

## **MEDIET4ALL Approach to support food waste prevention**

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2023

-  
2026

# **INNOVATIONS IN FOOD LOSS AND WASTE MANAGEMENT**



## **CONFERENCE PROGRAMME**

**Ancona, 23-25 January 2024**



2023  
-  
2026

Transnational Movement to Support the **Sustainable Transition** towards a **Healthy & Eco-friendly Agri-Food System** through the Promotion of **MEDIET & its Lifestyle** in **Modern Society**.

Thematic Area 3-Food value chain

Topic 2.3.1-2022 (RIA) Enabling the transition to healthy and sustainable dietary behaviour



GERMANY



FRANCE



SPAIN



ITALY



TUNISIA



LUXEMBOURG



MOROCCO



ALGERIA

## MEDIET4ALL Consortium:



## Coordinating institution:

- **Germany:** **JGU**\_Johannes-Gutenberg-Universität Mainz, Mainz, Deutschland  
*PI: Dr. Achraf Ammar*

## Partners:

- **France :** **UB**\_Université Bourgogne AND **VITAGORA**  
*PI: Prof. Frédéric Debeaufort AND Ms. Eugénie Cornu*
- **Spain :** **UV**\_Universitat de València  
*PI: Ass. Prof. Amparo Gamero*
- **Italy :** **UNIPA**\_Università degli Studi di Palermo  
*PI: Ass. Prof. Paolo Inglese*
- **Tunisia :** **UoSF**\_University of Sfax  
*PI: Ass.Prof. Bassem Bouaziz*
- **Luxembourg :** **MT**\_MICROTARIENS  
*PI: Mr. Björn Lorenzen*
- **Morocco :** **ENA**\_ National School of Agriculture in Meknes AND **FMPR**\_ Faculty of Médecine and Pharmacy of Rabat  
*PI: Prof. Aadil Bajoub AND Prof. Ajal El Amine*
- **Algeria:** **UMBB**\_M'Hamed Bougara University of Boumerdes  
*PI: Ass. Prof. Lahiani Sadjia*

**Duration:** 3 years, 01.06.2023 – 30.05.2026

**Total Budget:** ≈ 2.3 M Euro

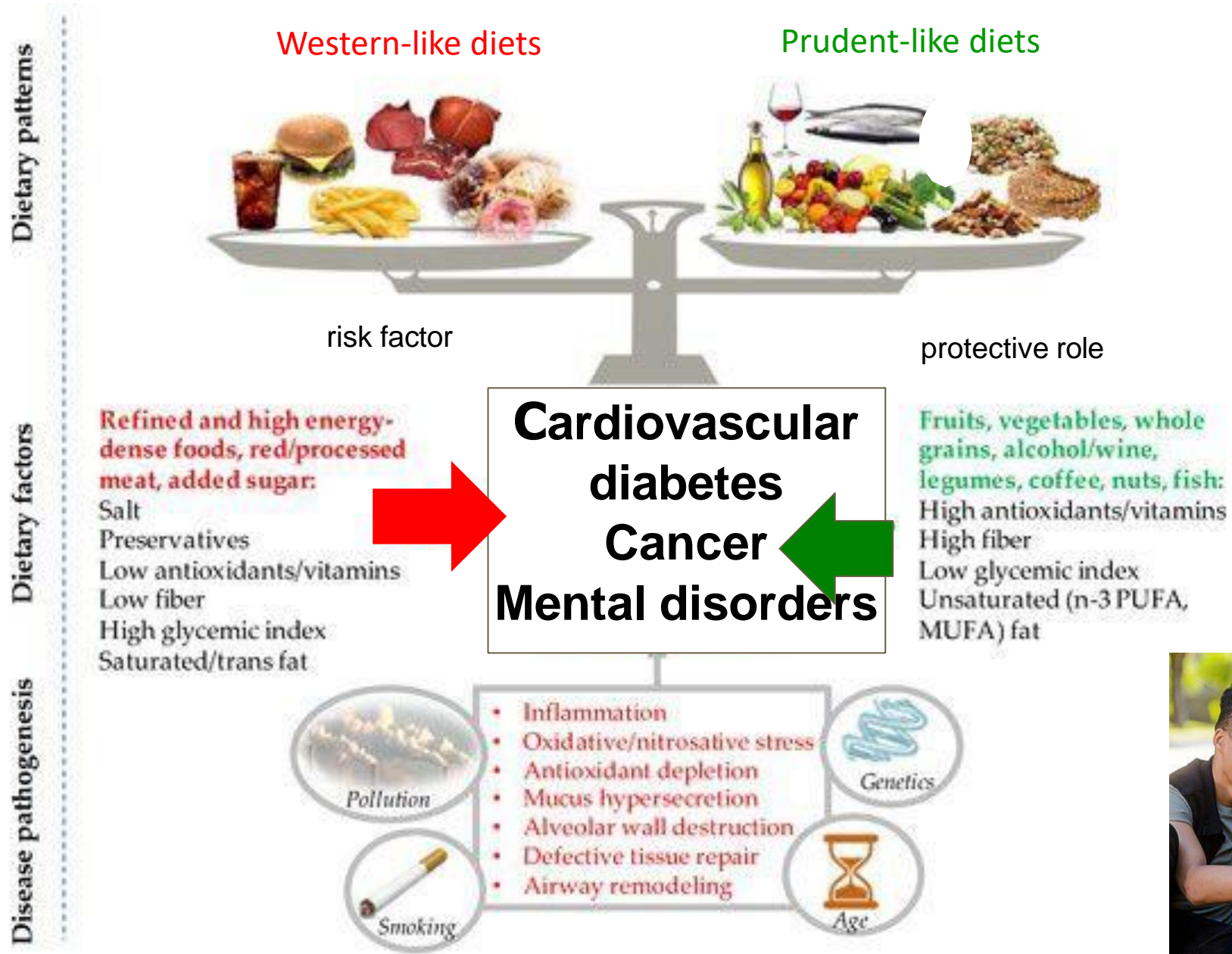


**Mediet4all**

Embracing the power of the  
Mediterranean Diet and Lifestyle

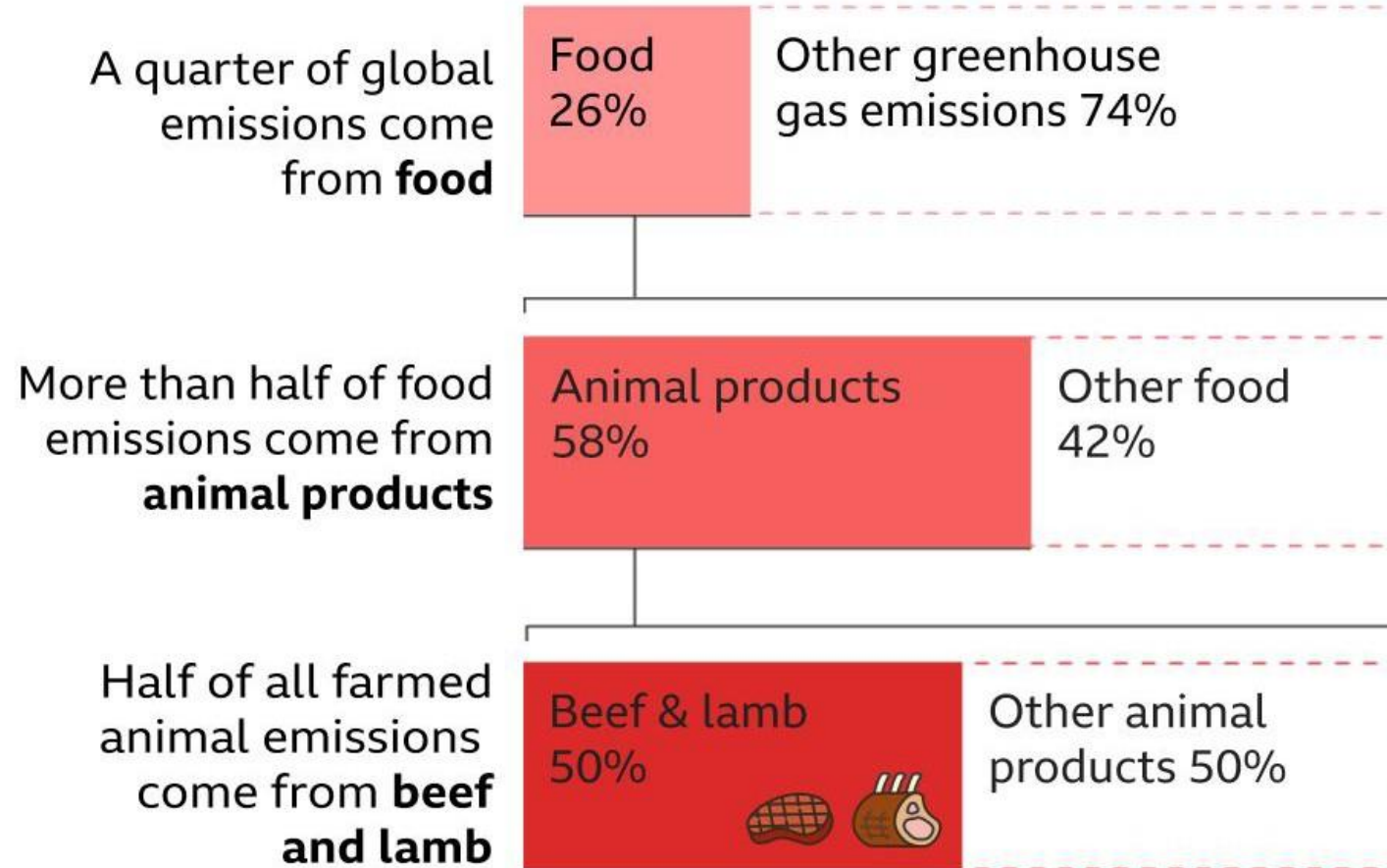


# How much impact does food have?



# How much impact does food have?

Proportion of total greenhouse gas emissions from food



# A syndemic global problem

About 2 billion people in the world experience some level of food insecurity, including moderate<sup>1</sup>

Heavy impact on human health:

800 million people are undernourished

2 billion people have micronutrient deficiencies

39% global population is overweight

13% global population is obese

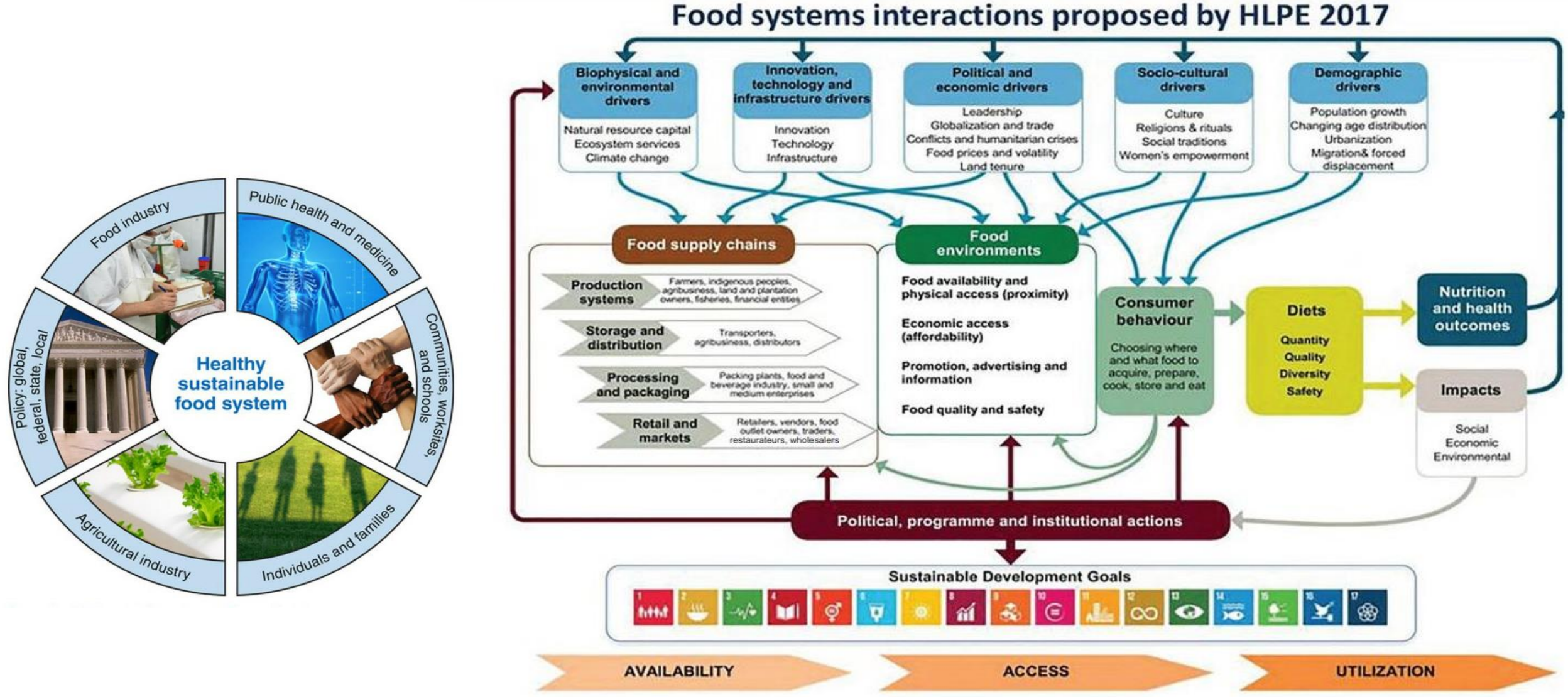
20-33% GHG emission can be attributed to food

The livestock itself produces 14% of the total gas (GHG emissions)<sup>2</sup>

A 30% reduction of GHG emissions would be possible, for example, if producers in a given system, region and climate adopted the *technologies and practice* with the lowest emission intensity<sup>2</sup>



# Healthy and sustainable food system



**FIGURE 1** Food systems conceptual framework. HLPE, High Level Panel of Experts on Food Security and Nutrition. Adapted from reference 8 with permission. Nutrition and Food Systems. FAO. 2017.

## Drastical shift in dietary habits toward UPFs

1990 → 2010 the consumption of Ultra-processed foods (UPFs) almost **tripled**  
(from **11% to 32%** of daily energy intake)

Latasa et al. 2018

Overall **contribution of UPFs to nutrient intakes > 50%** in many **EUR-MED countries**  
(e.g., 61% in SP and 79% in GER)



## UPFs: Impact on health and environment/ecosystem

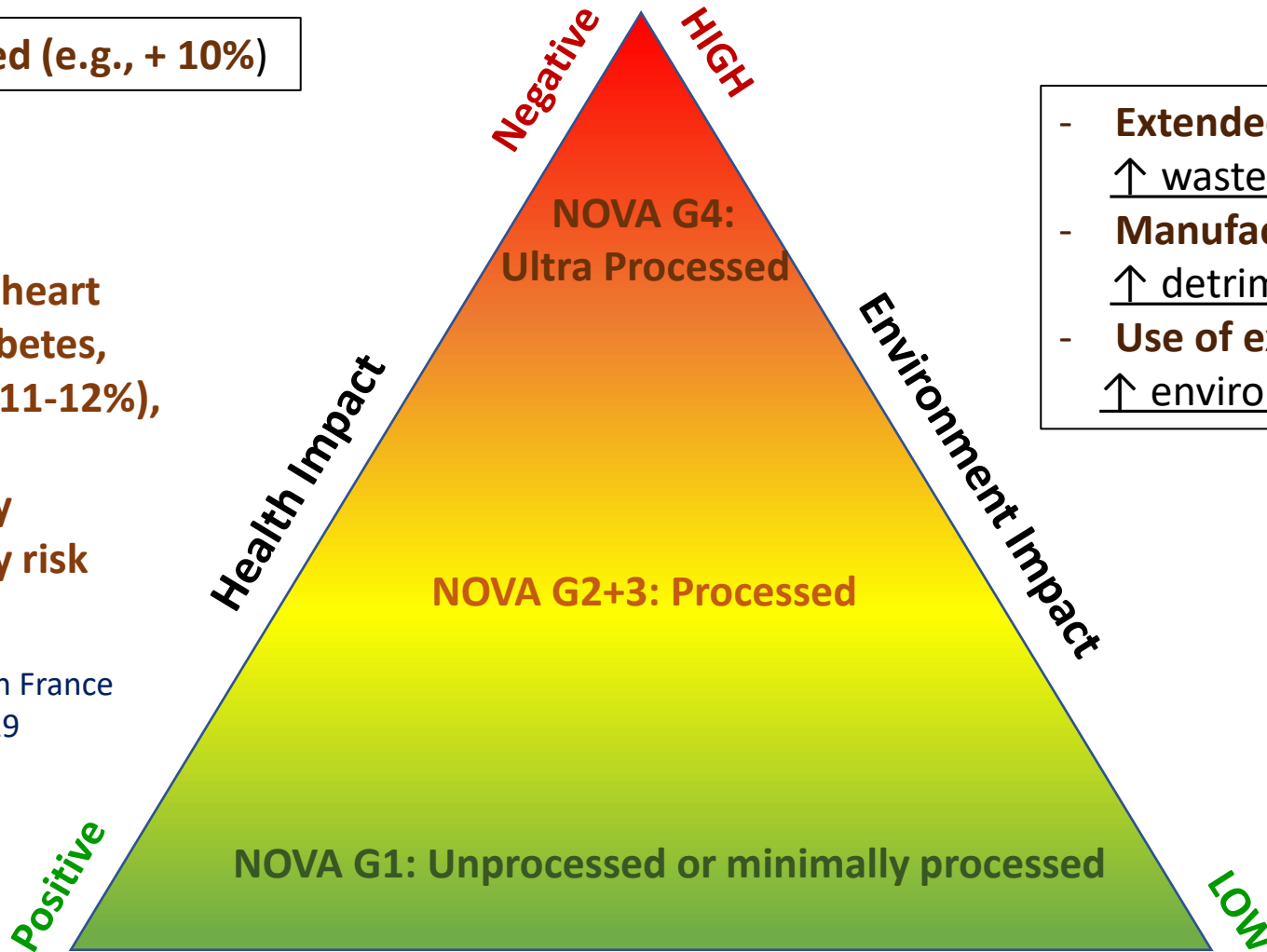
More UPFs consumed (e.g., + 10%)



↑ risk of obesity, heart disease type 2 diabetes, cancer, depression (+11-12%),

↑+1 UPF/day  
-> +18% mortality risk

Nutri-Net-Santé cohort in France  
SUN cohort in Spain, 2019



- **Extended food supply chain (FSC)**  
↑ waste, retail, transport, household use
- **Manufacturing and variety of additives**  
↑ detrimental impacts on the environment
- **Use of extensive packaging,**  
↑ environmental waste production



UPFs seems to have the most harmful impact on health and environment

Monteiro et al. 2019

Food Pyramide

## Drastical shift in dietary habits toward UPFs



Latasa et al. 2018

**REASON**

- Lack of awareness
- Modern societal trends (e.g., less time to preparing meals)

**-Emergence** of global **industrial food systems** and large **transnational corporations** offering convenient (durable, ready to eat, or heatable), highly profitable (low-cost ingredients), widely available and easy-to-consume food in attractive packaging supported by intensive marketing and advertisement (mostly deceptive).

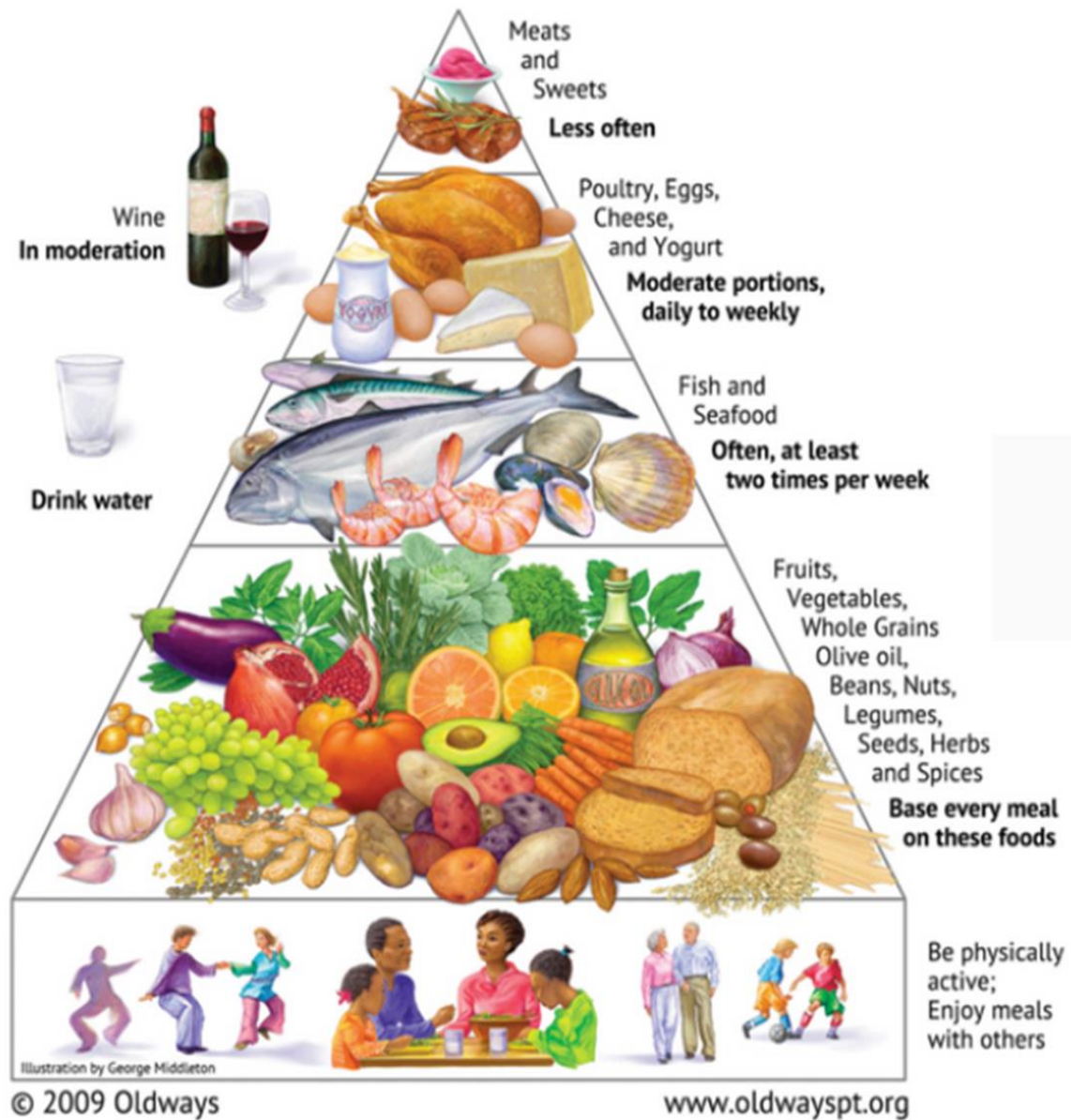
Monteiro et al. 2019



MEDIET4ALL focus on **enabling the transition from UPFs culture to UMPFs** by

- (i) **increasing the awareness, among people of all ages, of the adverse effects of UPFs and the general benefits of UMPFs,**
- (ii) **promoting the convenience** (e.g., availability and accessibility in the market) and **competitivities** of other food groups that are low processed, highly nutritional, healthy, eco-friendly, sustainable and characterized by shorter FSC and lower waste **such as the “MEDdiet”**.





The **MEDIET** is considered the world's most evidence-based eating pattern for **promoting health and longevity** while saving water and energy, reducing greenhouse gaz emission and conserving land

Sotos-Prieto et al. 2022; Sáez-Almendros et al. 2013

Expert consensus has even identified the **MEDIET** as the **easiest to follow** among low processed healthy eating patterns given his richness of **biodiversity, high socio-cultural value** and **positive local economic returns**

Sotos-Prieto et al. 2022; Dernini et al. 2015

The **modern MEDIET pyramid** incorporates various food components and other elements related to the lifestyle behaviors (e.g., regular physical exercise) and **psychosocial and cultural traditions** (e.g., meals shared with family, friend/colleagues)

**Active Healthy MEDlifestyle**

**Correspond to the multidisciplinary approach of the Call**



Multicenter survey-based study

Understanding consumer behavior + identify MEDIET adherence and the influencing factors

MED-consumer Understanding

**MEDIET4ALL Products**

 <b>MedRecipes</b> <ul style="list-style-type: none"> <li>✓ Modern</li> <li>✓ Nutritional</li> <li>✓ Minimally-processed</li> </ul>	 <b>MedPackage</b> <ul style="list-style-type: none"> <li>✓ Bio-Active</li> <li>✓ Shelf-life</li> <li>✓ Eco-friendly (use by-product)</li> </ul>	 <b>MedDatabase</b> <ul style="list-style-type: none"> <li>▪ MedProducts</li> <li>▪ Local producers</li> <li>✓ Accessibility</li> </ul>
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**MEDIET4ALL Campaigns**

✓ **Awareness**    ✓ **Marketing**

- **Traditional** (e.g., cooking class, promotional materials)
- **Technology-based** (digital advertising toolkits, m-apps, motivational serious-games, social media)
- ✓ **Country specific cultural adaptation**

✓ Stakeholders/consumer input: Farmers; MEDIET-products providers; canteens; restaurants; SMEs; family etc

**MEDIET4ALL ACTIONS**  
 → Behavioural change

**Collaborative Research**  
 → Guidelines & Best Practices

**MEDIET4ALL ICT-solutions**

**MEDIET4ALL Integrative-Platform**

- Products and Actions integration
- MEDIET Resilient Network
- MEDIET supply chains
- Products' price comparison
- Online MedProducts order

**MEDIET4ALL SMART-Coach**

- Tailored MedLifestyle programs (MEDIET + physical/psychosocial)
- Intervention / Prevention
- Follow-up and adjustment
- Adherence and BMI monitoring

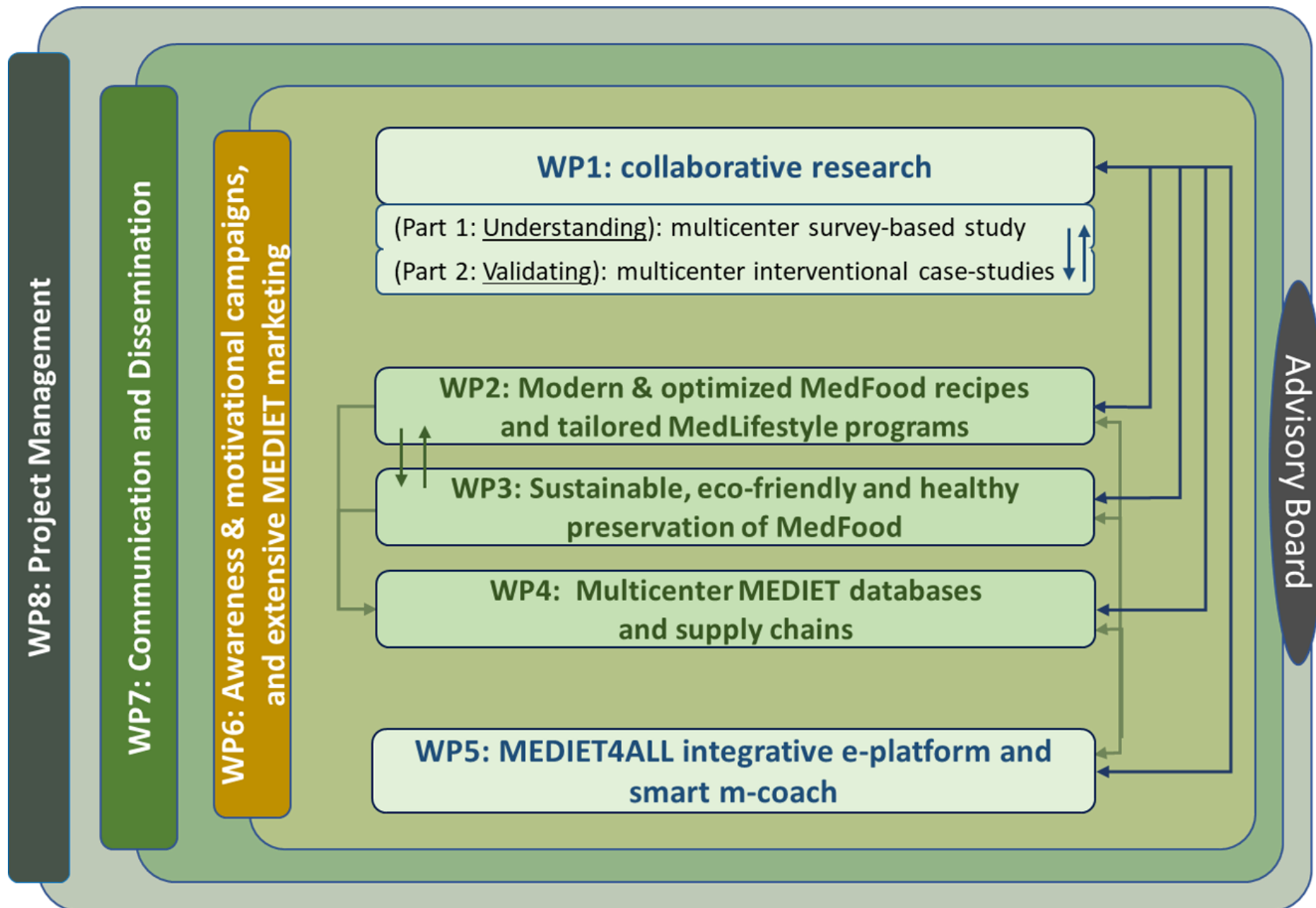
✓ Availability    ✓ Farm to Fork    ✓ Competitiveness    ✓ Sustainability    ✓ Health

Multicenter interventional case-study

Testing the acceptability and efficacy of MEDIET4ALL approaches and innovative solutions

Monitoring MEDIET adherence and impact on consumer's health (e.g., BMI)





**Flowchart** of the MEDIET4ALL's development processes (WPs and interconnections)



## Expected impacts:

Impact I	Development of modern MEDIET guidelines and fostering new business modules of a variety of value-added tailored products
KPI	<ul style="list-style-type: none"><li>▪ <b>54 healthy MEDIET/lifestyle programs</b> of 12-weeks period</li><li>▪ <b>A validated multicenter and multilanguage survey</b> measuring the MED consumer's behavior and adherence</li><li>▪ <b>50 minimally-processed “easy and quick” modern MEDIET-recipes</b> (5-12 recipes by country) that are highly-nutritional, rich in antioxidants, hypo-allergenic, and consider consumers’ preferences, sustainable aspect and local and budget-friendly ingredients</li><li>▪ <b>4 attractive eco-friendly bio/active packaging system</b> to preserve the different type of new MedFood</li><li>▪ <b>4 multicenter databases</b> for (i) MEDrecipes, (ii) their ingredients, and nutritional, antioxidant and hypo-allergenic characteristics, and their active bio-packaging products, (iii) MedFood products provider/producers, and (iv) MEDIET guidelines and tailored lifestyle programs</li><li>▪ An <b>integrative platform</b> and <b>m-app</b> (smart MEDlife-coach) with communication services (text-chat, voice) to promote a sustainable accessibility to these newly designed/developed products.</li></ul>

## Expected impacts:

Impact II	Promoting and marketing MEDdiet/Lifestyle and its benefits through traditional and technology-based motivational and awareness-raising campaigns and advertising actions.
KPI	<ul style="list-style-type: none"><li>▪ <i>8 open cooking classes and/or MEDculinary festivals</i> and streaming them online</li><li>▪ <i>A modern MEDIET cooking book, posters, flyers, podcasts, social media graphics</i> (marketing, promotional)</li><li>▪ <i>3 digital multilingual educational toolkits</i> targeting the 3 age-groups <i>and 4 multilingual serious games</i></li><li>▪ <i>MEDIET4ALL integrative platform</i> and <i>smart MedLifestyle Coach (m-app)</i> integrating all MDIET4ALL products</li></ul>
Impact III	The improvement of Med people's health (e.g., reducing obesity rate and other diet-related non-communicable diseases) by increasing their adherence to MEDIET and active lifestyle.
KPI	<ul style="list-style-type: none"><li>▪ <i>Enhances MEDIET adherence rate (+30%) in the studied population</i></li><li>▪ <i>Decrease by 8% the overall mortality in at least 30% of the studies population.</i></li><li>▪ <i>Reduces by 1/3 the overweight rate</i> and the risk of developing cardiovascular diseases and diabetes</li></ul>



## Others indirect impacts:

- Low environmental-impact diet model ;
- sustainability aspects (e.g., food, packaging) ;
- extended shelf-life;
- reducing food waste;
- using by-products as beneficial food ingredients;
- organic food produced without (or with less) pesticides;
- the Farm to Fork strategy ;
- biodiversity strategy





0% completed

## MEDIET4ALL survey

The MEDIET4ALL e-survey was designed by a steering group of multidisciplinary scientists and academics (nutrition, movement, psychology, sociology) at the JGU, Mainz, and was reviewed and edited by all MEDIET4ALL PRIMA-EU project partners. The estimated duration to complete the survey is 15-20 minutes and this survey helps to measure your adherence to the healthy Mediterranean diet (MEDIET), to understand the behaviors, preferences and barriers of MEDIET consumers and to determine the factors (gender, age, socio-demographic, cultural, etc.) that influence adherence to MEDIET.

## Data privacy and participation consent

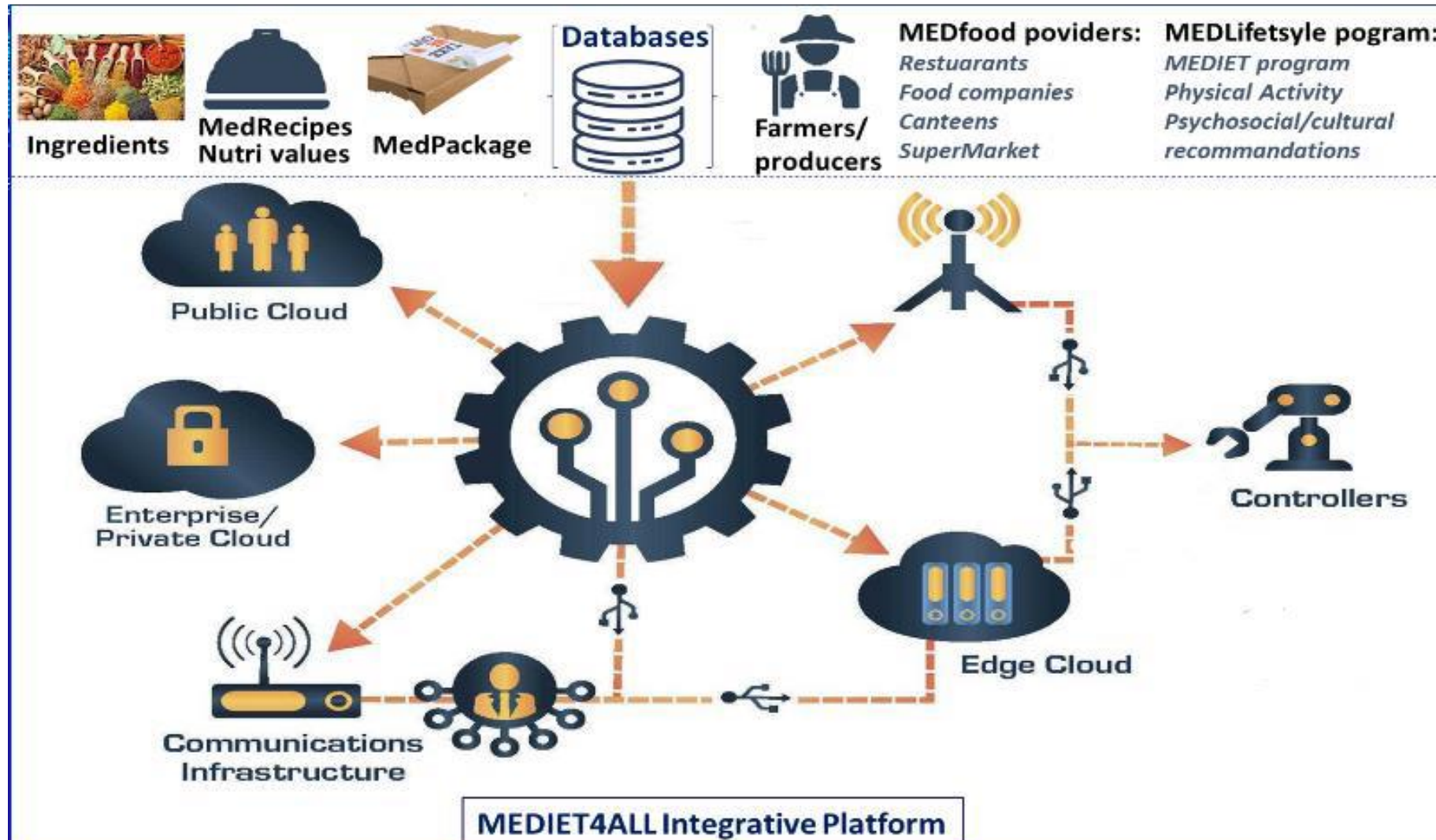
During the informed consent process, participants will be assured that all data will be used for research purposes only. Children over the age of 10 are also invited to complete the survey, but parental attendance will be considered mandatory to maintain the credibility and accuracy of the responses. Participant responses will be anonymous and confidential in accordance with the privacy policy of SoSci Survey ([www.socisurvey.de/en/privacy](http://www.socisurvey.de/en/privacy)), which complies with the Federal Data Protection Law (LFPD) and the General Protection Regulation Data Protection Regulation (GDPR). Participants will not be asked to provide their names or contact information.

Following

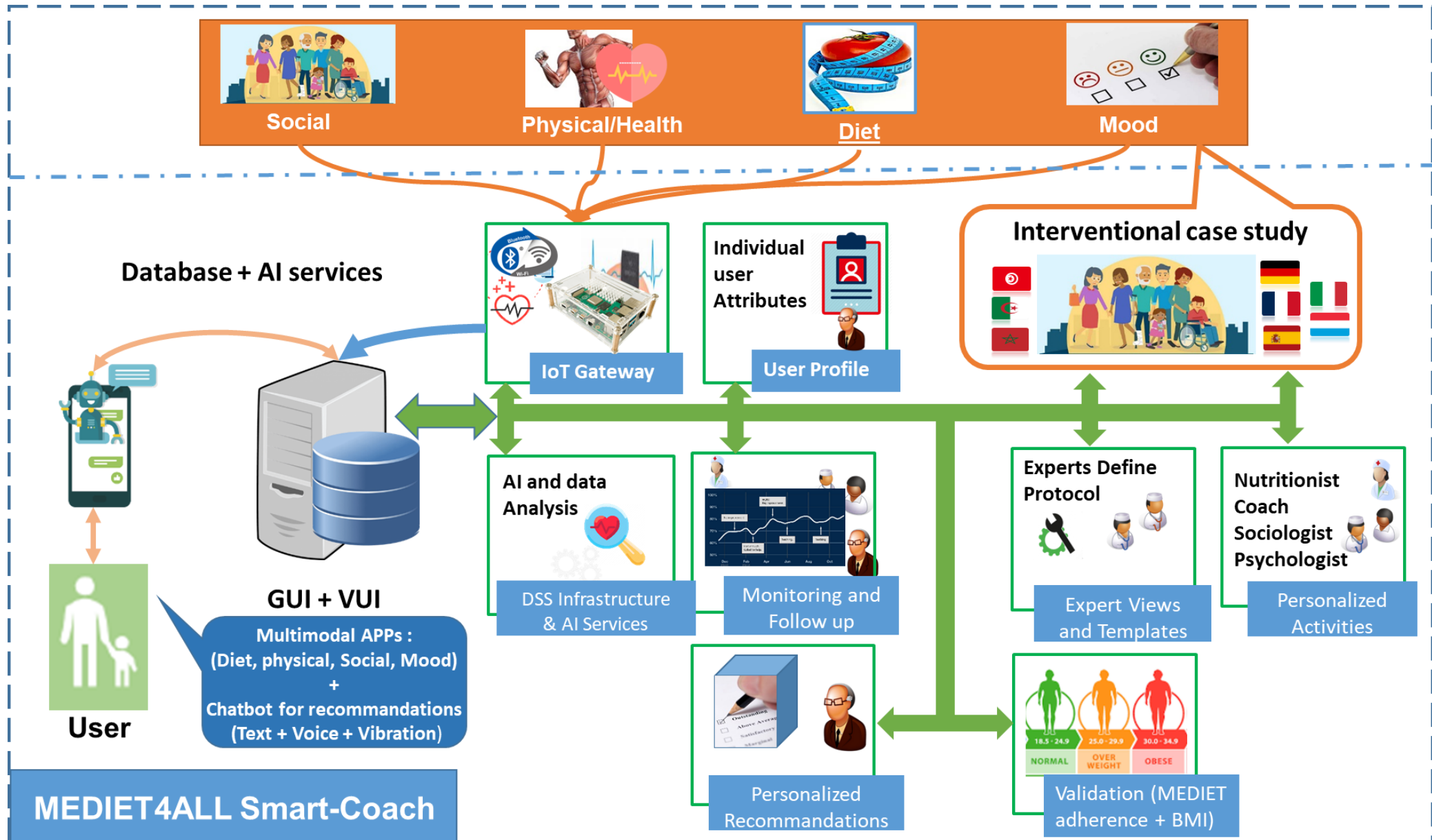
Pause the quiz

Recipe 4		Recipe 5		Recipe 6		Recipe 7	
Dobara	Tajine Zitoune	Chetitha sadine		AGHROUM LHWAL or aghroum vivras			
Quantity in grams	Ingredients	Quantity in gram	Ingredients	Quantity in gram	Ingredients	Quantity in grams	Ingredients
50g	chickpeas: chickpeas soaked ov	5g	onion (chopped)	70g	sardines	60g	fine wheat semolina
5g	small chopped onion	20g	carrot (sliced)	10g	tomatoes	5g	olive oil
5g	garlic		2 tbsp vegetable oil	5g	tomato paste	1tbsp	salt
	1 bay leaf	25g	2 cups green olives without seeds	1	bay leaf	1/4 tsp	baker's yeast
	1 tsp salt or to taste		using to reduce the amount of salt		thyme	5g	white onion
	1/4 tsp black pepper		1 tsp black pepper		For charmoula (stuffing)	1	small bunch fresh mint
	1 tsp coriander powder		as per taste salt	3g	6 colves garlic	1	small bunch basil
	1 tsp cumin		Ingredients for Cooking Chicken	2g	1tbsp tomato paste	1	small bunch coriander
	1 tbsp Olive oil	40g	1 whole chicken chest		Paprika	1	small bunch parsley
	<b>for the sauce:</b>		1/2 tsp black pepper		Salt	20g	spinach
10g	1 medium tomato (grated)		2 tbsp parsley		Cumin		
10g	1 Serrano pepper (seeded)		1tbsp butter		Hot chilli (optional)		
Step number	description	Step number	description	Step number	description	Step number	description
Step 1	heat, put the chopped onion with minced garlic, bay leaf and		Remove the bone from the chest o	Step 1	Clean the sardines, remove the hea	Step 1	Thinly slice the white onion and cho
Step 2	Add salt, pepper, cumin powder, coriander and olive oil.	Step 2	put the vegetable oil, the shopped onion, carrots, salt, black pepper,	Step 2	Prepare a charmoula by mixing garlic, salt, paprika, hot chilli, cumin	Step 2	Place the semolina in a large salad bowl, dig a well and pour in the oil,
Step 3	Let cook for about a minute, then add boiled water	Step 3	Then put 3 glasses of water, and let it boil till the olives are cooked	Step 3		Step 3	Sprinkle with water and gently knead the dough, just enough to bring it all together. The dough
Step 4	Bring to a boil then reduce the heat to medium low and let cook for about 30 to 45 minutes or until the	Step 4	in a pan put one tablespoon of butter and put the slices of chicken, salt, half tea spoon of black	Step 4	Put the oil, half the charmoula and the tomato paste in a saucepan and sauté a little, then add the	Step 4	Heat a cast-iron pan (you can use a non-stick frying pan or a crêpe pan). Lightly grease the pan with a
Step 5	In meantime, prepare the salsa. In a food processor, put the grated tomato, Serrano pepper, chopped	Step 5	After that put the mixture in the pot in to the pan with the chicken and let them boil for about 5 minutes	Step 5	5. Add a glass of water and leave on the heat for a few minutes, then add the bay leaf, thyme and rolled	Step 5	Divide the dough into 2 or 4 pieces,
Step 6	Put this mixture in a bowl. Add tomato paste, Harissa, paprika, salt, coriander, cumin,	Step 6	When the Tajine is ready add somme parsley and serve	Step 6		Step 6	Roll out into a thin cake 1.5 cm thick, more or less according to taste.
Step 7	Add about 4 to 5 table spoons olive oil and mix it all together. Set aside.	Step 7		Step 7		Step 7	Place your cake on the pan, which should be very hot, and the heat should be medium (not too low, not too high) then cook with
		Step 8	Put 2 or 3 ladles of chickpeas with the liquid in a cooking dish	Step 8			
							

## WP5: MEDIET4ALL integrative e-platform and smart m-coach



# WP5: MEDIET4ALL integrative e-platform and smart m-coach







# MEDIET4ALL smart m-coach



**Mediet4all**

Embracing the power of the Mediterranean Diet and Lifestyle

**Informations**  
Please enter your informations to continue using our app

 Weight 68.0	 Goal weight 60.0
 Height 1.65	 Age 24

**Life habits**  
Please select your choices to continue using our app

- High diet in saturated fat and calories
- Excessive consumption of alcohol
- Smoking
- Sedentary

**DIET ASSESSMENT**

**Recommendation for today**

	<b>Breakfast</b> Greek Yoghurt with chopped Apples and a splash of Maple Syrup 240 Kcal
	<b>Lunch</b> One serving of avocado Egg Salad 244 Kcal
	<b>Dinner</b> One serving of shrimp Linguine with Cherry Tomatoes and cheese 240 Kcal

**Report**

**Recommendation for this week**

<b>Monday, August 30, 2021</b>	<b>Tuesday, August 31, 2021</b>	<b>Wednesday, September 1, 2021</b>
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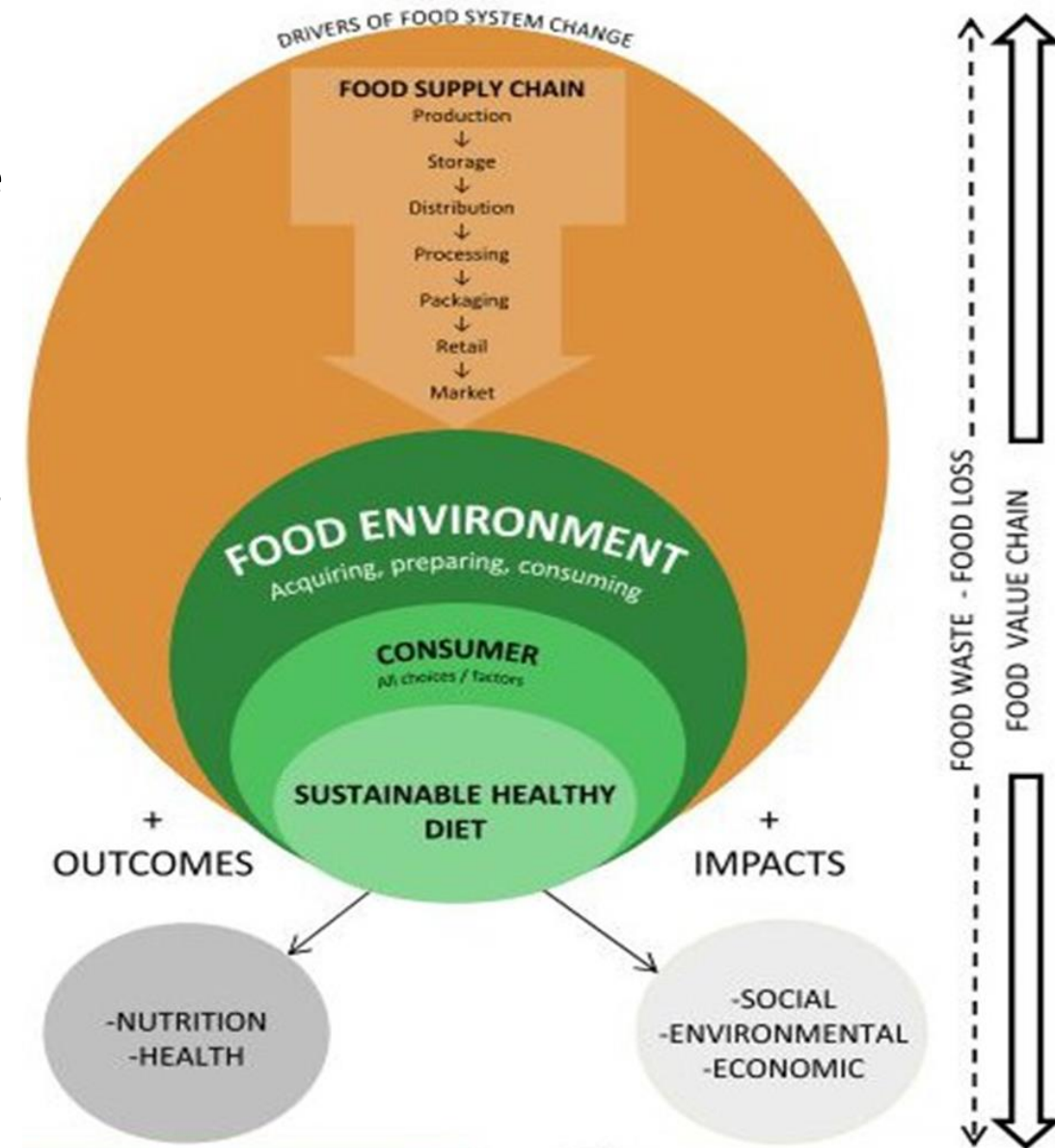
**You lose in this week**  
7890 kcal = 1.127 kilo

**You lose in this month**  
31560 kcal = 4.509 kilo

**Your last weight**  
100.00 kilo

## Contribution of MEDIET4ALL in the prevention of FoodWaste

- Supporting **farm to fork** strategy with the integrative MEDproduct/producers **e-platform** & farm-to fork **market**
- Tackle the transition toward ~~UPFs~~ (Extended FSC)
- **Availability** and **convenience** of minimally processed food
- **Valorization** of food waste (by-product bio-based packaging..)
- Increase the **public awareness** about sustainable food system, reducing food waste, health and environment impact of UPFs
- Promoting the **social aspect** of sustainable food system:
  - ✓ creation of **social inclusion platform** in the m-coach
  - ✓ **family/friend based-lifestyle-activities** (cooking, join meal, collaborative games, physical and social activities)





For a healthy and sustainable diet, we must prioritize plant-rich diets (MEDIET) and minimize food waste

# tips for a more sustainable diet



eat more  
fruit, veg &  
whole grains



reduce animal  
proteins & swap  
for plant-based  
ones



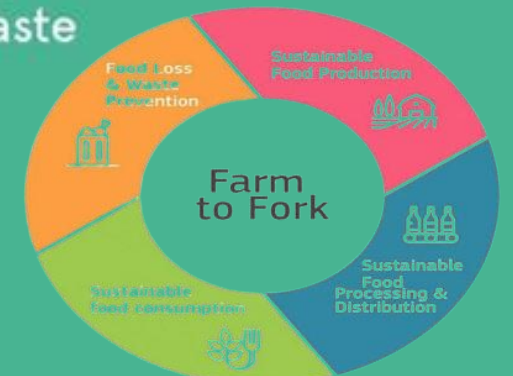
eat locally  
& in season  
when possible



avoid  
unnecessary  
packaging & choose  
sustainable ones



avoid  
food waste







# Mediet4all

Embracing the power of the  
Mediterranean Diet and Lifestyle

## TRANSFORMING

- Consumer Behaviour

- Agri-Food System

PRIMA EU project (June 2023 – Mai 2026)



And visit our [website](#) for more!



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Mediterranean Diet and Lifestyle



The PRIMA programme is an Art. 185 initiative supported and founded under Horizon 2020, the European Union's Framework Programme for Research and Innovation



Thank you

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MEDIET4ALL Survey

<https://xd.adobe.com/view/292e404d-43ac-416a-9e1a-22898359f6ea-7c7d/?fullscreen>