonal vegetables, olive oil, minimal processing, shared meal culture — is not a design concept. It is a survival system, refined over millennia, still alive in seeds and soils and kitchen practices, and directly relevant to the food policy challenges Rotterdam faces in 2026.

A.1 The Legume System — Deep Documentation of a Protein Architecture

The Mediterranean diet's dependence on legumes as primary protein is not a nutritional recommendation. It is a historical fact. In Puglia, this fact is documented with unusual depth and specificity — not in academic papers alone, but in living production, in Slow Food presidia, in etymologies, in the cultivation practices of communities that never stopped growing these crops even when industrialisation made it economically irrational to do so.

Product	Territory	Historical Significance	Nutritional Role	Climate Relevance
Black Chickpea of the Murgia Carsica (Cece nero)	Alta Murgia, Bari province	Primary protein of rural poor for centuries; prescribed to pregnant women and new mothers by community tradition; sown October, harvested July with no irrigation	High iron, fibre, protein; low glycaemic index; richer micronutrient profile than commercial chickpea	Extreme drought resistance; grows on calcareous karst soils with zero irrigation; ideal for climate-stressed agriculture
Black Chickpea of Muro Leccese	Salento, Lecce province	Identical cultural role to Murgia variant; Slow Food Presidium; near-extinction in 1970s, recovered through community initiative	Same nutritional profile; distinct organoleptic characteristics from different soil chemistry	Drought-resistant ecotype; adapted to sandy calcareous soils; models resilience under desertification pressure
Fava di Carpino (Carpino broad bean)	Gargano promontory, Foggia province	Backbone of Capitanata winter nutrition; grown in rotation with durum wheat, fixing nitrogen; survived through 2 farmers on 4 hectares before recovery; taken into space by Samantha Cristoforetti	Complete protein with complementary amino acids when eaten with grain; high folate, iron, zinc	Nitrogen-fixing: improves soil without chemical inputs; adapted to calcareous clay; model crop for low-input sustainable farming
Fava di Zollino	Grecìa Salentina, Lecce province	Ancient variety documented to Messapic period; cultivated exclusively with traditional techniques; basis of fave e foje (fava and chicory), one of the most nutritionally complete dishes in Mediterranean cuisine	High protein and fibre; uniquely remains intact after cooking — different starch structure from commercial varieties	Traditional cultivation requires no chemical inputs; Slow Food Ark of Taste

Product	Territory	Historical Significance	Nutritional Role	Climate Relevance
Lenticchia di Altamura (Altamura lentil)	Alta Murgia, Bari/Matera border	PGI protected; exported to Germany, Canada and USA in the 1930s; near-extinction by 1970s; now 200 hectares under cultivation; Slow Food Ark of Taste	Largest green lentil variety in Italy; exceptional protein-to-calorie ratio; richer in polyphenols than commercial varieties	Grows on shallow, stony soils; minimal water requirement; historically successful in northern European export markets — including Germany
Bean of Carpino / Zollino beans / Salento beans / Southern Dauni bean	Gargano, Salento, Sub-Apennine Daunia	Multiple native varieties cultivated since Etruscan period; beans as primary protein across Foggia area documented in proverbs and community practice; traditionally cooked in earthenware pots	High digestibility due to thin skin; low-glycaemic; high fibre and plant protein	Low water requirements; adapted to marginal soils; no irrigation needed in Salento production
Peas of Sannicola, Vitigliano, Zollino	Salento, Lecce province	Three distinct ecotypes in a 30km radius; Sannicola pea was a major export crop to Naples and Rome until the 1980s; Vitigliano pea requires no soaking before cooking	Plant protein; high vitamins; fresh or dried use; easily digestible	Adapted to rocky coastal soils; salt-wind resistant; cultivated without irrigation on marginal terrain

Sources: Caso A., A Small Bite of Puglia (2019); Slow Food Foundation, Ark of Taste; Ministero delle Politiche Agricole, Atlante dei Prodotti Tipici Agroalimentari di Puglia (2006); CNR Institute of Plant Genetics, Bari.

> *"Capitanata has always been considered one of the most suitable territories for the production of legumes, and these have, since time immemorial, been the main source of protein for farmers in the area." — A Small Bite of Puglia (2019)*

A.2 Ancient Varieties and Climate Resilience — A Policy Argument

Rotterdam's Food Vision 2030 identifies sustainability and ecological transition as a core pillar of its food strategy. This is where the Apulian biodiversity argument becomes directly relevant — not as nostalgia but as agronomic intelligence.

Puglia's ancient food varieties were not preserved for sentimental reasons. They survived because they had properties that industrial varieties lacked: resistance to drought, salinity, cold, poor soils. These are precisely the conditions that climate change is now creating across Southern Europe — and beginning to create, in different forms, across Northern Europe as well. The agronomic wisdom encoded in these varieties is a resource, not an artefact.

Variety	Resilience Property	Scientific Basis	Policy Relevance
Polignano Carrot (purple/yellow ecotype)	Grows in brackish water from coastal artesian wells; thrives in sandy soils unsuitable for commercial crops	Lower sugar content than commercial carrot despite similar sweetness perception; 22% lower glucose/fructose; adapted to salt-stress conditions (Cefola et al., Italian Journal of Food Science, 2012)	Model crop for climate-adapted urban agriculture; brackish irrigation resistance relevant to coastal cities including Rotterdam delta context
Fiaschetto Tomato of Torre Guaceto	Grows under dryland conditions with brackish irrigation; tolerance to Tomato Spotted Wilt Virus (TSWV)	TSWV resistance studied by University of Bari; sour-salty flavour from coastal salinity; preservation possible through natural drying — no refrigeration needed	Climate-resilient food production model; low-input supply chain; natural preservation reduces cold chain dependency
Regina Tomato of Torre Canne	Dryland cultivation; brackish water irrigation; thick skin for extended storage; hung and preserved until April without refrigeration	Slow Food Presidium with organic cultivation specification; preservation technique documented since 18th century; cotton thread preservation system eliminates packaging waste	Zero-waste preservation model; extreme shelf-life without industrial processing; case study for low-carbon food storage
Limoncella Apple of the Southern Dauni Mountains	Frost-resistant; stores without refrigeration until February; low fertiliser inputs; survives mountainous terrain	First described 1819; climate-resilient cultivar of Southern Apennines; cold-hardy compared to commercial apple varieties	Model for climate-adapted fruit production in Northern Europe; low-input agriculture; long natural shelf life reduces food waste
Femminello Lemon of the Gargano (PGI)	4–5 flowering cycles per year — exceptional productivity; centuries-old trees still producing; described in 17th century trade documents	One of oldest Italian lemon varieties; PGI since 2007; Slow Food Presidium; traded to Venice and America in 17th century from same trees still in production	Longevity and multi-harvest capacity as model for sustainable citrus in changing European climate

The common thread across all these varieties is a principle that modern agronomy is rediscovering under the language of climate resilience: **crops bred under constraint are more resilient than crops bred under abundance**. The industrial food system optimised for yield, standardisation and shelf-life under ideal conditions. Ancient varieties optimised for survival under difficult ones. As climate conditions become less predictable, the second set of properties becomes more valuable — agronomically, economically, and as a model for food policy.

A.3 The Cultural Stratification of the Mediterranean Diet — Against Monoculture

One of the most important arguments this annex makes for the Rotterdam food policy context is this: the Mediterranean diet, as it actually exists in a place like Puglia, is not a monoculture. It is the product of at least ten distinct cultural layers, each of which contributed ingredients, techniques and practices that became indistinguishable from the local tradition.

Consider the etymology alone. The word *artichoke* — Puglia's most important vegetable crop, grown primarily in Foggia, Brindisi, Bari and Taranto — comes from the Arabic *karshuf*, the language of the people who first cultivated it around the 4th century BC. The artichoke arrived in Puglia through the Arab agricultural tradition of the medieval Mediterranean. The Brindisi artichoke (IGP since 2011) is now considered quintessentially Apulian — but it carries an Arabic name in every European language.

The *carosello* — a cucurbit eaten unripe as a cucumber substitute, documented in Puglia since 1608 — exists in near-identical form in Turkey, Syria and Lebanon. The *cupeta*, a traditional Apulian almond sweet present in documents from 1480, takes its name from the Arabic *qubbiat* (made of almonds) and likely arrived through Frederick II's Moorish court in 13th-century Puglia. The *farinella* of Putignano — a toasted barley and chickpea flour, the field food of Apulian peasants for centuries — is structurally identical to the North African *kessra* and the Moroccan *sellou*. The Gargano lemon groves, producing since the 7th century when Saracen traders planted the first citrus along the promontory coast, were supplying Venice and America by the 17th century — from trees that are still producing today.

The *pettole* — fried leavened dough balls eaten at Christmas, Carnival and St Martin's Day across Puglia — are called *petullat* in Albania, 71 kilometres across the Adriatic. The same sweet exists in Naples as *struffoli*, in Greece as *loukoumades*, in Andalusia as *piñonate*. The *purceddhuzzi* of Taranto and Salento are the same food as a dozen different names across the Mediterranean arc.

This is not a footnote. This is the argument. **The Mediterranean diet is already multicultural at its point of origin.** It was never the property of a single ethnic group — it was always the accumulated result of trade, migration, exchange and ecological convergence across the full arc of the Mediterranean basin. When Rotterdam's Moroccan, Turkish, Surinamese and Cape Verdean communities cook their traditional foods, they are not cooking something foreign to the Mediterranean diet. They are cooking branches of the same tree — branches that grew independently but from the same root logic: seasonal, legume-forward, minimally processed, socially anchored. The policy implication is radical in its simplicity: there is nothing

to teach. There is only something to recognise.

FOR ROTTERDAM POLICY-MAKERS

What this annex demonstrates

The Mediterranean dietary system is documentably real, agronomically deep, historically multicultural and climatically resilient. The knowledge base for implementing it in Rotterdam does not need to be imported from Southern Europe. It needs to be recognised in the kitchens, markets and food memories that Rotterdam's communities already carry. Puglia is not a model to replicate. It is a proof of concept — evidence that this system works, that it has worked for centuries under conditions of poverty and constraint, and that it produces exactly the dietary outcomes Rotterdam's food policy is trying to achieve.

A.4 Primary Source

The field research underpinning this annex draws substantially on original documentation produced by the study's author:

Caso A. (2019). *A Small Bite of Puglia: An Enogastronomical Journey Among Ancient Vegetarian Apulian Food Products*. Independent research publication, Bologna/Puglia. Covers vegetables, legumes, fruits, bread and baked products, seafood, land animal species, pastries and spirits of Puglia with historical, agronomic, etymological and cultural documentation. Full bibliography available on request.

Additional sources: Atlante dei Prodotti Tipici Agroalimentari di Puglia (Regione Puglia / Ministero delle Politiche Agricole, 2006); Slow Food Foundation Ark of Taste and Presidia documentation; CNR Institute of Plant Genetics, Bari; University of Bari agronomy research cited in individual product entries.