BOOK 1

TRAMe2035

Scenario for a Transition of Households Dietary Habits by 2035

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TRAMe2035

A long-term project, TRAMe2035 is the result of four years of developing and applying an original multidisciplinary approach to enable debate on the conditions for dietary transition. This is a politically and socially sensitive issue, as food intersects with cultural, economic, environmental and health dimensions. Nevertheless, it is essential to establish ways to discuss these challenges, and this is precisely what IDDRI and I4CE have been working on in collaboration with numerous stakeholders. This work is part of a broader effort focused on ensuring a just transition for the French meat sector. IDDRI is an independent think tank that provides analyses and pathways for change in international cooperation and sectoral transformations, aiming for a prosperous future for all within planetary boundaries, both in the Global North and South. IDDRI brings together a team of 50 employees, including 40 researchers with multidisciplinary expertise, and operates as a network with around 50 partner think tanks and universities worldwide. I4CE is a non-profit research institute that contributes to the debate on public policies for climate change mitigation and adaptation. It advocates for policies that are effective, efficient and socially fair. Its 40 experts engage with national and local governments, the European Union, international financial institutions, civil society organizations and the media.

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TRAMe2035

SCENARIO FOR A TRANSITION OF HOUSEHOLDS DIETARY HABITS BY 2035

TRAMe2035 has been written in the framework of a collaboration between Lucile Rogissart (I4CE) and Mathieu Saujot, Clémence Nasr, Charlie Brocard, Pierre-Marie Aubert (IDDRI).


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EXECUTIVE SUMMARY

The case for a food demand scenario

The importance of a transition to sustainable food

Current food production and consumption trends contribute to a range of public health, social and environmental problems. The need for a transition is no longer in doubt: we must move towards a system that produces healthy food with a low impact on ecosystems, is accessible to all, and ensures fair remuneration for producers.

There's no denying that the questions we raise here are politically and socially sensitive, as food is deeply connected to cultural, economic, environmental and health issues. Nevertheless, it is essential to develop ways to foster open discussion. IDDRI and I4CE have therefore joined forces with several other actors to provide insights for the debate.

While the targets to be achieved are becoming increasingly clear, the feasibility and conditions for implementing this dietary transition are less well studied and remain a subject of debate. Some argue that food consumption is not a variable that can be influenced but rather a factor governed by its own dynamics, over which public and private actors have little control. **In this context, the TRAMe2035 scenario (**Transition des Régimes Alimentaires des Ménages – Transition of Households Dietary Habits by 2035**) aims to demonstrate that a transition to sustainable food is possible and to explore the conditions required for its implementation.** The transition to sustainable food involves nutritional (e.g. increasing fruit and vegetable consumption, reducing intake of ultra-processed products), social (e.g. ensuring access to a sustainable and healthy diet for all), economic (e.g. it challenges sectors and private actors in an increasingly competitive context) and environmental (e.g. sustainable agricultural practices) considerations. This scenario focuses particularly on meat, as it is a major factor in the environmental footprint of French–and European–diets, a symbol of the idea that food consumption is "exogenous", and a contentious issue that requires a nuanced and detailed approach to address its complexity. The TRAMe analysis follows the "less and better" perspective on meat while seriously considering the socio-economic and political constraints involved.

Food consumption is not set in stone… provided that action is taken to shape food environments

For meat, as for other dietary habits, actual consumption often differs considerably from what people report. In reality, the vast majority of the French population does not oppose the idea of reducing meat consumption, and many even claim that they are already doing so. However, at the national level, meat consumption has remained stagnant for the past decade. To bridge this gap between stated intentions and observed behaviour, a shift in approach is needed – moving beyond the sole focus on responsible consumer choices or calls for individual action.

Given these limitations, focusing on "food environments" offers an alternative approach by examining the conditions under which targeted beneficial practices could become easy and appealing. These environments–physical (which products are available on the shelves, what food is offered in collective settings), economic (pricing of food-related products and services), cognitive (available information), and socio-cultural (messages and values conveyed, norms)–shape the context in which we make daily food choices. They are powerful drivers of food demand and have profoundly shaped its evolution in recent decades. In this sense, these environments, largely formed by public and private actors (agri-food industry, retail, catering), are key to achieving a diet that is healthy, sustainable and accessible to everyone.

An innovative approach to support TRAMe2035

This work seeks to answer two key questions: (1) Can food demand (specifically for meat products) evolve in line with environmental and health challenges while reflecting the aspirations of different social groups? (2) What changes in food environments would be needed to achieve this?

The TRAMe2035 scenario outlines a trajectory for the evolution of food demand up to 2035, characterized by the following features:

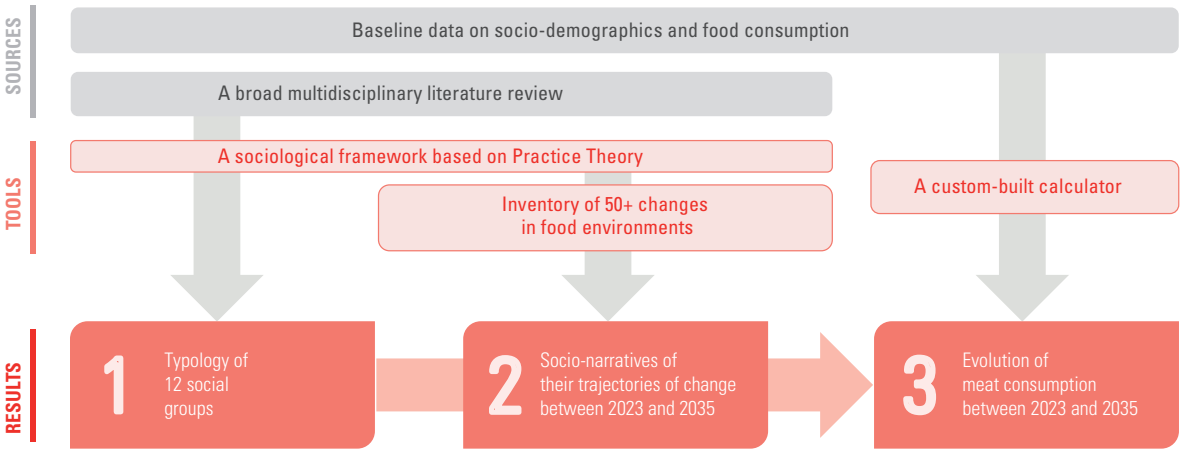
- **A broad analysis of the evolution of food practices, with a particular focus on meat consumption**. While meat is central, all food practices are considered and are subject to change. The proposed methodology can also be applied to other issues, such as health, by promoting increased consumption of fruit and vegetables.
- **A realistic pathway for the food transition, identifying conditions needed to initiate change by 2035** without major disruptions to society or the food system. This is particularly important given the symbolic and cultural significance of meat. Rather than presenting an idealized endpoint, TRAMe proposes a plausible short and medium-term trajectory, with changes that must continue beyond 2035.
- **A plausible and concrete approach to changes in food environments,** as experienced by 12 social groups representative of the French population. TRAMe is built on a conceptual model that sees changes in food practices as the result of both a) the capacities, potential, and aspirations of social groups for change, and b) the influence of public and private actions on food environments.

To develop this scenario, we designed an original methodology that combines sociology, quantitative modelling, and public policy analysis. This approach (detailed in Book 3 - Methodological framework) is based on three key tools: (A) a sociologically inspired framework for understanding changes in eating behaviour, based on Practice Theory; (B) an inventory of over 50 changes in food environments, drawing from examples in France and across Europe; (C) a quantitative modelling tool designed to project the evolution of French meat consumption from 2023 to 2035. This methodology leads to three outcomes: (1) a typology of 12 social groups representative of French society; (2) socio-narratives mapping their trajectories of change between 2023 and 2035 (compiled in Book 2 - Socio-narratives of food transition for 12 social groups), and (3) the projected meat consumption levels in 2035. Figure A summarizes this methodological framework, the result of four years of developing and applying a multidisciplinary approach.

Linking the evolution of supply and demand

This study is part of a broader foresight exercise on the transformation of the French meat sector, covering the entire supply chain, from upstream to downstream. It follows the publication of an analysis of the sector and a trend scenario to 2035 (Aubert & Poux, 2024), which highlighted challenging future prospects. It also precedes the release of three scenarios for the future supply of meat products, scheduled for the second half of 2025. Together, this body of work aims to assess the conditions for a just transition in the French meat sector, addressing both environmental challenges, which

FIGURE A. Three tools for building the TRAMe2035 exercise



are critical for the long-term sustainability of agricultural production, and the socio-economic concerns of livestock farmers, meat industry workers, and consumers.

TRAMe2035 thus seeks to provide an alternative to an undesirable trend scenario. As French meat production has been declining and consumption has been stagnating in recent years, a reduction in consumption could, in principle, enhance sovereignty and lower the environmental footprint of French food. However, given the competitiveness challenges involved, there is a risk that lowering consumption would impact French production rather than lead to a decrease in imports.

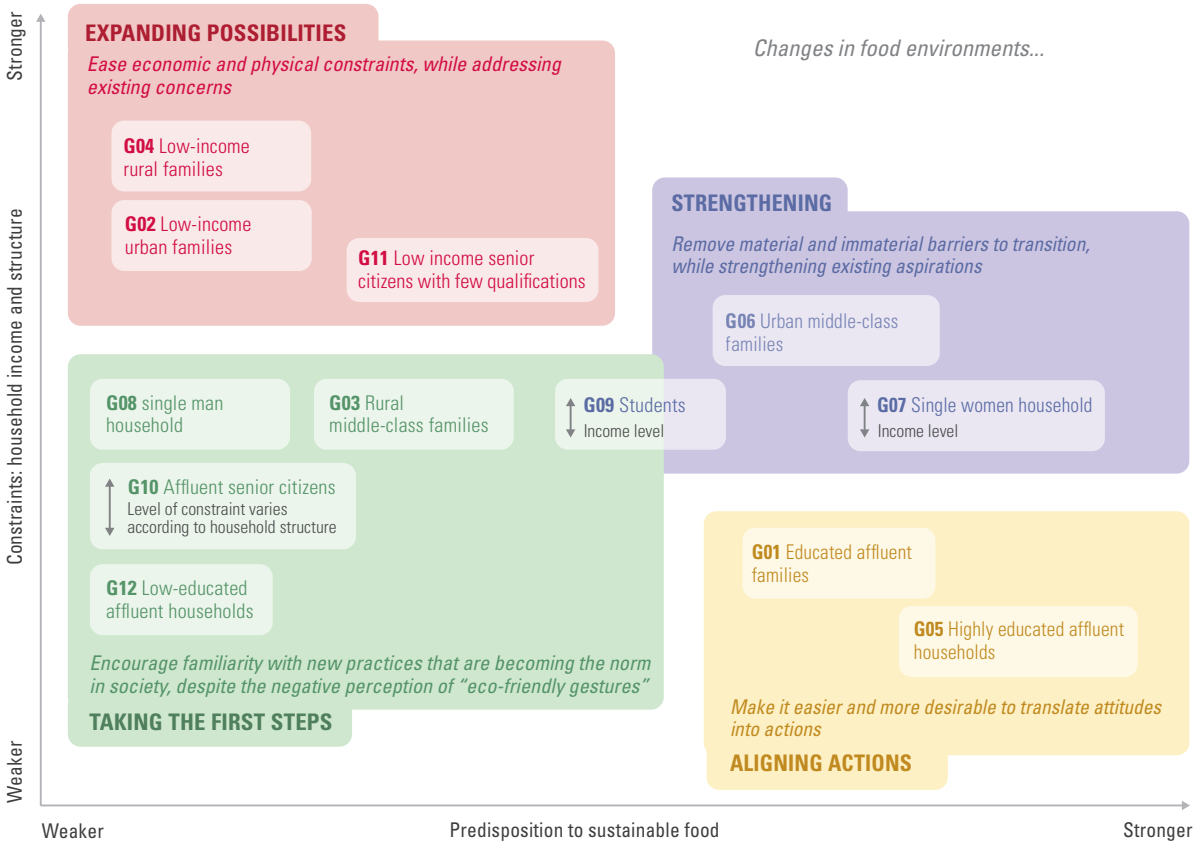
TRAMe2035 sets out a pathway towards "less and better". Building on this, the forthcoming publication will further explore how supply and demand can be better aligned to support the transition of French agriculture. Opening up these discussions together is essential to identifying the conditions for a just transition, or at the very least, to putting them up for debate.

Results

Diets can change by 2035 while respecting social diversity

A significant shift in eating habits, including reduced meat consumption, is possible across all the social groups studied, while acknowledging and building on their current practices. This is demonstrated by the 12 socio-narratives developed in TRAMe2035, which outline how each group responds to changes in food environments (available in Book 2 – Socio-narratives of food transition for 12 social groups). This approach moves beyond the idea of an average individual, capturing the complexity of French society. Each group follows its own transition pathway, on its own terms, i.e. one that aligns with its specific constraints and aspirations.

FIGURE B. Four key pathways of dietary change across social groups



Source: IDDRI/I4CE.

It is possible to engage society as a whole in the transition, without ignoring social inequalities or barriers to change. The developments outlined here do not represent a complete break from current eating habits. Moreover, this scenario helps identify key levers of change for a wide range of social groups, avoiding the pitfall of focusing only on those groups who are already convinced and face few constraints (which represent about 15% of the population). The 12 groups are clustered into four main trajectory types, each representing a transition configuration.

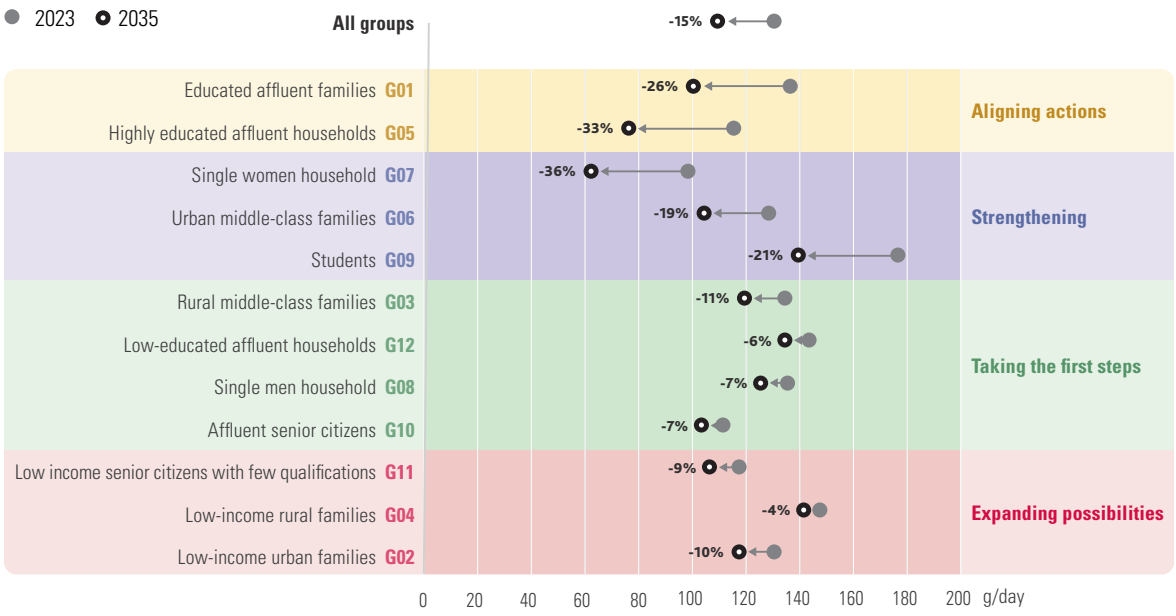
A reduction in meat consumption by 2035, consistent with long-term health and environmental objectives

The TRAMe scenario results in a 15% decrease in average meat consumption between 2023 and 2035. This overall evolution reflects the combined trajectories that are specific to the 12 social groups, with reductions ranging from 4% to 36% depending on the group. This reduction brings the average meat availability to 74 kg per person per year in 2035 (in carcass equivalent)–slightly above Italy's current average. Notably, this is achieved without compromising the nutritional needs of any social group.

This average decrease in meat consumption also varies by type: an 18% reduction for beef, 17% for pork, 8% for poultry, and 28% for other meats (lamb, game, rabbit, etc.). These differences between species are consistent with trends observed in recent decades, where beef and pork consumption has declined while poultry consumption has risen (Aubert & Poux, 2024). Beyond the quantitative aspect of "less", the socio-narratives also highlight possible shifts towards "better" meat, with varying intensities and forms depending on the groups and subgroups. These include preferences for meat from grazing systems, locally produced meat, French origin, quality labels, and other characteristics.

This trajectory to 2035 lays the groundwork for meeting environmental objectives by 2050 and is consistent with nutritional recommendations that integrate health and environmental goals in several European countries. However, this will require extending and deepening the changes initiated in this first phase. This hypothesis aligns with the fact that changes in food environments and practices have cumulative effects over time, reinforcing each other at the household level (e.g., shifts in social norms) and within the food system (e.g., changes in business strategies).

FIGURE C. Meat consumption evolutions 2023-2035 by social group (excluding children)



Note : the average reduction in meat consumption is -14% for the total population, and -15% for the population excluding children.

Source: I4CE/IDDRI.

A strategy and action plan for food environments

The TRAMe2035 scenario and its 12 socio-narratives highlight the crucial role of food environments in shaping food practices. The reworked proverb "where there's a way, there's a will" illustrates this well: change happens through practice, daily actions, and the lived environment–provided it is made possible, easy, attractive, and desirable for as many people as possible. It requires action across all food environments. This has important strategic implications, as public policy remains largely focused on raising individual awareness.

By simulating these 12 trajectories, TRAMe2035 also describes what a coherent, ambitious, and achievable approach to food environments could look like. Existing public policies and numerous private initiatives provide a solid foundation for discussing a short-term action plan. TRAMe2035 builds on changes that have already proven effective across various aspects of the food environment. On the physical side, this includes developments in food distribution (such as shelf reorganization, new products, and shifts in brand marketing), as well as changes in collective and commercial catering (including the introduction of more plant-based meal options and new food service models). It also involves a broader reconfiguration of the food supply, its points of sale, and the social spaces associated with food. On the socio-cultural and informational side, the actions considered include food labels, audiovisual and television content, communication by private companies, and the role of opinion leaders, such as medical professionals acting as influencers, helping to promote both plant-based options and high-quality meat. Finally, on the economic front, the focus is on developing promotional offers for plant-based products, narrowing the price gap between plant-based alternatives and meat, and implementing a moderate increase in social benefits.

The variety of changes envisioned reflects both the diversity of social groups and the multi-dimensional nature of food practices. By accounting for these factors, TRAMe2035 presents a credible scenario. However, it is neither the only possible pathway nor an ideal one–other combinations of changes in food environments could be explored. The purpose of this report is precisely to initiate that debate.

Finally, **changing food environments does not mean restricting consumer freedom**. On the contrary, the proposed changes can broaden choice and give consumers greater control over their daily lives by expanding available options and strengthening their agency. This can be seen, for example, in the expansion of plant-based options, improved regulation of advertising, and efforts to make all food products more economically accessible. **TRAMe2035.**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INTRODUCTION

Why TRAMe2035? The importance of a transition to sustainable food

The Food and Agriculture Organization of the United Nations (FAO) defines sustainable diets as: "*dietary patterns that promote all dimensions of health and wellbeing; have low environmental pressure and impact; are accessible, affordable, safe and equitable; and are culturally acceptable. [They] contribute to preventing all forms of malnutrition; reduce the risk of diet-related non-communicable diseases; and support the preservation of biodiversity and planetary health.*" (FAO & OMS, 2020, p. 9). Sustainable food, which is inherently multidimensional, must therefore be considered in relation to the food system as a whole, i.e. the social, economic and political structures that underpin food production. This system extends from input suppliers upstream of agriculture to consumers downstream, encompassing farmers, cooperatives, processors, retailers and food service providers.

In light of this definition, the French food system does fulfil part of its primary mission by ensuring a sufficient, safe and varied food supply for both the French and European populations (SAPEA, 2020). However, according to FAO (2024b), the hidden costs of its dysfunctions amount to €167 billion, with at least €20 billion directly borne by public spending (Secours Catholique, 2024). Challenges related to the food system span health, socio-economic and environmental dimensions. While debates persist, the literature indicates broad consensus on some of the key priorities that must be addressed in response to these issues.

In terms of health and nutrition, the prevalence of chronic non-communicable diseases linked to diet has risen. In France, these diseases result in an estimated annual loss of nearly €126 billion due to reduced productivity among the working population (FAO, 2024b), with more than half of this attributed to the insufficient consumption of unprocessed plant-based foods, particularly fruit and vegetables. However, nutritional recommendations issued by public authorities have yet to be sufficiently reflected in dietary practices (Santé Publique France, 2019). A key priority, therefore, is to increase the consumption of fruit and vegetables, including pulses, to align with the intake levels recommended by the World Health Organization (WHO) and the French National Nutrition and Health Programme (Santé Publique France, 2019). This should be accompanied by a reduction in the consumption of sugary drinks and foods high in fat, sugar, salt and ultra-processed ingredients—particularly those containing meat.

In socio-economic terms, dietary patterns reflect growing social inequalities in access (physical or economic) to food, to certain types of products or levels of quality. In 2015, 17% of adults experienced food insufficiency (Anses, 2017), and in 2021, 10% of the population relied on food aid (Ministry of Solidarity, 2021). The most financially constrained consume 19% less fruit and vegetables than the wealthiest (Anses, 2017), while the majority of (regular) consumers of organic food are from higher socio-economic groups (Baudry *et al.*, 2019). In this context, a key objective is to support lower-income consumers in gaining better access to a healthy and sustainable diet.

Upstream, the structure of agricultural sectors is becoming increasingly inequitable for a growing proportion of farmers and SMEs in the agri-food industry. Competition in European and international markets continues to exert downward pressure on prices, which some industries and supply chains are struggling to withstand. This is particularly evident in the beef, lamb and goat sectors, where the rate of monetary poverty of workers is higher than the national average (Agreste, 2024). In this context, a more sustainable food system must also ensure better remuneration for producers and economic actors. Finally, this situation is also driving an increase in imports across several sectors, including poultry, fruit and vegetables, and animal feed (I4CE, 2023; Sénat, 2022).

Finally, **from an environmental perspective**, food consumption in France places significant pressure on ecosystems and the climate. In terms of ecosystems, the high demand for animal products drives elevated production levels, which in turn generate substantial demand for animal feed. Depending on annual variations, French livestock farming consumes 50–60% of the cereals and 60-70% of the oilseeds and protein crops used in France (FAO, 2024a), contributing significantly to the use of fertilizers and plant protection products (Aubert & Poux, 2024). The geographical concentration of livestock farms, particularly in the west of the country, disrupts nutrient cycles—especially nitrogen—contributing to the pollution of marine and surface waters. From a climate perspective, food consumption accounts for 24% of household greenhouse gas emissions (Barbier *et al.*, 2019), with livestock farming responsible for 80% of these emissions (CITEPA, 2022). While livestock farming can play a role in supporting agroecosystem functions, particularly in landscape management and the maintenance of marginal areas, its current structure in France also makes it a major contributor to the environmental impacts of agriculture. In this context, transitioning to a more sustainable diet necessitates a reduction in the consumption of animal products—a prerequisite for the transformation and rescaling of livestock farming in line with climate and biodiversity objectives. In dietary terms, this shift translates into a rebalancing of protein intake in favour of plant-based sources (Aiking *et al.*, 2006; De Boer & Aiking, 2018; Huber *et al.*, 2020; IPCC, 2023; Schiavo, 2020). This protein rebalancing aligns health and environmental considerations, a relationship extensively explored in the literature with increasingly robust conclusions: diets higher in plant-based foods and lower in meat are associated with both improved nutritional quality and reduced environmental impact (Cobiac & Scarborough, 2019; Fouillet *et al.*, 2023; Mariotti & Gardner, 2020; Mota *et al.*, 2021; Nelson *et al.*, 2016; WHO, 2021; Willett *et al.*, 2019; Wilson *et al.*, 2019). These findings are increasingly reflected in updated nutritional recommendations across several countries (Réseau Action Climat & Société Française de Nutrition, 2024).

The necessity of transitioning to more sustainable agriculture and food systems, as well as the key priorities of this transition, is no longer a subject of debate in the academic sphere—though it continues to be a point of contention in public discourse. However, the literature is more divided and less extensive when it comes to the practical implementation of these transitions, particularly in relation to changing dietary habits.

How to bring about changes in food practices?

Once these targets have been established, how can a shift in food practices be initiated? And how can these changes be linked to a broader transformation of the food system? At present, research remains insufficient to fully address these questions and bring them into the debate. While numerous agricultural transition scenarios have been developed at the French, European and global levels (see Couturier *et al.*, 2021, for a review), they do not provide a basis for discussing the conditions necessary for a transition in dietary habits. These scenarios tend to focus primarily on biophysical aspects, outlining the potential evolution of production and consumption volumes (for meat, wheat, fruit and vegetables, etc.), while considering available land and resources, environmental impacts (such as pollution, greenhouse gas emissions, etc.) and nutrition and health issues. The food dimension of these scenarios thus presents at least three major shortcomings. First, the gap between projected future diets and current diets is often (very) large. Second, they do not propose any mechanism or tool to transition from one to the other. And third, they tend to propose a single *universal* diet for the future, whereas dietary practices are inherently diverse, shaped by social categories and cultural preferences.

Thinking about the evolution of eating habits requires simultaneously examining the mechanisms at play and the factors most likely to drive change, with public action playing a central role. Broadly speaking, two dominant approaches shape the way trajectories of dietary change are conceptualized. The first is the "responsible consumer" approach, which positions the consumer as the central actor in the food system. In this view, individuals reflect on their choices and seek consistency between their values and their food consumption. From this perspective, changes in eating habits can be encouraged by improving access to relevant and reliable information through labelling schemes, awareness campaigns and food education initiatives. The second is an economic approach, in which price is the primary determinant of food choices. Here, public policy interventions focus primarily on financial incentives, such as subsidies—whether for producers or consumers—and taxes on food products.

These approaches are now proving insufficient to drive a large-scale transformation in dietary habits. The responsible consumption approach faces persistent limitations, including the gap between attitudes and actions and the consumer's restricted ability to change their habits within an unchanged food system. We return to these points when introducing our analytical framework. At the same time, the proactive use of price-based instruments, such as taxes, is unlikely in the near future—or at the very least, remains uncertain—due to the lack of necessary political and social conditions. Moreover, pricing mechanisms alone cannot address the many dimensions of a food transition.

This report provides a complementary perspective to these two main approaches, not by rejecting them but by repositioning them within a broader analytical framework of food practices. Eating is not merely an isolated act of consumption; it is a daily individual and collective act, essential from a physiological perspective and a key driver of social connections, exchanges, representations, and cultural support. As such, it is embedded in a wider set of practices and routines (such as going to work or how one spends a Sunday, etc.), which are shared within households and social groups. In these contexts, food holds a place that, if not central, is undoubtedly essential.

TRAMe2035 (in French ***Transition des Régimes Alimentaires des Ménages à 2035***, or Transition of Household Diets by 2035) **thus proposes to analyse the food transition through the lens of the *food environment* and practice theory in social science**. As we see below, this approach helps to reveal the constraints and opportunities that shape dietary practices. It also accounts for social diversity, providing a valuable foundation for informing public action.

TRAMe puts the focus on meat consumption as a case study of social change

Given the diversity of the challenges and objectives outlined above, and the impracticality of applying the proposed approach to all aspects of the food transition, TRAMe focuses on one key issue: reducing meat consumption. While the rationale for this focus is detailed below, it is important to emphasize from the outset that the methodological approach tested here is designed to be applied to other food-related subjects. This is made possible, in particular, by the granularity of the typology of food practices on which it is based.

So, why focus on reducing meat consumption—in addition to the resource-related issues already mentioned?

The consumption of fruit, vegetables and pulses, as well as food accessibility, is already being addressed by public authorities through specific policies and is generally less controversial. By contrast, meat consumption remains a politically and socially sensitive issue. Addressing it requires a detailed understanding of social groups, consumption patterns, and transition dynamics to enable informed and constructive debate.[1] In this context, TRAMe seeks to better understand the mechanisms driving changes in eating habits, providing a basis for discussing possible trajectories and the levers that could support them.

At the same time, meat consumption sits at the intersection of environmental, health-nutrition and socio-economic issues. From an environmental perspective, reducing the consumption of animal protein plays a central role in enhancing the sustainability of the food system in Western Europe, provided it is accompanied by qualitative improvements in production methods (van Selm *et al.*, 2022; van Zanten *et al.*, 2023). In terms of nutrition and health, excessive consumption of meat other than poultry, particularly processed meat, is recognized as a key concern in the French National Nutrition and Health Programme and in most studies. Finally, from a socio-economic perspective, the French meat sector faces significant challenges, including declining competitiveness and low remuneration for producers in the ruminant sector, which must be taken into account.

It is important to note that the approach developed here, which combines the food environment and practice theory, does not fully address these socio-economic issues. Tackling them requires linking changes in food demand to transformations across all sectors. From this perspective, this study should not be viewed in isolation but as one component of a broader foresight exercise on the transformation of the French meat sector, spanning the entire supply chain from upstream to downstream. This study builds on the publication of an assessment of the sector based on a baseline scenario for 2035 (Aubert & Poux, 2024) and precedes the publication of a series of scenarios on the evolution of the supply of meat products, scheduled for the second half of 2025.

This analysis of the sectors highlighted the particularly sensitive issue of ensuring consistency between changes in meat supply and demand in France. Poultry, pork and beef are, to varying degrees, less competitive than their main European and international competitors. Over the last 15 years, this has led to a dual phenomenon of declining production and increasing imports—at different rates depending on the sector—despite relatively stable per capita consumption. All other factors remaining equal, a reduction in meat consumption would primarily affect French production, further deepening the crisis facing the sector. However, the challenge is quite the opposite: to view food demand not only as a driver of dietary transition but also as a lever for agricultural and agro-industrial transition. This is why production, processing and consumption must be considered together. While this report will only partially address this issue, focusing on the promotion of French-origin products as a tool for guiding supply, it remains central to the broader approach developed by IDDRI and its partners.

With TRAMe2035, we aim to answer the following question: **can an acceptable, ambitious and feasible trajectory for dietary transition be established by 2035? In particular, how can diets shift towards lower meat consumption?**

1 It is important to note that this study focuses on meat consumption and does not address dairy or seafood products, which would require separate studies.

The first part of this report develops the objectives and ambition of this food demand scenario in greater detail and outlines the broader context—considering societal trends and changes in dietary habits—within which the TRAMe scenario is set. The second part details the prospective methodology, including the theory of changing dietary behaviour, which is at the heart of this work, as well as the data used and the stages of constructing the scenario. The results of this prospective study are presented in the third part, focusing on the proposed changes in the food environment and their impact on the dietary behaviours of different social groups. In particular, we identify four main ways in which dietary habits could evolve across the 12 social groups analyzed, and show that the combined effect of these differentiated trajectories could lead to a reduction in meat consumption of around 15% by 2035. Finally, the concluding section examines the scope of these results from both a political and methodological perspective.

The 12 trajectories of change (socio-narratives) are presented in *Book 2—Socio-narratives of food transition for 12 social groups*, while the full methodology is detailed in *Book 3—Methodological framework* of TRAMe.


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A NOVEL FORESIGHT APPROACH FOR ANALYSING TRANSITION TRIGGERS

As mentioned in the introduction, existing forecast exercises do not provide insight into how the transition towards a healthy and sustainable diet might unfold. What models of change could make this transition possible? Can diets evolve in line with the needs of the ecological transition, particularly regarding meat consumption? Can this shift occur while respecting the aspirations of diverse social groups? In other words, is initiating a dietary transition feasible, credible and possible? The need to address these questions shaped the nature of the foresight exercise undertaken in this study.

Key scenario choices in TRAMe

A normative scenario for changing diets, with a quantification of meat consumption

By focusing on meat consumption, TRAMe contributes to the debate on the transition towards healthy, sustainable and universally accessible diets. Adopting a broad perspective, it considers all dietary behaviours in relation to ecological and health challenges (examining the composition of people's diets, places of consumption and distribution channels), while placing particular emphasis on animal production due to its multi-criteria importance as mentioned in the introduction. Discussions around meat consumption are particularly sensitive, often clouded by confusion over figures and orders of magnitude. This reinforces the need for precise quantification of the scenario, ensuring a well-informed debate on this commodity.[2]

The TRAMe scenario is therefore normative, in that it does not explore all possible developments but focuses on those that would enable a significant reduction in meat consumption in line with ecological transition objectives. In this sense, the scenario is less about demonstrating that a specific target is achievable and more concerned with reinforcing the idea that a shift in meat consumption is possible.

The decision was made to focus quantitatively on "less meat" as this is the core issue in the scientific debate and already presents a significant methodological challenge. However, the "better" dimension is not overlooked: it is reflected in several group trajectories and in considerations regarding changes in food environments. Nonetheless, this aspect is not central to the quantitative results of TRAMe, as it would have required data per cut of meat and/or certification labels, an approach that is beyond the scope of this exercise. Furthermore, it is important to remember that the evolution of French livestock sectors is central to the broader collective project in which TRAMe is involved and has already been the subject of a first publication proposing an assessment of this sector, supported by a baseline scenario up to 2035 (Aubert & Poux, 2024). This will be supplemented by the publication of a series of scenarios on the evolution of meat supply, scheduled for the second half of 2025. Finally, the nutritional compatibility of changing diets with health considerations is assessed by analysing key nutritional indicators (see **Box 8** in the Appendix).

A 2035 scenario to illustrate possible triggers that would not cause major disruptions

The TRAMe approach allows us to explore the manoeuvre room available in French society today, and the conditions required to trigger change. Our method involved analysing the current situation and existing trends to understand how they might evolve by 2035. Rather than constructing a "baseline" scenario, which is particularly useful when a sector is undergoing rapid change and serves as a relevant basis for comparison, we opted for a different approach. For example, if meat consumption was already in decline, a baseline scenario would help quantify TRAMe's additional effect by 2035. However, consumption has remained relatively stable in recent years and is sometimes even perceived as resistant to change in public debates.

Finally, we focused on a single scenario, as the key question is whether dietary habits can change. However, future research could usefully explore multiple scenarios based on the same approach to the food environment.

Given the questions motivating TRAMe, this scenario was designed as a plausible future, deliberately avoiding reliance on major disruptions or crises: whether in the form of significant societal shifts with uncertain consequences or major geopolitical changes. As such, it does not aim to describe an ideal food system.

This commitment to constructing a plausible scenario also justified choosing 2035 as the time horizon: it is neither too near nor too distant. This timeframe makes it possible to account for the inertia of the system while allowing for significant changes to be considered. Additionally, this relatively close horizon enables detailed quantification and an analysis of social diversity, which would be more challenging over a longer-term horizon due to shifts in social group structures.

We see TRAMe as a tool for exploring possibilities as they are beginning to take shape. This exercise seeks to make the triggering of a transition trajectory sufficiently

2 For other food products, there is no quantification for 2035 as precise as that for meat. Quantifying the consumption of milk and dairy products would have been useful, but this is particularly complex due to the wide variety of products containing milk or its derivatives. As a result, dairy consumption is not included in the 2035 quantification.

plausible to foster meaningful discussion, with all stakeholders, on the conditions that would enable each social group to develop a "good diet" within new food environments.

The following section presents the trend analysis that informed the TRAMe scenario.

Societal trends that have been broadly extended

Eating habits are shaped by broader social and economic dynamics. Dietary practices are interlinked, and even interdependent, with these wider spheres (Spurling *et al.*, 2013). For example, an increasing share of household budgets allocated to housing can have knock-on effects on other expenditure, leading to reduced car use and altered purchasing patterns, etc.

To account for this broader context, we drew from research published by the Centre for Studies and Strategic Foresight (CEP), French Ministry of Agriculture (Hérault *et al.*, 2019, 2023a, 2023b, 2023c). One study in particular (2023a), based on a literature review, identifies six major societal transformations[3] over the past two to three decades and their implications for dietary habits: values, consumption patterns, purchasing and food preparation methods. This study is particularly relevant to our analysis and is consistent with our methodology, which is inspired by practice theory (in sociology). This perspective situates individual actions within their broader social and infrastructural context.

In the following sections, we describe the six major trends identified by the CEP, supplement them with additional references where relevant**, and assess their implications for our 2035 scenario,** including, where applicable, how they vary across social groups. It is important to note that, from the perspective of lifestyle evolution, the 2035 horizon remains relatively short term. As a result, structural inertia is expected to predominate in relation to sources of disruption. This reinforces the rationale for positioning TRAMe as an extension of these six trends.

The feminization of society

The feminization of society, as described by the CEP (2023a), **involves two main phenomena.** First, greater access for women to social spheres through the feminization of the workplace; and second, the broader diffusion of values traditionally associated with femininity across society. This shift is reflected, for example, in a significant reduction in the amount of time women in spend on domestic tasks—which declined from an average of 250 minutes per day in 1985 to 183 minutes per day in 2010 (Champagne *et al.*, 2015).

However, this development does not appear to be reversing gender roles in the domestic sphere, as parental and household responsibilities in 2023 still fall largely to women. The reduction in women's domestic time has not resulted from a more equal distribution of tasks (since the time men dedicate to domestic work has remained stable over the same period), but rather from an overall decrease in the time allocated to domestic tasks. In relative terms, women still accounted for two-thirds of domestic work in 2011 (Champagne *et al.*, 2015)[4], and 75% of food-related household tasks, including meal preparation, are carried out by women (Etilé & Plessz, 2018). Moreover, the time spent on food-related activities varies by socio-economic status: according to Caroline Méjean *et al.* (2017), among men, employed and manual workers spend less time cooking than those in managerial positions. In contrast, women from higher socio-economic backgrounds spend less time cooking but tend to view it more positively, whereas for working-class women, employees, and those with lower levels of education, it is more often perceived as a "chore".

3 The feminization of society; changing relationship with the natural world; increasing individualization of human relationships; growing segmentation of the social system; evolving perceptions of time; and rising sensitivity to health issues.

4 The factors contributing to the decline in women's domestic time provide an interesting case study of how practices interact with the socio-economic context. According to Clara Champagne and colleagues (2015), behavioural changes account for 80% of the decrease. These shifts are primarily linked to a relaxation of cleanliness standards and changing perceptions of what is considered "appropriate" in terms of housekeeping, as well as to the possibilities of outsourcing domestic tasks through home delivery, the purchase of prepared meals, and semi-processed products. These developments, which affect all women, have had a greater effect impact than the rise in paid domestic employment, which only concerns a fraction of the population. The remaining decline in domestic time can be attributed to the effects of population composition (particularly shifts in the professional status of women, and the evolution of family structures). Finally, the availability of household appliances has played only a marginal role in these trends.

The feminization of society should not therefore be interpreted as a "defeminization" of the domestic sphere. In terms of values, the authors of the CEP identify three sets of values traditionally associated with femininity: health, well-being, family and care; ecology and respect for nature; and empathy, collaboration and listening. These values intersect with other trends and influence relationships with food. However, this shift coexists with the fact that women have a (socially-constructed) specific relationship with food (their own and that of others, especially their children), which some authors suggest plays a dominant role in their consciousness (Fournier *et al.*, 2015). Women are therefore more attuned to nutritional discourse and its expectations, have higher dietary standards, are more likely to restrict their intake, and tend to perceive the mental burden of food as more restrictive (Dupuy, 2017; Fournier *et al.*, 2015; Hérault *et al.*, 2023a). These dynamics may be amplified by the growing influence of the nutrition-health norm in shaping perceptions of food, particularly infant nutrition, through narratives around home-cooked meals, breastfeeding, and the "superiority" of raw ingredients, etc. (see trends 2 and 3).

In projected trajectories of dietary habits through to 2035, we therefore hypothesize that women will continue to play a central role in food-related tasks (such as shopping and meal preparation), which grants them a degree of influence within their households. Additionally, due to their stronger adherence to nutritional and aesthetic standards, women are more likely than other social groups to modify their diets (as they tend to have a greater predisposition towards healthy eating).

The affirmation of health as a central normative reference

Health, once primarily an individual issue, has gradually become a social issue managed by the state. This shift is evident in policies aimed at reducing smoking and excessive alcohol consumption, which employ various levers (physical, economic, socio-cultural and cognitive)[5] to reduce the appeal of such behaviours. The authors suggest that health has now entered a new phase, one in which it is increasingly integrated into the broader concept of well-being. In this framework, the pursuit of comfort, health and quality of life is viewed as a "means of fulfilment", ingrained in the mindsets of individuals. As a result, achieving "optimal" health is increasingly framed as a moral obligation, driving behaviours such as preventive care, self-monitoring, self-medication, physical activity, and the adoption of specific diets. This norm in turn reinforces the individualization of behaviour: each person has a responsibility to optimize their own health. The growing popularity of "free from" diets (e.g. gluten-free, sugar-free, etc.), both in consumer discourse and purchasing behaviour,[6] is one sign of this trend. However, several countervailing trends (such as the continued consumption of ultra-processed foods and red meat - see 1.3.1.) along with the rising prevalence of diet-related diseases, suggest that this "normative reference" remains more of an aspirational ideal than a widespread daily practice.

In some trajectories of change, health plays a central role, whether due the proximity of certain groups to health standards (nutrition, ageing well, body aesthetics, etc.), the discourse promoted by public authorities, or the expansion of dedicated market segments.

The growing need for "natural"

The growing focus on health is accompanied by a gradual shift in society's relationship with nature. The first sign of this trend is the increasing demand for what is perceived as "natural". Consumers seek out products (e.g. raw, minimally processed, minimally packaged foods), and purchasing methods (e.g. short supply chains) that are considered more "real" or "authentic". According to the authors (2023b), this trend is partly driven by repeated food crises and the growing (both physical and cognitive) distance between consumers and their food, all within the broader context of "eating well". Together, these factors contribute to a loss of dietary reference points and heightened feelings of frustration or guilt, for which the idea of "naturalness" and its various expressions provide a form of escape. The appeal of naturalness is further reinforced by its accessibility—it is not inherently tied to social or economic status, particularly when associated with

5 Measures to combat smoking include: the gradual increase in tobacco taxation, and consequently the price of a packet (economic); the ban on smoking in public places and places open to the public (physical and sociocultural); the ban on all tobacco advertising since 1991 (socio-cultural); and the display of shocking messages and images on packets (cognitive).

6 *Local* became the top consumer demand in 2021 (LSA, 2022). "Free range", "no added sugar" and "fair trade" segments are growing, benefiting from a "simple and accessible" promise, while organic is declining sharply across several product categories (LSA, 2024).

local food systems.[7] Naturalness then becomes synonymous with "common sense" and proximity (Hérault *et al.*, 2023b). However, it is important to note that these changes in values and representations often struggle to translate into tangible action, as they compete with other key factors such as the acceleration of the "pace of life" and the inertia of established practices. As a result, the consumption of ultra-processed foods remains very high in France: in 2015, they accounted for 35% of the daily calorie intake of adults and 45% for children (Fardet *et al.,* 2021).

This trend has significant implications for another issue: the ethical debate surrounding animal husbandry and slaughter practices. This debate has been shaped by advances in science (greater recognition of animal suffering, sensitivity and sentience), law (changes in the status of domestic animals) and evolving societal attitudes (growing concern for animal welfare). Livestock—both their production and consumption—are at the centre of intense ethical, environmental and nutritional debates (Legendre *et al.*, 2017; Magdelaine *et al.*, 2018). The trajectory of these discussions could follow several paths, as identified by foresight studies (Bidaud *et al.*, 2016; Delanoue *et al.*, 2018). According to the CEP (2019), the evolving relationship with livestock farming and meat consumption has led to two main developments: a) changes in dietary habits, including diets with little or no meat/animal products and the development of production systems that align with animal welfare principles; and b) an increase in both individual and collective commitments, ranging from anti-speciesism and carnism, to the defence of meat consumption.

In our trajectories of change, the appeal of naturalness is driving a growing demand—among certain groups and subgroups—for minimally processed, seasonal food, with a focus on fruit and vegetables. In terms of distribution methods, direct purchasing and alternative supply chains are expanding, leading to changes in supermarkets (new product offerings and hybridized distribution models, etc.). These trends vary across different social groups.

7 Unlike "organic" or environmentally-friendly labels, which can create "symbolic boundaries" between social groups; prices for organic food can act as an economic barrier to purchase (Brocard *et al.,* 2022).

Box 1.

What about the perception of plant-based alternatives to meat?

Plant-based alternatives to meat cover a wide range of products, such as legumes (beans, peas, lentils, etc.); minimally processed "traditional" products such as tofu or tempeh; processed or cooked products such as seitan or falafel; and finally ultra-processed substitutes (sausages, nuggets, burgers, etc.). Consumer perceptions of these alternatives are shaped by overlapping ideas of what is "healthy" or "natural", while at the same time reflecting contrasting views of *plant-based alternatives* to animal products. Tofu is the product most readily associated with this type of product (Michel *et al.*, 2021), although it is not necessarily considered an attractive option (Varela *et al.*, 2022). However, it is not subject to the same negative judgements as meat substitutes, which relate to their level of processing, the presence of additives or a perceived "unnatural" quality (Varela *et al.*, 2022). Some substitutes (e.g. vegetarian nuggets or vegetarian sausages) are perceived as more *artificial* (vs. *natural*) than their meat equivalents, and also as more *feminine* (vs. *masculine*). In terms of *healthiness*, sausages are judged similarly whether they are of animal or plant origin, while vegetarian nuggets are perceived more favourably than their meat-based counterparts. Contrary to the broader trend towards individualization, attitudes towards plant-based alternatives are influenced by the context of consumption and peer groups. Positive perceptions are more common when meals are eaten alone, and much lower during traditional social occasions such as a Sunday family dinner or a barbecue (Michel *et al.*, 2021). Finally, perceptions differ across socio-demographic groups, with more negative attitudes generally observed among men, people with lower educational attainment, and older individuals (Carlsson *et al.*, 2022).[1]

1 The socio-demographic characteristics mentioned have been associated with more negative perceptions of alternatives, whether plant-based or lab-grown.

The individualization of societies

Confronted with the imperative of "self-invention" beyond social structures and collective norms, consumption becomes a key space for self-expression. This generally involves identifying with a new group and adopting its specific practices and representations. In this context, consumption—particularly of food—serves as a means of differentiation and distinction. It is also a way to seek autonomy from one's original social structures (e.g., family, social group) by engaging in other social spaces (e.g., work, peer groups). This search for distinction manifests in various ways, such as adopting "new" diets, purchasing personalized products, and engaging in experiential consumption, all of which are increasingly catered to by commercial offerings. These developments, in turn, shape new forms of self-expression. However, rather than leading to a fragmentation of dietary lifestyles within groups, the individualization of society is primarily reflected in the growing importance of status and identity in food choices.

In our trajectories of change, this trend is taking shape through an increasing segmentation of the market and food offerings (for example, supermarket shelves are becoming more themed). Out-of-home consumption continues to grow, along with food concepts that emphasize the experience (e.g., shared kitchens, local supply chains) or innovation (e.g., plant-based catering, ready-to-eat or meal prep boxes). In short, the logic of distinction remains central.

The development of social segmentation, communities and networks

This trend is closely linked to the previous one. **The CEP study highlights that major institutions, such as the traditional family, marriage, religion and work, are losing their normative influence due to changing lifestyles and social perceptions**. In terms of food habits, a shift is underway: snacking during the day and eating alone are becoming more prevalent, while the tradition of three shared meals a day is declining. Similarly, regional cuisines and certain staple products (e.g. bread, cheese, wine) are being replaced by new consumption patterns (CEP, 2019). Rather than signalling the outright disappearance of these institutions, this process of social and dietary "de-institutionalization" points to a transformation—one that is reshaping how people form communities, create social ties, and engage with food.

The range of dietary practices, preferences, discourses and debates surrounding food is expanding, calling into question the "traditional dietary model". This logic of segmentation is also accompanied by a growing emphasis on group identity: "we are eating more according to the group we belong to or identify with, rather than based on personal taste" (CEP, 2019). As a result, the dominance of a single dietary model is giving way to a plurality of communities shaped by various dietary identities—whether environmental, ethical, religious, medical or nutritional. However, it should be noted that the traditional dietary model remains resilient in France. In 2023, the organic and halal markets accounted for only €12 billion (Agence Bio, 2024a) and €7 billion (Younan, 2024) in sales, respectively, out of a total food expenditure of around €300 billion (Insee, 2024a). The proportion of vegetarians remains low at just 2 to 3% (FranceAgriMer & Ifop, 2021), and the amount of time dedicated to food-related activities has remained relatively stable.

This trend highlights the relevance of our methodological approach: projecting 12 social groups (and their sub-groups) to 2035, rather than focusing on an average individual. Each of these groups responds differently to shifts in the market and changes in food standards. New segmented offerings are emerging, and public authorities are tailoring their approaches to account for these differences. Finally, the social spaces outside the home play a key role in shaping food attitudes, a role that is reflected in the trajectories of certain social groups.

Acceleration of the "pace of life"

Rosa (2013) analyses **this acceleration of technology** (transport, communication, etc.), **social change** (lifestyles, family structures, etc.) **and of the individual "pace of life" as a defining characteristic of modernity**. As the authors of the CEP (2023c) highlight, these shifts modify lifestyles, influencing consumption patterns, relationships and daily practices by reshaping how people relate to time. Time is becoming increasingly specialized, i.e. the allocation of time (domestic, leisure, work, rest, etc.) varies more depending on socio-demographic factors. Additionally, these different categories of time are becoming more distinct—for example, work time and social time are

less intertwined than before. Furthermore, the time available to individuals is becoming more condensed: more activities are squeezed into the same period, sometimes even overlapping, facilitated by household technologies (such as appliances and computers). As a result, free time—though it has increased since 1999—is often overvalued, particularly in relation to collective or domestic time. In parallel, statistics show that time spent eating in France increased by 11 minutes between 1986 and 2010, even as the consumption of ready meals and food delivery services expanded. Moreover, mealtimes in France have remained relatively synchronized throughout the day, unlike other high-income countries. In 2010, half of the French population still ate lunch at 1pm, just as they did in 1986 (De Saint Pol, 2005; De Saint Pol & Ricroch, 2012).

We hypothesize that in ten years, the proportion of time spent eating will remain largely unchanged. For most groups, it is unlikely to increase, while for those already facing significant time constraints, it will continue to shape their dietary choices. As a result, the availability of processed and fast food will remain a key driver of dietary changes.

Food consumption trends in France

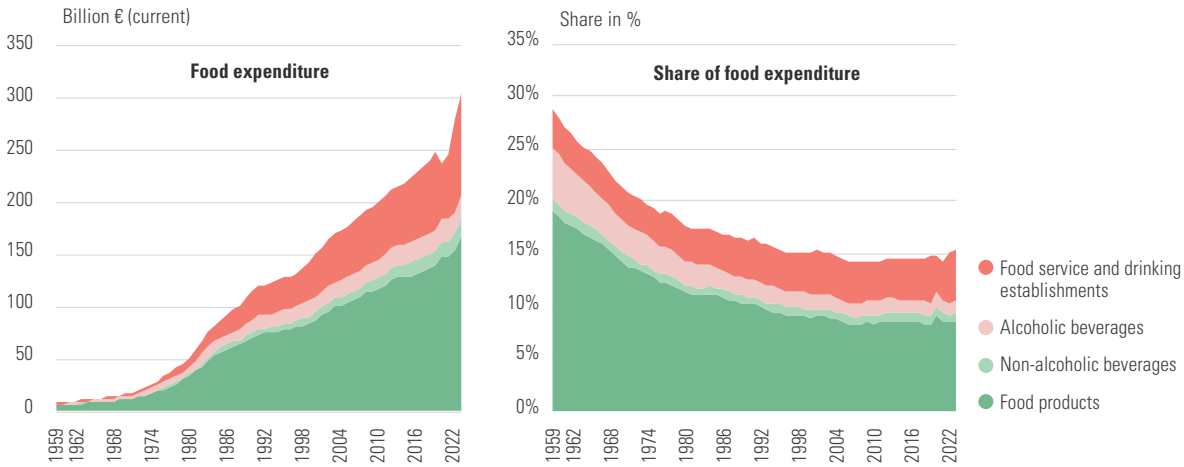
Without aiming to be exhaustive, this section outlines significant past trends in food consumption.

Major general trends

In 2023, French households spent a total of approximately €300 billion on food. While this figure has risen significantly in absolute terms since 1960, the share of food in total household expenditure had halved (from 30% to 15%) **by the early 2000s and has remained relatively stable since** (**Figure 1**). Indeed, food expenditure has grown at only half the rate of overall consumer spending (INSEE, 2015). At the same time, the gap between the most affluent and the least well-off in terms of the proportion of total spending allocated to food has narrowed (from 17 percentage points in 1979 to 4 in 2017). However, lower-income households still devote a larger share of their budget to food.

With the acceleration of the pace of life, **food consumption increasingly relies on processed food and ready-made meals rather than raw ingredients.** Between 1960 and 2015, the volume of ready meals

FIGURE 1. Food expenditure (left) and share of food expenditure in total actual consumer expenditure (right) in France from 1959 to 2023



Source: Insee, 2024a.

grew by 4.4% per year, compared to just 1.2% annual growth in at-home food consumption (INSEE, 2015). The share of food expenditure, excluding beverages, in the food service sector has also risen sharply (from 16% to 37%) since 1960 (**Figure 1**). This is mainly due to prices rising faster than those for at-home consumption, alongside a shift from drinking establishments to restaurants and canteens (Insee, 2015).

Today, **60% of food purchases are made in supermarkets** (supermarkets and hypermarkets), 20% in specialist shops (bakeries, butchers, etc.), 8% in small shops and frozen food stores, 7% outside shops (markets, online), and 5% through other sources, including direct sales (INSEE, 2024b). Hypermarkets, introduced in France the 1960s, became the dominant food retail channel in the 1990s and remain so today (35%), despite facing increasing challenges (FNAU, 2022). Discount supermarkets, which did not exist before the late 1980s, now account for 30% of all supermarkets in France (INSEE, 2023). Short supply chains and direct sales, though difficult to quantify statistically, represent only a small share of total food expenditure.

In recent decades, dietary habits have also been shaped by the rise of labels and claims designed to differentiate products. The first labels appeared in the 1930s to certify origin and combat fraud, notably with the introduction of France's *Appellation d'Origine Contrôlée* (AOC) certification, which guarantees the geographic origin and quality of certain products. Their recognition grew from the 1960s onwards (CEP, 2024). Since then, both the number of labels and the scope of the certification have expanded significantly, including the introduction of the Organic Agriculture label in the mid-1980s.

Total purchases of organic products (certified under France's *Agriculture Biologique*, AB, label), excluding the food service sector, tripled between 2012 and 2020 (from €4.3 billion to €12.8 billion), rising from 3% to 7% of total food expenditure (including beverages). However, this trend was interrupted in 2020, with organic purchases declining both in absolute terms (€12 billion in 2023) and as a share of total food expenditure (6% in 2023) (Agence Bio, 2024b; Insee, 2024a). This reversal is largely attributed to inflation,[8] which has led households to opt for lower-cost alternatives—although the price gap between organic and conventional products has narrowed for certain products, such as butter, since 2020 (FranceAgriMer, 2023). While the market share of geographical indications is generally lower than that of organic products, it surpasses it in key segments such as cheese (16%) and poultry (8%), and dominates in wine (95%) and spirits (31%) (INRAE, 2025).

Focus on meat consumption

Average per capita meat consumption has increased nearly fourfold over the past two centuries, reaching 86 kgCWE[9] per person. Most of this growth occurred between the 1930s and 1990s (**Figure 2**). However, between the late 1990s and early 2010s, average meat consumption declined by around 10%. While it has since stabilized, analysts in the mid-2010s predicted that this downward trend would continue (Blezat Consulting *et al.*, 2016).

Beyond overall meat consumption levels, the distribution by meat type has also changed significantly. Average poultry consumption has more than tripled since 1960 and has shown steady growth, whereas consumption of other meats has been declining for the past 20 to 40 years. Poultry, which accounted for just 15% of total meat consumption in 1960, surpassed beef in the 2010s and, if current trends continue, is expected to overtake pork consumption by around 2028.

Another notable shift in meat consumption is the replacement of whole poultry and traditional cuts of meat (especially beef) with more processed and standardized products, such as mince, charcuterie, cured meats and nuggets. Minced beef exemplifies this trend and the growing demand for convenience. Introduced in the late 1950s, it now accounts for around half of all beef consumption (Aubert & Poux, 2024).

Note: the Lepage 2002 data are less reliable (six data points over nearly 200 years) compared to Agreste and FranceAgriMer data, which provide one data point per decade in 1960 and 1970, then one per year from 1980 onwards.

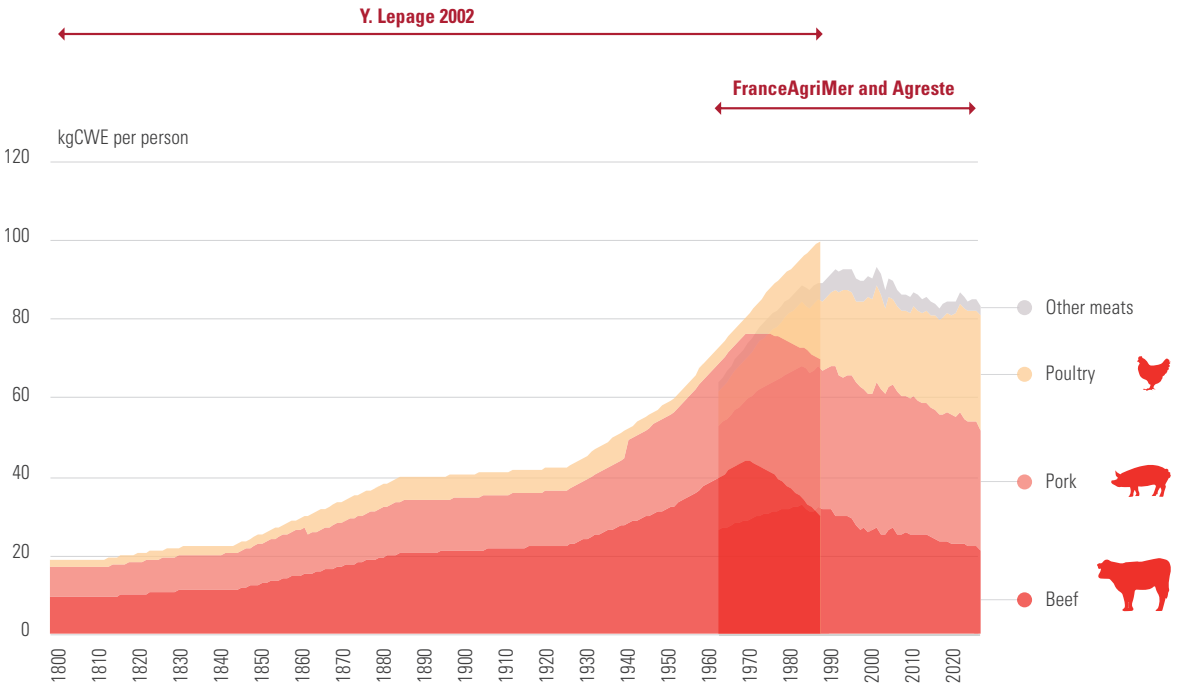
8 See also our analysis https://www.iddri.org/en/publications-and-events/billet-de-blog/how-relaunch-organic-sector-we-first-need-reboot-system

9 "Kilogrammes carcass weight equivalent" (CWE), which includes losses and waste such as bones, fat, etc.

The role of meat in today's French diets, often perceived or presented as traditional, has in fact largely been shaped over the last 50 years and continues to evolve. It is also worth noting that analysing trends in milk and dairy consumption would be both useful and insightful. However, this is significantly more complex due to the wide variety of products that contain milk or its derivatives, making it harder to track milk consumption patterns.

Despite this historical trajectory, current levels of meat consumption in France are sometimes portrayed as unchangeable. However, other food products illustrate how consumption can decline sharply, while maintaining a central role in dietary practices. A key example is alcoholic beverages, the consumption of which has more than halved since 1960, dropping from 200 to 80 litres per person per year on average. This decline has been driven primarily by reduced consumption of everyday wines and cider, while demand for quality wines and champagne has increased (INSEE, 2020). Patterns of alcohol consumption have also significantly shifted. The proportion of adults consuming alcohol daily fell from 24% in 1992 to 8% in 2021 (Andler *et al.*, 2023).

FIGURE 2. Evolution of average meat consumption per person in France since 1800



Note:
The Lepage 2002 data are less reliable (6 data points over a period of almost 200 years) than the Agreste and FranceAgriMer data (1 data point per decade in 1960 and 1970, then 1 per year from 1980).

Source: I4CE/IDDRI based on Agreste, 2020; FranceAgriMer, 2024a; Lepage, 2002.


SODA
DELIVERY
LOCAL
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LOCAL

APPROACH.
PRINCIPLES AND METHODOLOGY OF SCENARIO DEVELOPMENT

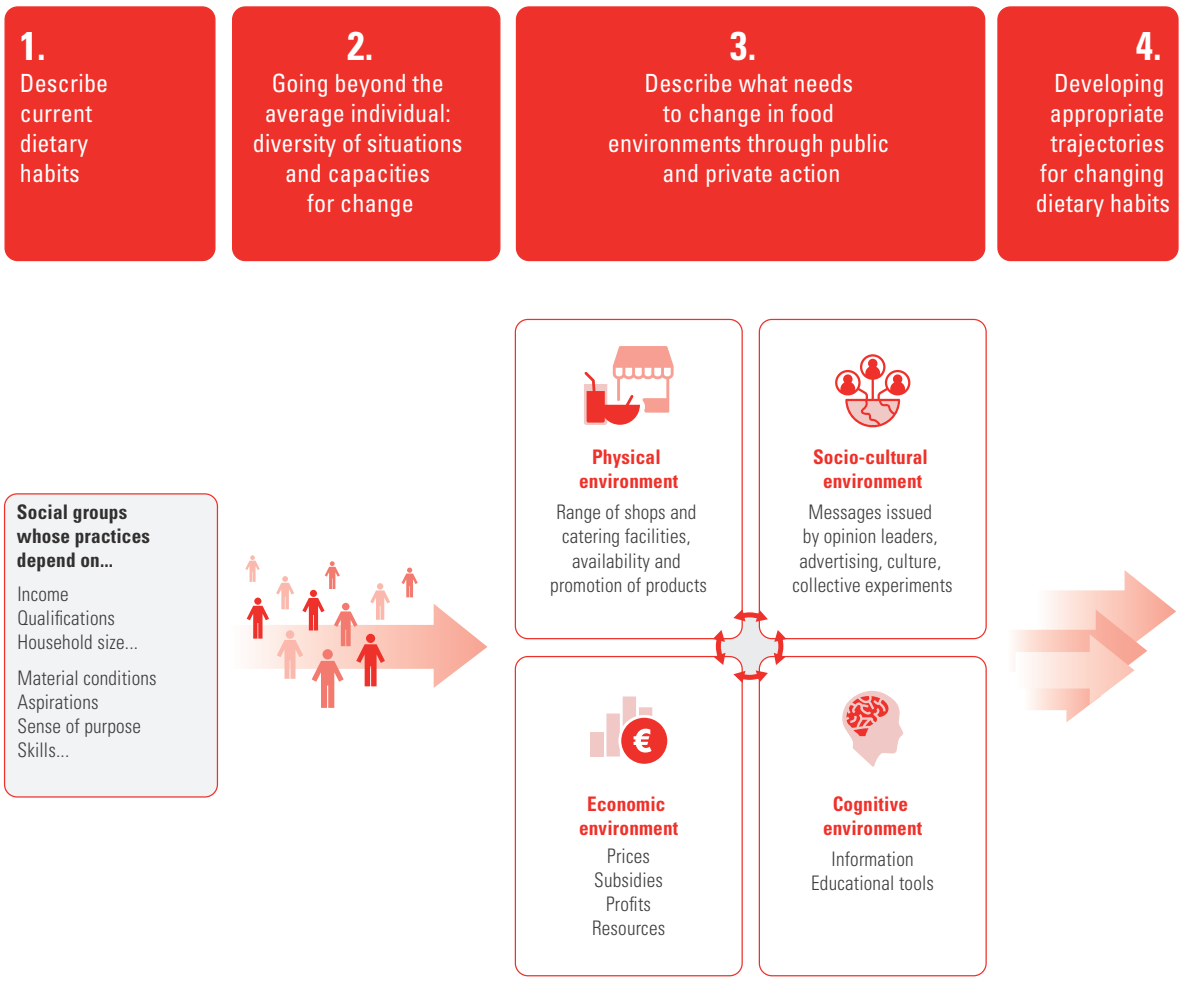
This section presents the main elements of the methodology developed and applied to produce the TRAMe scenario. A more detailed description can be found in *Book 3—Methodological framework,* and in the IDDRI Issue Brief, *"Where there's a way, there's a will: Social conditions for achieving the ecological transition—A lifestyle approach"* (Saujot *et al.,* 2024). This is the result of several years of research on food conducted by IDDRI and I4CE.

The first section introduces our model of change, i.e. the approach we have used to translate scientific knowledge on food into a framework suitable for forward-looking analysis. This model is grounded in a sociological perspective on food. The two core principles outlined below provide the foundation for this approach and have shaped the operational methodology used to develop TRAMe, which is detailed in the second section.

Our model of change: two key principles of the TRAMe scenario

In summary. *Behavioural change models that rely on individual awareness and a responsible consumer approach fail to meet the needs of the transition, as they do not account for (and therefore do not impact) the diverse factors that shape behaviour. Here, we adopt an alternative analytical framework drawn from the literature, which emphasizes the role of food environments—physical, economic, socio-cultural and cognitive—in determining dietary habits. Consequently, food must be understood as a social practice, meaning it is shared with others and routinized. In other words, it follows automatic patterns that reduce the need for constant reinvention. This practice evolves in response to the environment in which it takes place, and the social context in which it is shared. Thus, driving the transition requires coordinated action across multiple levers of influence on food environments, while recognizing the diversity of social groups and their dietary practices. This model of change is summarized in* **Figure 3**.

FIGURE 3. TRAMe model for driving change



Source: Saujot *et al.*, 2024.

Principle 1. Acting on food environments to change practices

Widespread individual awareness is unrealistic

In the field of food consumption (Brocard & Saujot, 2023; I4CE, 2023), as well as in broader lifestyle choices (Coulangeon *et al.*, 2023; SGPE, 2024), **there is a significant gap between intentions and actions**: consumer behaviour and practices are not primarily driven by stated ecological preferences or concerns.

To understand and address this discrepancy, it is necessary to reconsider the narrative of the "responsible consumer". This perspective assumes that growing awareness of environmental and health issues will lead to so-called virtuous behaviours, which will gradually spread from early adopters to the population as a whole. In this perspective, public authorities and private actors raise awareness among citizens, while the media disseminates emerging norms, fostering a positive attitude toward sustainable behaviour. This shift is reflected in opinion polls, where people express greater willingness to pay more for food, consume less but higher-quality meat, choose more organic produce and favour short supply chains, etc. In turn, this growing demand would put pressure on industry and retailers to adapt their offerings. The concept of the "consumer-citizen" embodies this vision: through their individual choices, supported by the public authorities (information, labels, etc.), committed and responsible consumers are seen as driving the transition forward.

However, this perspective presents an oversimplified view of society and lifestyle changes, underestimating the impact of several mechanisms:

- **the rigidity of food environments**, i.e. the physical, economic, socio-cultural and cognitive conditions that shape our eating habits. These constraints prevent the concerns of citizens (or public authority imperatives) from automatically translating into action (Brocard & Saujot, 2023) (see below);
- **the asymmetries of power, information** (given the abundance of information, which sources should be trusted and how can they be compared) **and influence** (e.g. the resources allocated to marketing and advertising are vastly disproportionate to those for public campaigns) **within food systems** (SAPEA, 2020). These asymmetries make it unrealistic for the consumer to truly "arbitrate" (Dubuisson-Quellier, 2016) when faced with the existing food supply and to have the power to make private actors comply with their wishes;
- the **fact that this "ethical" consumption, often seen as a form of activism, is** *"deeply associated with a social group with which the majority do not necessarily identify"*, which inherently limits its spread (Dubuisson-Quellier, 2018). To assume a uniform diffusion of this "ethical" consumption in the rest of society overlooks the effects of segmentation and differentiation between social groups (Depecker *et al.*, 2023; Dubuisson-Quellier & Gojard, 2016).

The limitations of this approach help explain why it leads to real frustration for consumer-citizens. They are caught between contradictory demands, expected to drive the transition forward while the food environment remains unchanged. As a result, these committed consumers face either practical difficulties in aligning their actions with their convictions (particularly those with greater constraints), or a sense of disillusionment as they see their own behaviour evolving while society remains largely unchanged ("I change but nothing changes"). Compounding this frustration is the isolation of acting alone, with no guarantee that others will follow suit. Similar frustrations also exist within agricultural sectors, where producers see consumers demanding a transition but refusing to pay for it (e.g. quality labels or prioritizing animal welfare and environmental sustainability when making purchases). All these frustrations are highly counterproductive for the transition. Therefore, relying solely on the responsible consumer model is not sufficient—we must go further.

Food environments shape our diet, and this is where action must be taken

TRAMe inverts the well-known proverb to "where there's a way, there's a will", encapsulating a central principle: the "preferences" or "concerns" of citizens are not simply a reflection of their values, that would directly dictate their actions. On the contrary, individuals adopt practices that are accessible and meaningful to them from those available within their food environment. For the transition to be adopted by all, the perspective must be reversed. Rather than focusing solely on environmental "awareness", which often fails to translate into action, the priority should be to make "virtuous" practices possible, easy and desirable by transforming food environments.

We represent the food environment through four dimensions, encompassing all the factors that shape and influence dietary habits, making their evolution possible, accessible, understandable or desirable.

- **The physical environment** refers to the availability of food and the infrastructure that supports it, i.e. the points of sale, shops and restaurants, as well as their distribution, presence and geographical accessibility. It also applies to the spatial organization of a given retail space (e.g. canteen or supermarket). More broadly, it encompasses the living and shopping environment in which individuals operate on a daily basis.
- **The economic environment** relates to food prices and pricing mechanisms (e.g. margins, subsidies) as well as household resources. This system of costs and constraints determines which purchases are feasible, which can also influence the symbolic attachment to certain foods.
- **The socio-cultural environment** consists of the shared norms that structure eating habits within the various social circles and environments with which an individual navigates throughout their life (family and friends, the workplace and broader society). It also includes public discourses and messaging (advertising, public campaigns, cultural products, social media, etc.), which shape the perceptions of certain consumption practices. These norms and representations are internalized by individuals, influencing their adoption of certain practices.
- **The cognitive environment** refers to the information and data available to individuals, as well as the educational tools (e.g. labels, cookery courses, etc.) designed to help them process and apply this information. Individuals then draw on this knowledge and skillset to inform their food choices.

This concept of food environments, well established in the scientific literature, is increasingly being integrated into public policy at French, European and international levels (HCSP, 2023; HLPE, 2017; SAPEA, 2020). It has gained such prominence that it features in the conclusions of the Strategic Dialogue on the Future of EU Agriculture (European Commission, 2024).[10] However, in France, public action has so far been largely insufficient to drive change (Brocard & Saujot, 2023). One key lesson from this research is that consumers alone cannot bear the responsibility for the transition—far from it. Promoting healthier and more sustainable food choices does not therefore mean dictating new eating habits through regulations or awareness campaigns. Instead, it requires the mobilization of actors in the middle of the value chain (manufacturers, retailers, restaurant owners). This calls for a fundamental shift in both the discourse on the food transition and the strategy for its implementation.

Representing eating habits as a social practice

Building on the previous analysis, the TRAMe scenario applies the concept of "social practices", which involves two aspects:

- **Viewing eating behaviours as a practice helps explain why change is difficult and the transition is challenging, especially when environments are unchanged**. Practice theory, a field of sociology that has expanded significantly since the 1990s,[11] examines routine behaviours that individuals engage in without necessarily giving much thought to their actions in the moment. This theory defines a practice as the intersection of multiple interacting elements (referred to as "components" in **Figure 4**), combining aspirations, abilities and constraints. In other words, our daily actions are part of a coherent system that links both material factors (budget, equipment, shops, etc.) and immaterial ones (aspirations, social norms, etc.). The complexity of dietary behaviours is resolved on a daily basis through routine, reducing the need to constantly reinvent decisions. Routine is heavily shaped by the surrounding environment. It can even be said that individuals "*become the sum of the practices accumulated throughout their lives, as each practice, each enactment, contributes to shaping their identity (through the meanings it conveys), their skills, and what their bodies can do and know how to do*" (Depecker *et al.*, 2023). Thus, viewing eating as a practice offers key insights into how change can occur, with the components mentioned in **Figure 4** highlighting the areas where action is needed to drive this evolution.

10 "The European Commission and Member States should adopt demand-side policies, which address agri-food systems as a whole, to create enabling food environments where balanced, less resource-intensive, healthy diets are available, accessible, affordable and attractive" (p. 11).

11 Initially championed by Theodor Schatzki and Andreas Reckwitz, this field is now being explored by numerous consumer sociologists, such as Elizabeth Shove, Alan Warde, Sophie Dubuisson-Quellier and Marie Plessz, among others.

FIGURE 4. Diet can be broken down into four tangible practices, represented by six components

Food practices can be broken down into four more specific practices (e.g. shopping), the modality of which (e.g. shopping at the market or online) depends on the interaction between six components. The type of practice adopted by an individual will have structuring effects on their food consumption. For this reason, while the aim of this exercise is to understand how the consumption of animal products could evolve, the approach takes into account all dietary practices more generally.

EXAMPLES OF PRACTICAL ACTIONS

Meanings, aspirations
- I make the effort to buy directly from producers as an act of solidarity with them
- For me, eating organic means accessing the best there is
- I associate fruit and vegetables with a healthy lifestyle

Social norms
- I feel guilty when I throw away food
- I go to the market because everyone in my family does
- I make sure I have balanced and tasty food when I bring my lunch to work

Skills
- I don't know how to cook red meat, so I tend to eat chicken or simple cuts
- There's too much information in the shop, so I focus on the price per kilo
- I know you should eat five portions of fruit and vegetables a day

Preparing a meal

Shopping

Going to a restaurant - having food delivered

Eating at a place of study or work

Products, living and shopping environments
- My nearest supermarket doesn't have any appealing vegetables on offer, so I don't buy much there
- When I do online shopping, I always order the same thing: my shopping list is pre-registered
- In the canteen, I choose the first meal I see, as long as it looks appetizing

Financial constraints and resources
- €3 for two tins?! It was not on my list, but I'll take them, they might come in handy
- This month I'll need to go to the food bank because I had to get my car repaired
- I earn a lot of money and I want to show it. So we go out to restaurants every weekend

Links with other activities
- I find it increasingly difficult to walk, so I have everything delivered
- On Saturdays I have my hands full with the children's activities, so I shop here: it's practical and there's no queues at the checkout
- I finish work at 8pm: no time to prepare food

Source: Saujot *et al.*, 2024.

- **The practice-based approach also considers individual dietary acts as social phenomena**. Indeed, every food-related action involves values, aspirations and tastes that are not only personal but also shared with others; they are shaped by rules established by others, as well as by objects and infrastructure built by others. Thus, when I go shopping, I rely on an organization and infrastructure—for example, the shops available in my area—that I did not choose; I have access to a range of foods, made up of products that I did not choose; I have an awareness about which foods are the "right" foods to buy, based on knowledge which is largely determined by how I was brought up or the people I have met; I even have "skills" I can apply when shopping—knowing to look for certain labels, how to read ingredients lists—which have been passed on to me by others or via institutionalized information channels, etc. Thus, eating behaviours are best understood through the connections that link us to one another—our belonging to social groups and our shared food environments.

In TRAMe, eating is considered a social practice. However, this does not exclude key factors such as price (**Box 2**) and taste (**Box 3**).

Principle 2. Integrating social diversity and mobilizing a range of levers for action

There's no silver bullet

Food is a social issue because our meals—both their content and the steps that lead to them (e.g. procurement, preparation) and those that follow (e.g. management of leftovers)—are a reflection of society and the social groups to which we belong; **a cultural issue** because it is shaped by histories and tastes forged through diverse cuisines; **an economic issue,** because the era of self-sufficiency is long gone, giving way to a vast array of food products and services; **a practical issue** because food must fit into daily life, which is constrained by time, travel and energy.

These different dimensions suggest that dietary changes must involve a series of adjustments, an idea confirmed by numerous studies, including those of the authors of this report (Brocard & Saujot, 2023) and others conducted by institutions such as the European Environment Agency (EEA, 2022), the European Commission's Group of Scientific Advisors (SAPEA, 2020), the OECD (OECD, 2021) and a scientific study commissioned by the German government (WBAE, 2020). All these studies show that multiple levers must be activated in a relatively coordinated manner to bring about dietary change. Put simply, if a diet is made desirable but remains inaccessible, or if efforts to improve accessibility are not combined with measures to make it desirable and well understood, then change does not take place.

For example, it is clear that food education at school is not enough. At the same time, we should consider whether, alongside changes to school canteen menus, nationwide environmental labels used by families when shopping, municipal composting initiatives, and launching a new "plant-based" season of *Master Chef* for family TV viewing, could be combined in a way that fosters a new perspective on food.

In TRAMe, we therefore chose to mobilize changes across the four dimensions of food environments (identified through an inventory used to develop the socio-narratives) to anticipate how different actions interact to give meaning, coherence and sustainability to changes in practice. The concepts of practices and lifestyles relate to this coherence, which individuals reconstruct on their own scale as they lead their daily lives. From this perspective, it is neither possible or relevant to isolate each lever of action to assess its impact on eating habits, as it is the combination of levers that drives effectiveness. Similarly, the aim is not to try to identify a single fundamental mechanism for changing individual behaviour. Rather, it is to identify and develop "packages" or "range" of measures, as recommended by numerous scientific studies and experts (e.g. Creutzig *et al.,* 2022; OECD, 2021; Parsons & Barling, 2021; Temme *et al.,* 2020).

Taking social diversity into account and considering several transition pathways

The TRAMe approach seeks to account for the social diversity observed by establishing a typology of social groups. The work on lifestyle integration in our foresight studies (Saujot *et al.*, 2024), along with political debates on lifestyle changes, highlights a recuring issue: too often, discussions rely on the notion of an *average individual*, who does not exist. However, considering food as a social practice, as defined above, requires recognizing the diversity of social groups. First, socio-economic

situations vary widely, bringing with them different material constraints and capacities. Additionally, the aspirations and perceptions of individuals are partly determined by the groups to which they belong, and those to which they compare themselves, whether through imitation or differentiation. As a result, the same physical environment may be perceived in very different ways depending on a person's constraints, abilities and aspirations, which in turn leads to distinct consumption patterns. Ultimately, this principle underscores the need to ensure that the transition is inclusive and accessible to all—an issue of equity, cohesion and effectiveness. To this end, TRAMe examines the trajectories of behavioural change across 12 social groups.

Integrating social diversity also encourages a focus on food consumption contexts. Depending on the situation, meat consumption is not characterized by the same factors or conditioned by the same structures. For example, studies in the United Kingdom, France, Switzerland and Germany have shown that, compared to meals eaten alone, meat consumption tends to be higher at family meals, social gatherings with friends, or when eating outside the home. The timing of meals also plays a role, with higher meat consumption observed on Sundays and at lunchtime (Horgan *et al.*, 2019; Laffan, 2024; Stewart *et al.*, 2021; Vonderschmidt *et al.*, 2024). Food environments, therefore, influence practices in different ways depending on both social group and context. This means that strategies to influence meat consumption must be informed by both social diversity and an understanding of consumption situations. In this respect, specific times of the year or week (e.g. birthday meals in restaurants, summer barbecues or Christmas dinners) could be targeted for action (Laffan, 2024). Another promising approach would be to address meat consumption in professional settings, particularly among men (Laffan, 2024).

In the following section, we outline how these principles and this model of change are applied in the scenario planning methodology.

Box 2.

What influence do prices have?

The TRAMe scenario is based on a methodology that places sociology—and more specifically, practice theory—at its core. Dietary changes are therefore approached through this disciplinary lens, rather than from an economic modelling perspective based on supply and demand dynamics. That said, future work by IDDRI will aim to integrate more elements from economics (see *Discussion* section), which would complement this sociological approach.

However, the TRAMe scenario is by no means disconnected from price changes, since price is a key element of the economic environment. Its influence on purchasing decisions is taken into account, but in a simplified manner and not in a mechanical or systematic way, as in traditional economic models.

In particular, **the TRAMe scenario assumes the continuation of three major trends**:
A persistent—and potentially widening—price gap between poultry and other meats, notably beef and pork. At the sector level, this can be attributed to greater possibilities for standardization and simplification in poultry production compared to pork or beef (Aubert & Poux, 2024). In terms of purchasing behaviour, this trend is reflected in a rising share of poultry in total meat consumption across all social groups (see **Figure 22** in the Appendix).

A narrowing—and in some cases, disappearance or reversal—of the price gap between meat and plant-based alternatives (see **Box 1** for a definition), which currently favours meat. This hypothesis is based on anticipated efficiencies in production, economies of scale, and overall sector development, from upstream to downstream. It is also consistent with recent trends observed in Europe (Good Food Institute, 2022). This price convergence, along with other shifts in the food environment, supports the increased consumption of plant-based alternatives in several social groups.

...

...

A reduction in the price gap between organic and conventional products, a trend accelerated during the inflationary period of the early 2020s, when conventional products experiencing stronger price increases than organic ones (Lombart *et al.*, 2024).

These last two trends are, at least in part, contingent on targeted public policies, which TRAMe assumes will be extended and strengthened through to 2035.

Ultimately, the economic dimension is present through the TRAMe trajectories—but more as a set of constraints and opportunities shaping households choices, rather than as the primary driver of change. Budget considerations do not necessarily constitute an insurmountable obstacle to changing one's diet. In some cases, shifts—such as rebalancing calorie and protein intake in favour of plant-based foods—may incur little or no additional cost. Where changes may involve higher expenses (e.g. higher-end sustainably-produced goods, or "expensive" calories such as fruit and vegetables, etc.), households have a range of strategies available, such as adjusting their shopping basket or reallocating spending, where possible. In addition, they may rely on support from public authorities or the voluntary sector. The 12 TRAMe trajectories therefore reflect a range of situations in terms of the impact of a more sustainable diet on household budgets, income levels and the willingness to pay.

Box 3.

The role of taste and pleasure

The concepts of "taste" and "the pleasure of eating" can be understood through various disciplinary lenses (biology, economics, sociology), and within these, through different approaches. In physiology, taste is seen as a form of "sensory activation", decoded by our sensory and neurological systems as we move from sensation to perception (Brondel *et al.*, 2013). In microeconomics taste is understood as a "preference"—that is, an individual inclination that influences consumption choices (Benhamou & Moureau, 2007). In the sociology of taste, it is viewed as a "system of dispositions" (tendencies, propensities, and inclinations to act or think in a particular way) and a "system of oppositions" (e.g. non-consumption as opposed to consumption) (Grignon, 1988). These are expressed through "social representations and practices" that shape how the "good taste" of a product or behaviour is judged—often in the service of social distinction (Depecker *et al.*, 2023).

These three disciplinary approaches rest on different foundations. In particular, the economic approach assumes a free and autonomous individual making rational choices, while the sociological tradition focuses more on the influence of context, position and social structure as factors that constrain individual behaviour.

However, none of these approaches assumes that "taste" (or the pleasure of eating) is a purely a matter of sensation or hedonism. Each, in its own way, emphasises the role of repetition, context of food intake, learning, biographical trajectory, culture (or norms), and social groups in shaping how taste is perceived. And perception of taste cannot be reduced to the organoleptic properties of a food alone.

- Research in **physiology** shows that "eating habits can modify taste" (Brondel *et al.*, 2013). The brain's processing of taste sensations is filtered through memory, which is shaped not only by internal factors (such as hunger or pain) but also by an individual's accumulated experiences and representations. As a result, the same molecule (such as the one responsible for sweetness) can be perceived as more or less bitter or pleasant depending on the context: the time, the place and the individual (Moriniaux, 2004). "*Overall, the taste of a food can be pleasant regardless of its*

flavour because it is reminiscent of a childhood situation, the pleasantness of the environment or the nutritional needs of the subject" (Brondel *et al.*, 2013).

- In **economics**, the notion of "preference" is enriched by work on information asymmetry. This approach distinguishes between hypothetical preferences, which are those an individual would have under conditions of perfect information, and real preferences (Benhamou & Moureau, 2007). The authors also highlight that some economists recognize the influence of the consumption habits of the group to which one belongs, along with past consumption, in shaping present consumption choices.
- Finally, the **sociology** of taste differs from the first two disciplines in that it does not focus on individual choices or experiences, but rather on the social construction of preferences within households and social groups. These preferences are interconnected and form a coherent whole at the group level (a lifestyle). They serve as a function of distinction between social groups and are shaped by dispositions, living conditions and material circumstances (Depecker *et al.*, 2023; Grignon, 1988). Certain consumption habits or behaviours thus act as clear "class markers", or "symbolic boundaries" between groups (Lamont & Molnár, 2002). Pleasure is relatively absent from this field of research, and is instead explored in the sociology of the "eater" (Dupuy, 2014). From this perspective, pleasure is embedded in a broader social context and should not be understood as *constitutive of* taste (as in economic theory), but rather as the *expression* of the social matrix that shapes it. Sensory pleasure exists, but it cannot be separated from the characteristics of the individual or the social group.

So, what about taste and pleasure in the TRAMe scenario?

Taste and pleasure are central considerations when it comes to food. As we have seen, although the various disciplines that address them take different approaches, none isolates them entirely. On the contrary, whether taste is considered a criterion for food choice (as in economics) or as a dimension of sensory experience (as in physiology), the influence of context (particularly food environments), biographical trajectory, social norms and social position is constantly emphasized. In TRAMe, which draws on the sociological tradition and practice theory, we extend these ideas through the following hypotheses:

1. **Tastes are primarily social.** They do not exist independently of the encounter between individuals or households and their food environments. This does not deny the sensory experience, but considers it as the product of the interaction between social patterns, a trajectory and systems of taste.

2. **Tastes can be analysed at the level of social groups.** TRAMe projects the practices of 12 social groups into the future, not those of individuals. The sociological approach to taste is thus particularly relevant, as we view tastes as embedded in practices. For clarity, we include them in the "social norms" component (see **Figure 4**), as they relate to what is considered "good taste" in terms of what a household consumes or does.

3. **Tastes emerge from the interaction between a social "matrix" and the available food offer**. In this view, tastes are not fixed but influenced by food environments and how households interact with them. In line with practice theory, attention is given here to the material foundations of social life (such as shops, agro-industrial supply chains, etc.).

4. **Tastes have a history, and that history differs across groups**. By 2035, dominant tastes may have shifted, as may the tastes of different social groups, due to the changes in food environments proposed in TRAMe. Such shifts have already occurred in the past. For example, the "taste" for sweetness or meat has evolved over time and has taken different forms in different societies. It is therefore conceivable that the "taste" for meat will have changed again by 2035 or 2050. Moreover, consumption patterns can change even without a significant shift in taste—simply because meat becomes less present in places of purchase or out-of-home eating.

Methodology for constructing the TRAMe scenario

The TRAMe scenario is based on a combination of qualitative and quantitative approaches, as shown in **Figure 5**. The first stage (1) involved creating 12 social groups, based on existing literature and expert interviews, and descriptive data on French households and their prevalence in the population. The second stage (2) focused on describing these 12 social groups and their trajectories of change in food consumption from 2023 and 2035, drawing on an inventory of potential changes in food environments. The third stage (3) entailed a quantitative translation of the changes in meat consumption and an estimation of their impact on a national scale. Each of these stages is described in the following sections.

Typology of the 12 social groups and description of their dietary habits and food consumption

Constructing the 12 groups

The construction of the social groups was guided by four major requirements:

1. capturing social diversity with sufficient nuance, which necessitated a certain number of groups;
2. ensuring a high degree of homogeneity within each group, both in socio-demographic terms (age, gender, etc.) and in terms of eating habits and food environments (e.g. similar levels of financial constraint, social norms and shopping habits, etc.), allowing for the application of our methodological framework;
3. quantifying the size and food consumption of each group based on available data;
4. projecting the future size of these groups in the population by 2035.

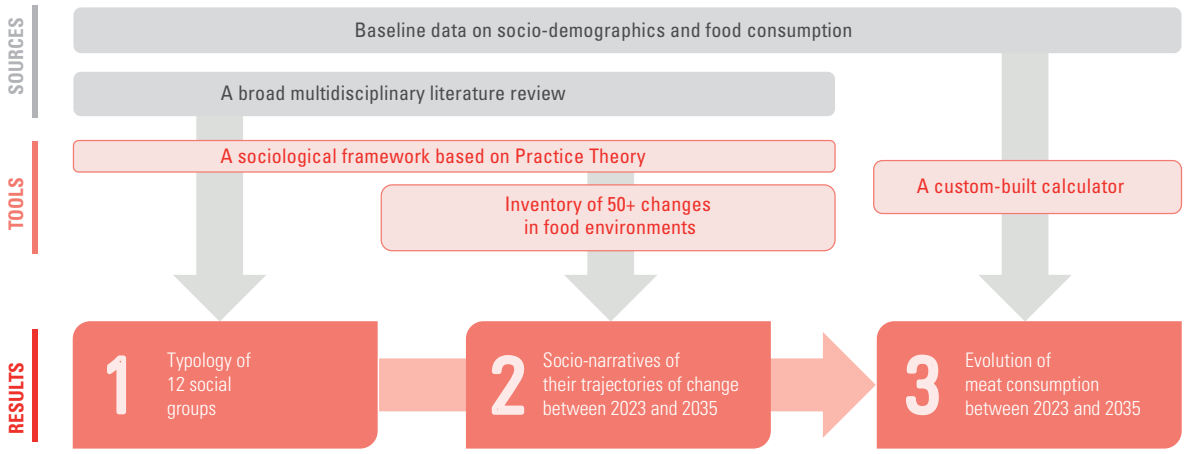
To define these groups, six socio-demographic variables were selected as the basis for classification: gender, age, level of qualification, household standard of living,[12] size of household area and household structure (single person, couple, family). Each group is ultimately defined by a unique combination of these six variables (see Table A1 in the Appendix). These socio-demographic variables were chosen based on two criteria: (i) their relevance in explaining the dietary behaviour and constraints of individuals; and (ii) their availability across the different datasets used.

➔ For example, Group 1 "Educated affluent families" includes all individuals—regardless of gender, age or place of residence—who live in families with a high standard of living, where the adults have at least two years of post-secondary education.

Next, we grouped the possible combinations of these six variables into a limited number of categories. The identification of the 12 social groups was based on a cross-referencing process that drew from multiple sources, including existing typologies of consumers; research on social stratification; as well as sociological studies on eating

12 Standard of living refers to disposable household income per consumption unit.

FIGURE 5. Visual summary of the methodology of the TRAMe2035 scenario and its operational implementation



behaviours, consumption and sustainable practices (see *Book 3—Methodological framework*). This complex process aimed to define groups that were both coherent in terms of dietary practices, and representative of broader social trends, serving as meaningful archetypes for the scenario-building exercise. At the same time, by matching these groups with quantitative datasets, we ensured that they captured nearly the entire population (see the next section on the quantitative estimation of the groups). **Table A2** in the Appendix presents an overview of the socio-demographic characteristics of each group.

This methodological approach is unprecedented in the field, in that it seeks to maximize both social homogeneity and consistency in practices within each group by drawing on a broad range of scientific knowledge. These two dimensions are essential for projecting the groups into the future, i.e. for developing trajectories of change that account for both constraints and aspirations. In other words, individuals within the same group are likely to face similar changes in their food environment, and to respond to them in similar ways. **The resulting social diversity between groups is key to constructing and discussing a more nuanced understanding of what a food transition entails and requires**. Despite this level of detail, it is important to note that each group represents an ideal type, i.e. a meaningful simplification designed to illustrate a transitional situation. As such, no social group can fully represent the diversity of experiences within it at the individual level.

Quantitative estimate of a group's size and food consumption

The 12 social groups were constructed through an iterative process, integrating both qualitative and quantitative approaches to ensure they accounted for the vast majority of the French population (92%). Defining social groups based on the six variables listed above allowed for a quantitative estimation of each group's proportion within the total population. This estimation was carried out using socio-demographic data, including: the population census (1968-2019) and the tax and social income survey (ERFS, 2005-2019) from INSEE (INSEE, 2022a, 2022b). See **Box 5** in the *Results* section for details on the share of each group within the population.

In addition to estimating their share of the total population, we also assess the average food consumption of each group. These estimates are primarily based on the INCA 3 consumption survey by ANSES (2021), conducted in 2014-2015, along with other sources such as FranceAgriMer's supply balance data (2024a). Food consumption is estimated for each standard individual, defined as the combination of social group, gender and age.

➔ For example, Group 1 "Educated affluent families" consists of six typical profiles: children, adults (excluding seniors), and seniors, each differentiated by gender (men and women). This classification accounts for significant differences in absolute consumption quantities based on age and gender. Daily consumption quantities (in grams) were estimated for all 19 products listed in **Box 4**, across four consumption categories, resulting in 80 variables in total.

Box 4.

Products and food consumption categories used in the quantitative estimates of consumption

Meat (including its proportion in multi-ingredient foods):
- Beef
- Pork
- Poultry
- Other meats

Non-meat foods
- Bread, pasta, rice...
- Cakes, chocolate, sugar
- Milk
- Dairy products and eggs (excluding milk and cheese)
- Cheese
- Oil
- Seafood

Fruit and vegetables (excluding potatoes)
- Legumes, seeds and nuts
- Potatoes and other tubers
- Beverages
- Fruit juices, soups and broths
- Mixed dishes
- Other products
- Vegetable substitutes

Categories
- Home—home-cooked
- Home—ready meals
- Catering—commercial
- Catering—collective

In addition, the INCA 3 survey was used to calculate the average frequency and portion size of meat consumption per meal containing meat. First, the average portion size in grams of all types of meat combined was determined for meals that included meat. The average weekly meat consumption was then divided by this average portion size to estimate the average number of meat-containing meals per week.

The combination of average consumption and actual consumption data makes it possible to estimate the total quantity of meat consumed in France, according to type (beef, pork, poultry, other meats). Since the average consumption data is from 2015, it was adjusted by extending trends in meat consumption by type (beef, pork, poultry, other meats)[13] and changes in the share of consumption in commercial catering up to 2023.

Book 3—*Methodological framework* provides a detailed explanation of the overall quantitative approach.

Socio-narratives of change trajectories for each group

As with any foresight study, this scenario-planning exercise aims to explore possible futures through a methodologically rigorous approach. More specifically, it examines how food practices may evolve by 2035, with a particular focus on the reduction of meat consumption. This analysis is based on the possible interactions between changes in the food environment and evolving practices across the 12 social groups. The relationship between these two dimensions is at the core of the TRAMe approach and is what makes it unique.

This has two main consequences. First, the projection does not present multiple possible futures for the food system, but rather a set of possible trajectories of change leading to a single, desirable future, one in which meat consumption is reduced by 2035. These trajectories represent the 12 social groups, through which the diversity of the French population and its relationship to meat consumption is reflected. It is by drawing on this diversity, as reported in the scientific and expert literature, that we are able to construct differentiated trajectories for these 12 social groups. While all groups are moving in the same direction—they will all reduce their meat consumption by 2035 due to an overall alignment with changes in the food environment—what is essential is that this evolution happens *on their own terms*, shaped by their desires, expectations and capacities. In short, the approach involves identifying a specific and plausible trajectory in practice for each group, leading to lower meat consumption.

Each trajectory is supported by a socio-narrative that describes how the practices and representations of each group evolve. To construct these narratives, we mobilize multiple fields of scientific and expert literature, including: research on public policies, "interventions", experiments and their differentiated effects on individuals according to socio-demographic variables (sociology, behavioural sciences, psychology, economics); studies on the relationship between social groups and ecology, consumption, food and meat (sociology), and lessons learned from existing typologies that describe attitudes and practices related to sustainable consumption and food (statistics, sociology). This comprehensive review of scientific and expert literature draws on nearly 130 references, which were used to define the groups, establish their starting points, and construct their trajectories of change. Additionally, the methodology was informed by scientific advice to strengthen the methodological approach, and underwent expert evaluation both within and outside our organizations.

This scenario-building approach is applied systematically to each of the 12 groups. This process leads to the drafting of socio-narratives (available in *Book 2*—*Socio-narratives of food transition for 12 social groups*), which follow the method described below. **Box 7** presents a detailed example of this approach, using Group 6 "Urban middle-class families".

1) The first stage involves creating an "identity card" for each group, drawing on existing literature and data from the INCA 3 database. Each group is described in terms of: socio-demographic characteristics, its social representations related to food, relationship with consumption and ecology, and current dietary habits,

13 To account for the changes between 2014-2015 (the year of the INCA 3 survey) and 2023, meat consumption quantities were adjusted based on the supply balances published by FranceAgriMer (2024a), providing the apparent meat consumption every year since 1970. For each meat type (beef, pork, poultry, other meats), it is assumed that the ratio between the quantities available for consumption in kgCWE (FranceAgriMer), and the quantities consumed in g/d (INCA 3) remained stable over the 2015-2023 period, in other words that the share of losses and waste did not change.

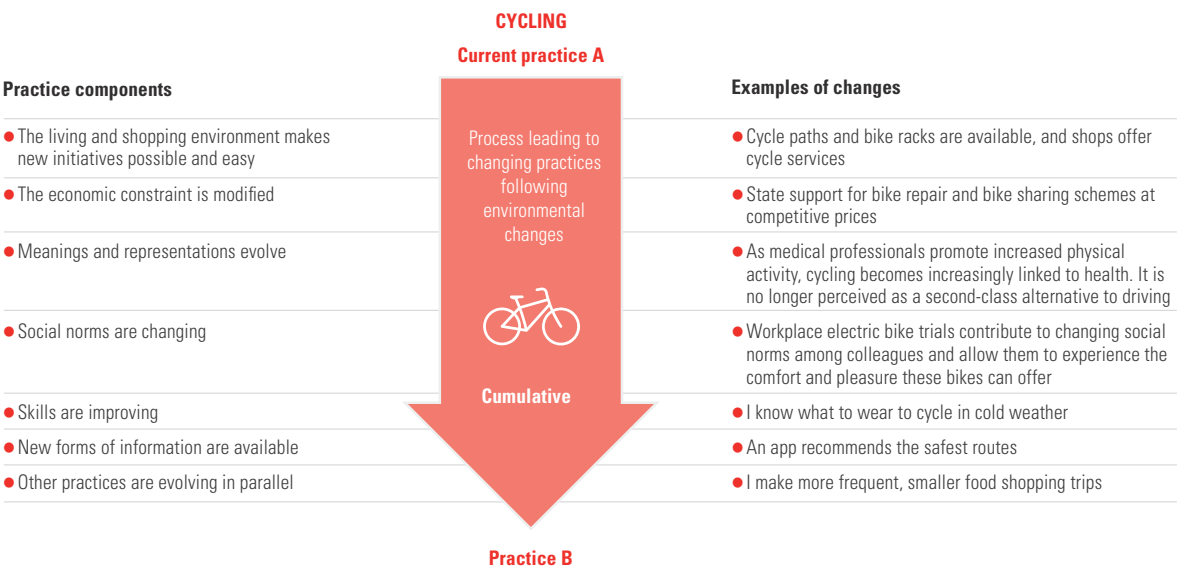
including meat consumption. The level of detail in dietary habits and consumption patterns is intended to be as consistent as possible across groups. However, since this process relies on previously conducted studies (typologies, sociological surveys, cohort data, etc.), a certain degree of variability is inevitable.

2) Second, a series of changes to the food environment is introduced, designed to be plausible by 2035. To this end, an inventory of possible measures has been compiled (see the appendix to *Book 2—Socio-narratives of food transition for 12 social groups*). These changes in the food environment have both direct and indirect effects on the practices of different social groups. Before describing these effects in the *Results* section, an example from another sector—mobility—helps illustrate the principle. On the one hand, these changes influence both the *practice itself*, i.e. the practice of "cycling to work" takes on a new meaning and becomes easier to implement if there is a shift in how environments are perceived due to advertising and communication efforts, as well as improvements to the cycle network. On the other hand, this change in the environment is perceived and adopted differently across the social groups considered. Thus, a household without the means to buy a bicycle, or where no one knows how to ride one, will not benefit in the same way as a household without these constraints. Ultimately, if the practice of "cycling" is adopted, it is due to the combined effect of multiple levers (**Figure 6**).

3) Third, the paths of change for each social groups are described in the form of a narrative, based on the changes outlined in the second stage, resulting in 12 socio-narratives. This approach makes it possible to trace the trajectory of evolving practices from the starting point (2023) to the finishing point (2035). This stage forms the core of the TRAMe scenario change model: through the lens of what is known about each group (stage 1) and the changes in the food environment (stage 2), the aim is to assess and describe the possible effects on representations and observed practices. This form of socio-narrative provides a balance between intelligibility, which requires making certain "causal" links and mechanisms of change explicit, and the systemic nature of how lifestyles evolve.

The next step is to precisely identify how each group's relationship to meat consumption is affected: does this involve a reduction in portion sizes? a shift from one type of meat to another? an increase in the number of meals, whether home-cooked or eaten in restaurants, that do not include meat? In short, the socio-narratives define the logic, direction and intensity of change, which are then translated quantitatively through detailed conjectures on variables in the calculator, while also considering trend developments (e.g. the continually increasing share of poultry in total meat consumption). This process follows a systematic approach, ensuring that each deviation,

FIGURE 6. Cycling as an example



Source: IDDRI/I4CE.

whether specific to a group, a consumption category (at-home, commercial catering, etc.), or a type of meat is justified in the corresponding socio-narrative. The precise approach is explained in *Book 3—Methodological framework*.

This method inevitably involves some degree of interpretation, which we have minimized by drawing on a broad range of literature from various disciplines. This aligns with the goals of a foresight exercise, i.e. an approach that does not aim to predict future practices, but rather to outline sufficiently plausible and detailed futures. The aim is to facilitate discussion on what would be desirable and the conditions needed to move in that direction.

Quantification of meat consumption in 2035

The projected situation for 2035 is derived by combining the quantitative transitions of each group between 2023 and 2035 with the projected size of each group in 2035. **These quantitative representations of social group trajectories are expressed through a number of variables.**

- **General**: the distribution of consumption across the four categories ("home-made" meals, ready-made dishes, collective catering and commercial catering).
  ➔ For example, given the ongoing trend of commercial catering accounting for a growing share of total food consumption, we assume this trend will continue at the same pace across all social groups between 2023 and 2035.
- **Meat-specific**: the total quantity of meat consumed (through changes in frequency and/or average portion size), the proportion of meat in the total food consumed within each of the four categories, and the distribution of meat consumption according to type (beef, pork, poultry, others), both overall and within each consumption category.
  ➔ For example, if a change in the food offering introduces a weekly vegetarian meal in the workplace, the frequency of meat consumption decreases by one occurrence per week in the "collective catering" category, while the average portion remains unchanged (which translates into an approximate 10% decrease in meat consumption).

With regard to the specific hypotheses on meat consumption, the literature identifies four variables that influence total consumption: a) the number of meat consumers (versus non-consumers); b) the weekly frequency of consumption (i.e. the number of days per week when meat is eaten); c) the number of daily consumption occasions; and finally d) portion size (Vonderschmidt *et al.*, 2024). Our quantitative tool incorporates these four factors, although we combine b and c into a single "frequency" indicator, representing the number of times an individual consumes meat per week. The total number of meat consumers was only minimally adjusted, with a small subgroup (representing 0.2% of the total population) within the "single women" group adopting a vegetarian diet. As a result, the two key variables in TRAMe are frequency and portion size.

For each group, we therefore calculate the average quantity of meat consumed in 2035 based on their initial consumption in 2023 and the changes outlined in the socio-narratives. As previously explained, these socio-narratives are translated into quantitative assumptions regarding portion size, frequency, the share of meat within each category (home, catering), and the distribution by meat type (beef, pork, poultry).

The projections for the size of each group in 2035 are based on a combination of INSEE's demographic projections[14] for gender and age and our own projections for the other socio-demographic variables (level of education, income, size of settlement and household configuration), which are derived from past trends. We chose to maintain the structure of these 12 groups rather than redefining new ones for 2035, given that the socio-demographic framework remains robust (e.g. in 12 years, it will still be relevant to distinguish groups of senior citizens). As demographics evolve—individuals age, couples are formed, families are started, etc.—individuals move from one group to another. To ensure simplicity and readability of the results, as well as consistency with our methodological framework, we adopt the simplified hypothesis that an individual adopts the practices of his or her new group, given that social group membership is the predominant factor shaping behaviours.

14 Variants of demographic developments were used to carry out sensitivity tests.

The results for average meat intake per person[15] (in grams per day or per week) **are then expressed in terms of total quantities available for consumption** (or *apparent consumption*, in tonnes of CWE or carcass weight equivalent). This conversion is based on the assumption that, for each meat type (beef, pork, poultry, other meats), the ratio between quantities actually eaten (from the INCA 3 survey) and the apparent consumption (from FranceAgriMer's supply balances)—as calculated in 2015—remains stable over the 2015-2035 period. In other words, we assume that the proportion of meat lost or wasted between slaughter and final consumption remains unchanged.

See *Book 3*—*Methodological framework* for further details on the construction of the TRAMeCalc tool, its functioning, the results obtained, and the sensitivity tests. This book also includes a discussion on the tool's limitations and possible alternative modelling approaches.

15 Due to a lack of data, average consumption is calculated for the French population living in ordinary households in mainland France. This excludes the 4% of people living overseas, the 2.6% living in collective accommodation (retirement homes, boarding schools, prisons, etc.), as well as tourists visiting France. These populations are assumed to follow the average trajectory.


PROMO
Menu

RESULTS.
A POTENTIAL TURNING POINT BY 2035

This section presents the results of the methodology described above. We begin with an overview of the initial situation in 2023, detailing the 12 social groups identified: who they are, how they perceive food, and their current consumption patterns. We then outline their specific trajectories over the 2023-2035 period and their food consumption and practices at the end of this timeframe. Four main trajectory types are identified, broadly reflecting the diversity of the aspirations and constraints of the social groups. Finally, we examine the implications of this scenario beyond 2035.

Box 5

Group identity card

The 12 social groups in the TRAMe scenario and their share of the total population (%)

Before describing the developments envisaged in the TRAMe scenario, we present the starting point of the foresight exercise: the 12 groups at the heart of the study, along with their characteristics and diets as of 2023.

These 12 groups have been constructed to be relatively homogeneous in terms of their socio-economic characteristics and alignment with ecological and food-related practices (see *Approach section*). These groups represent more than 90% of the French population over the period 2023-2035. Together, they reflect a wide variety of situations, particularly as most are subdivided into subgroups with different transition trajectories. Each group is an *ideal type*, i.e. a meaningful simplification that allows us to explore distinct configurations of change and developments in practices.

The following is a brief qualitative description of the 12 groups, their share of the population, socio-demographic characteristics and how they relate to environmental and food issues. Each summary highlights the distinctive features of each group (their aspirations, constraints, questions, etc.) that are particularly relevant to understanding their potential transition trajectories and the dynamics of change. This does not mean that the characteristics described are exclusive to one group or entirely absent from others. For example, support for sustainable food and concern about environmental issues are now widely shared across society. However, the intensity of these concerns, the ways in which they are expressed, and the importance attributed to them relative to other issues vary significantly between social groups.* The full socio-narratives for all 12 groups are presented in *Book 2—Socio-narratives of food transition for 12 social groups.* **Table A2** in the Appendix provides an overview of their socio-demographic characteristics (gender, age, household structure, income, place of residence and education level).

NB: the numbering of the groups is purely instrumental; the order has no particular meaning.

G01 12%
Educated affluent families

These families have a medium or high level of education and high incomes. They are concerned about the transition, but their lifestyle remains polluting—through their travel or consumer goods—despite the small gestures they make. They often eat out and are receptive to nutritional discourse. In terms of meat, they try to reduce consumption to slightly below the group average.

G02 9%
Low-income urban families

The vast majority of families in this group live in medium-sized or large towns, have modest means,** and are employed in low-skilled, physically demanding jobs. Their lifestyle is frugal out of necessity, and their diet is no exception, which can lead to feelings of frustration. Their meat consumption is average, mainly driven by habit, pleasure or practicality.

G03 8%
Rural middle-class families

These families, most of whom live with children, have average incomes and educational levels, and rural roots. Aspirations for material comfort and ostentatious consumption are strong, as is the fear of losing status or having to go without if incomes fall. However, this does not prevent a certain appreciation for small gestures, though far from any form of political radicalism. Food—and meat products (especially pork) in particular—is seen as a frequent source of pleasure, somewhat moderated by health considerations.

G04 5%
Low-income rural families

These households, the vast majority of which are couples with children, live in rural areas and have modest means, often working in low-skilled jobs. While aspects of their lifestyle reflect careful budgeting and informal local support, many in this group tend to reject environmentalism, which they associate with cities and urban amenities. Their consumption of meat and meat products is higher than average and closely tied to the enjoyment of substantial, shared meals.

* Pour construire la typologie, nous nous sommes appuyés sur les nombreux travaux qui décrivent ces différences (e.g. Baudry *et al.,* 2016 ; Delanoue *et al.,* 2018 ; Dembo et al., 2017 ; FranceAgriMer & Ifop, 2021 ; Ginsburger, 2020 ; Greenflex & Ademe, 2024 ; Legendre, 2008 ; Sessego & Hebel, 2018)

** Nous ne prenons pas en compte les ménages en situation de grande précarité ou les ménages non « ordinaires » (sans domicile, vivant à l'hôtel ou en communauté etc.) qui échappent à la statistique nationale à laquelle s'adosse notre étude.

G05 3%

Highly educated affluent households

These households—either couples without children or single people—have high incomes and a high level of education. They are deeply concerned about the ecological crisis and make this known, whether through their discourse or actions. They are actively working to make their lifestyle more frugal—though air travel is generally excluded from these efforts. This group eats out in restaurants more than any other. They aim to fully "convert" their diet, which is already "organic" or sourced through short supply chains, by further reducing their consumption of animal products, which is already slightly below average.

G06 9%

Urban middle-class families

These households, most of which are couples with children, have low or average incomes and a wide range of educational backgrounds. The financial constraints and frugality that come with these incomes are often framed by the households themselves as a form of chosen austerity. They are rethinking certain aspects of their lifestyle—particularly the role of animal products in their diet—motivated by a search for authenticity and respectability.

G07 4%

Single women

This group includes women living alone, who share a sensitivity to moderation in consumption (whether for environmental, health or even dietary reasons), though this is reflected in action to varying degrees and under very different material conditions. Economic constraints and a limited interest in meals also play a role. This group are therefore more likely to change their lifestyle, made easier by the autonomy that living alone affords. They tend to reduce their already limited consumption of animal products even further.

G08 4%

Single men

This group is made up of men living alone who have low or average incomes and either no qualifications or only limited experience of higher education. Absorbed in daily routines that come with their own constraints, most of these men show little concern about the ecological crisis. Food is seen as something to be dealt with simply and efficiently, prioritizing satiety, simplicity and occasionally pleasure. Meat products, in their view, meet all three criteria, and are therefore consumed frequently and in large quantities.

G09 7%

Students

The student group is as socially diverse as society as a whole, with social stratification reproduced within it. What unites the individuals in this group, however, is their specific stage of life. It is a time when habits, particularly eating habits, are re-evaluated or shift significantly alongside other aspects of lifestyle. Most students face some form of constraint—whether in terms of time, space or the resources available to shape their eating habits as adults. Their current meat consumption is well above average.

G10 13%

Affluent senior citizens

These households, made up of senior individuals or couples, enjoy a relatively comfortable lifestyle based on medium to high incomes. They place particular value on material consumption, which they see as a marker of modern progress. They are generally unreceptive to ecological discourse, and may even find it irritating. For them, food is closely tied to identity and pleasure, with animal products playing a significant role. Despite their views, they remain mindful of health considerations, which means overall food intake is not excessive.

G11 5%

Senior citizens on low incomes with few qualifications

These senior households, whether made up of individuals or couples, lead a frugal lifestyle shaped by the caution that comes with low incomes. They are not opposed to environmental messages, but do not necessarily find them meaningful, since their choices are more often shaped by "thrift", "practicality" and habits formed through a non-consumerist upbringing. Their consumption of meat products is slightly below average.

G12 12%

Low-educated affluent households

These households, mainly made up of families and couples, combine high incomes with a low level of formal education. They place value on material comfort and ostentatious forms of consumption, and tend to be wary of any fundamental challenge to their lifestyles. While food is not their primary means of expressing social status, it is strongly associated with conviviality, pleasure, and also tradition, particularly through the role of meat. Their consumption of meat products is especially high.

Starting point: 2023

Current consumption: meat is ubiquitous across all groups

This section provides a more quantitative description of the food practices and consumption patterns of the 12 groups. *Note: All results are presented for groups "excluding children" (except for frequencies and portion sizes), because the proportion of children varies significantly across groups (from 0% to 38%), which could complicate the interpretation of values.*

In France, an adult consumes on average around 1,330 grams per day (g/d) of food, excluding beverages, including 130 g/d[16] of meat (910 g/week). French meat consumption is slightly above the European average, and nearly double the global average.[17]

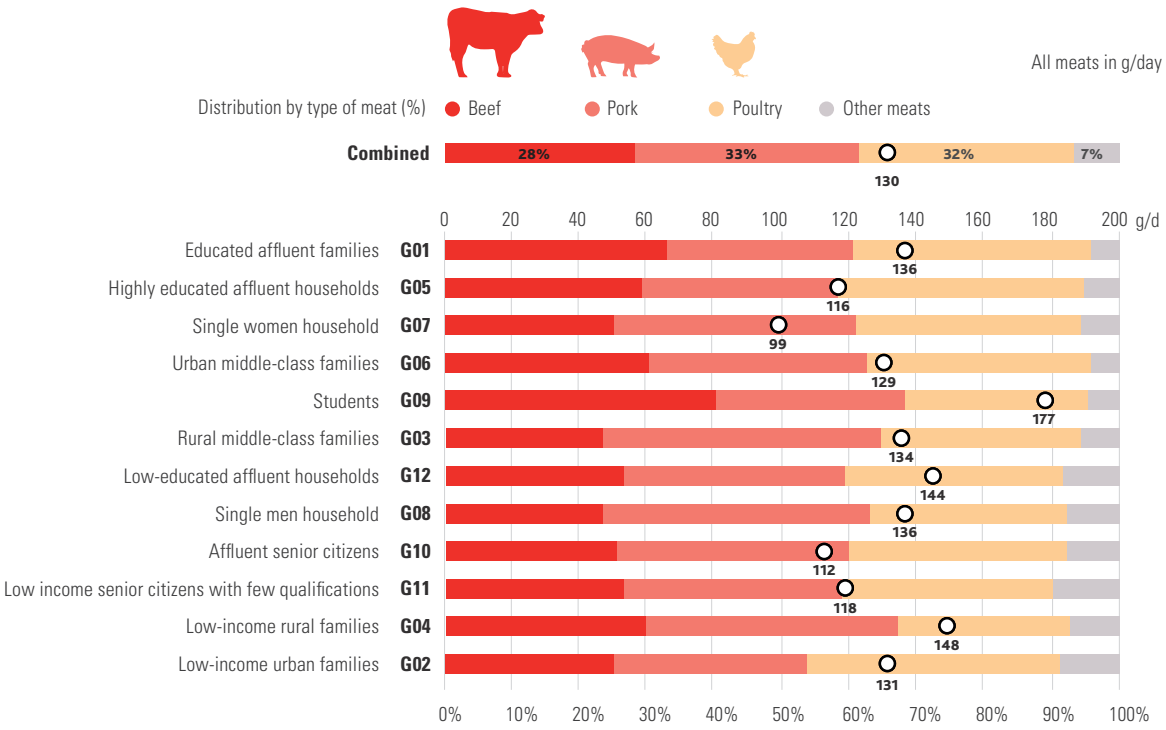
In 2023, with a few exceptions, the total quantity of food consumed (excluding beverages) is relatively consistent across groups (see **Figure 17** in the Appendix). For each group, total consumption falls within ±5% of the observed average of 1,330 g/d. The only exceptions are Group 11 "Senior citizens on low incomes with few qualifications" who consume the least (17% below average) and Group 2 "Low-income urban families", who consume the most (11% above average), both excluding beverages.[18]

16 Meat consumption in 2023 includes meat contained in multi-ingredient foods or dishes, and has been adjusted relative to 2015 to account for changes in consumption over this period. In contrast, total food consumption (excluding beverages) has not been adjusted between 2015 and 2023 due to a lack of data.

17 In 2023, the quantity of meat available for consumption was 83.3 kg carcass equivalent (kgCWE) in France (FranceAgriMer, 2024a), 82.9 kgCWE in the European Union (Joint Research Centre, European Commission, 2024), and 44.5 kgCWE worldwide in 2022 (FAO, 2024a).

18 If we also remove the category "fruit juices, soups and broths" from the total, the conclusion is the same, but it is Group 9 "students" that has the highest consumption (+8%) while Group 2 "Low-income urban families" remains the lowest (-15%).

FIGURE 7. Average meat consumption and breakdown by meat type, according to social group (excluding children) in 2023



Source: INCA 3 (ANSES) data, processed by I4CE/IDDRI.

The composition of the diet, however, varies significantly between groups. The proportion of fruit and vegetables in total food consumption ranges widely, from 12% in Group 9 ("Students") to more than double that in Group 10 ("Affluent senior citizens"), at 27%. Similarly, the quantities of cereals (bread, pasta, rice) and milk consumed also differ considerably across groups.

With a few exceptions, adult meat consumption remains close to 130 g/d, with variations of around ±20 g/day (equivalent to a slice of cured ham). The two outliers are Group 7, "Single women", who consume around 100 g/d, and Group 9, "Students", whose intake is nearly double that (**Figure 7**). This limited variation becomes more pronounced when meat consumption is considered as a share of total food intake (excluding beverages): across all groups, this share fluctuates within ±2 percentage points around the 10% average (**Figure 17**).

Similarly, the distribution of this meat consumption by type (beef, pork, poultry, other meats) is relatively consistent across groups (**Figure 7**). Once again, Group 9 "Students", stands out, with their higher beef consumption and lower pork consumption compared to the national average. Meanwhile, Group 4 "Low-income rural families" is notable for its low poultry consumption, with a preference for pork and other meats.

This average meat consumption is shaped by different combinations of frequency and portion size (see **Box 5** and **Figure 18** in the Appendix). Adults in Group 12, "Low-educated affluent households", consume meat the most frequently (more than 12 times a week), but with portion sizes comparable to the average adult portion. In contrast, adults in Group 7 "Single women", Group 2 "Low-income urban families", and the senior citizen groups (10 and 11) consume meat the least frequently (about 10 times a week), i.e. four meat-free lunches or dinners a week. An initial observation concerns meat consumption frequency: despite some claims in opinion polls, the actual average frequency is very high (11 times a week) (see **Box 6**), while the average portion per meat-containing meal remains relatively small (around 80 grams per meal). Another notable point is that, on average, 97% of meat consumption occurs at lunch or dinner, with a ±2 percentage point variation across groups.

Box 6.

Understanding the average frequency and portion sizes of meat consumption

The average frequency of meat consumption (11 times a week, based on the INCA 3 survey) may seem high. According to our estimates, depending on the group, this means that only two to four lunches or dinners per week are meat-free. However, some opinion polls present a different picture. For example, the Harris Interactive poll (2023) found that a majority of French people reported eating meat weekly (62%), while only a minority claimed to eat meat daily (27%).

Surveys based on self-reported meat consumption are known to be much less reliable than consumer surveys, largely because people tend to misjudge their own diets (Crédoc *et al.*, 2020). In particular, respondents often focus on pork and beef consumed at home as main dishes, while underestimating meat in ready meals (sandwiches, pizzas, quiches, etc.), meat in starters, poultry, meat eaten outside the home, and occasional consumption, etc. For instance, two thirds of the pork consumed in France is in the form of charcuterie (FranceAgriMer, 2024a), averaging 200 g per person per week, equivalent to five slices of ham. If we then include several servings of poultry (sandwiches, chicken thighs, chicken strips, etc.) and beef (e.g. mince, spaghetti bolognese), the average frequencies and portion sizes reported in the INCA 3 data become more understandable.

Our estimate of average meat consumption frequency is, by contrast, consistent with other consumer surveys. The Crédoc survey (2018), conducted over course of the 2010s, also reported frequencies of 10 to 12 times per week. The FranceAgriMer and Ifop survey (2021) found that 25% of respondents ate meat less than once a day. In this survey, 73% were classed as "omnivores" (eating meat daily), 20% as "flexitarians" (less than once a day), 5% as "committed flexitarians" (about once a week) and 2% followed meat-free diets. Assuming omnivores eat meat at every meal (14 times a week), flexitarians six times, and committed flexitarians once a week, the average consumption frequency is approximately 11.5 times per week. The level of consumption compared to the average of high-income groups may come as a surprise, as it contradicts the widespread assumption that meat consumption is inversely correlated with income. However, our data from the INCA 3 survey (which includes meat consumption in ready meals and multi-ingredient foods) reveals a non-linear relationship between these two variables (see **Figure 21** in the Appendix). It is important to note that income level is not the most significant socio-demographic variable (compared to gender and age, for example). For instance, Group 1 includes slightly fewer women and a much lower proportion of senior citizens than the general population, which accounts for its relatively higher meat consumption compared to the average.

For all groups, the majority of food consumption takes place at home, using products purchased from shops and cooked at home (this accounts for 83% on average, see **Figure 8** and **Figure 19** in the Appendix). However, this does not necessarily mean that the French cook most meals from raw ingredients, because the definition of "ready meals" used here—drawn from FranceAgriMer (2024b)—is very narrow,[19] while the definition of "home-cooked" is broad. As a result, salads and sandwiches, soups, and even chilled prepared foods (e.g. stuffed fresh pasta, vegetable patties, etc.) are found in the "home-cooked" category, alongside processed foods such as cakes, sauces, savoury snack biscuits, etc. According to this classification, ready meals account for 7% of food consumption (excluding beverages) on average,[20] while out-of-home catering makes up 12%, of which 8% is commercial catering.

These distributions also vary between groups (**Figure 8** and **Figure 19** in the Appendix). Senior citizens (Groups 10 and 11) do not eat in collective catering sites,[21] whereas they consume the most "home-cooked" meals at home. Conversely, affluent groups and students are the highest consumers in out-of-home catering sites, whether in collective or commercial settings. For all groups, however, a meal eaten in a restaurant contains more meat than a meal consumed at home.

Finally, while the results are presented as averages for each social group, it is important to remember that there is variability within these groups. Gender, age and level of education are particularly important factors influencing food consumption in both absolute and relative terms, especially for meat consumption (see Figures 20 and 21 in the Appendix). Men consume 34 g/d more meat than women, non-senior adults 23 g/d more than senior citizens, and students consume 55 g/day more than the French average of 122 g/d.

19 Ready meals include fresh, frozen or canned dishes made with meat, pasta, potatoes or seafood, as well as pizza, quiche and pies.

20 The INCA 3 survey does not distinguish between "home-cooked" and industrially produced food. In the absence of more precise data, and based on a FranceAgriMer (2024b) report, we assume that ready meals account for 7% of home consumption across all groups, and that their composition is identical to that of "home-cooked" meals consumed at home. As a result, the findings on ready meals at the group level should not be interpreted in the same way as those for other categories.

21 The senior population described here excludes individuals living in institutions (particularly nursing homes), as statistical data on these populations is largely unavailable.

FIGURE 8. Share of each category in total food consumption (excluding beverages) and in meat consumption for certain groups (excluding children) in 2023 (in %)

Note: The consumption of ready meals at home is set at 7% for all groups, due to a lack of data that would allow this type of consumption to be differentiated according to the groups.

Source: INCA 3 (ANSES) data, processed by I4CE/IDDRI.

Trends in meat consumption practices in France (2023 – 2035)

In this section, we describe the TRAMe scenario itself. We start by detailing the various changes in food environments that we use to model evolving consumption trajectories. We then summarize how these shifts in food environments involve changes in the eating practices across different social groups—these socio-narratives are described in detail in *Book 2—Socio-narratives of food transition for 12 social groups*. Finally, we present how these changes translate quantitatively, specifically in terms of meat consumption.

Changes in food environments

The TRAMe exercise is based on a series of changes to the food environment. Taken individually, these changes may seem minor, but when combined, these incremental changes form an interconnected system that influences all dimensions of food environments, in line with the diversity of practices, perceptions and constraints shaping food choices.

This approach—focusing on a multitude of "small" changes—reflects the fact that disruptions to the food system are rare and, when they do occur, typically stem from external dynamics, such as developments in the world of work or interactions with other economic sectors.[22] Similarly, the expansion of processed food and ready meals has been driven by long-term societal trends, such as the mass entry of women into the workforce and the increasing access to leisure activities, which influences the availability of time and its allocation. Within the relatively short timeframe of TRAMe (2035), and with the explicit decision not to rely on major external disruptions, our focus is on understanding the cumulative impact of this multitude of incremental changes.

This diversity of changes is also intended to reflect the diversity of social groups, taking into account their constraints, aspirations and thus specific practices. The same change—such as the expansion of the Rémunéra-score (a system for evaluating fair remuneration in food supply chains),[23] extended opening hours for CROUS university restaurants (which provide low-cost meals for students in France), or changes to the services offered in workplace canteens—will not affect all groups equally, either in scale or in nature. Beyond the obvious cases (for example, the "Highly educated affluent households" group is unaffected by changes to food aid since they do not use it), the aim was to provide a detailed account of the socially differentiated reception of certain so-called "universal" developments—those that are assumed to affect everyone. Sociological and experimental research has thoroughly challenged this assumption, demonstrating how the same measure is applied and experienced differently across groups. The most striking example of this is nutritional recommendations (Régnier & Masullo, 2009).

This section provides an overview of changes across the four dimensions of food environments (summarized in **Figure 9**), and their implications for each group. Consumers are encountering new product offerings, as well as changes in product availability, pricing and shopping environments. Alternative services are becoming more widespread and visible, acting as potential triggers or catalysts for change (economic and physical environment). At the same time, new perspectives on food, along with evolving sociocultural norms and capacities (including social influences) are taking shape (sociocultural environment and cognitive environment). These shifts underpin the evolutions in eating habits and meat consumption described in the following sections.

Finally, while these changes clearly stem from both public and private actions, we have deliberately chosen not to specify them in detail. The primary aim of TRAMe is to examine whether changes in the food environment can drive shifts in food practices. The discussion on the public and private policies needed to support these changes is in the concluding section.

In the physical environment

The supermarket offer

By 2035, supermarkets will undergo several changes in the range of products available. First, processed meat products, including ready meals (e.g. lasagne, gratins,

22 For example, Papachristos *et al.* (2013) examined the emergence of the "functional foods" market as a result of interactions between the food system and the pharmaceutical system.

23 See for example https://ifip.asso.fr/place-des-marches/actualites-des-marches/vers-une-experimentation-du-remunerascore/

etc.), snacks (e.g. pizzas, wraps, sandwiches, etc.) and processed meat items (e.g. sausages, mince, meatballs, etc.) will change in two key ways: meat portions in these products will gradually be reduced; and they will increasingly combine animal and plant-based proteins—for example, chicken-rice balls and pork-quinoa sausages[24] will become more common on supermarket shelves. Then, between now and 2035, the range of plant-based products will expand and become more appealing, including vegetable patties, tofu, tempeh, substitutes for animal products, and pre-prepared or pre-cooked legumes. Finally, this shift is not only about variety—it will also be driven by proactive marketing strategies from brands: prices of substitutes will be reduced to match or undercut their meat equivalents, in-store and online promotions will become more frequent, and loyalty programmes will reward purchases with points and offer additional discounts.

Beyond changes in product offerings, supermarkets are undergoing layout modifications. A "flexitarian" section is emerging, displaying a mix of plant-based and reduced-meat alternatives (from minimally processed options to direct substitutes, etc.) making it easier for consumers to take initial steps towards reducing meat consumption. Similarly, a "seasonal fruit and vegetable" section is becoming a standard feature. In larger stores, the dual placement of plant-based alternatives (both in a dedicated section and alongside their meat-based equivalents) has become the norm. Meanwhile, fruit, vegetables, pulses and "plant-based alternatives" are being strategically positioned along the main shopping routes of customers, while the size of these sections is expanding compared to the meat sections. Certain social groups are particularly receptive to these changes—especially those for whom sustainable consumption becomes a "default choice" rather than an active decision. This applies, for instance, to middle-class families in Group 3, and affluent households in Group 12, who may not have a strong interest in plant-based products and traditionally place high value on meat as a source of pleasure and status. However, their increased exposure to such plant-based options will gradually shift how these products are perceived. Of course, the greater visibility of plant-based products—whether through strategic placement in stores or more frequent promotional offers—also influences other consumer groups.

Other changes are taking place in the range and layout of products in supermarkets. The two senior citizen groups are especially affected by the development of dedicated product ranges and facilitated store layouts, as well as supermarkets that provide assistance at the shelves (to help with reading labels, handling loose goods, etc.) and reserved shopping hours. For their part, lower-income groups (such as low-income urban households) are affected by retailer commitments to offering an ever-expanding selection of fruit, vegetables and pulses at affordable prices (e.g. "less than €2") as well as by changes in social grocery stores, which are incorporating greater variety, fresher products, and more fruit and vegetables.

Foodservice

By 2035, restaurants and fast-food menus will gradually evolve to include more meat-free options, with adjusted portion sizes and lower prices compared to meat-based dishes. Several new concepts are gaining traction, including: plant-based food trucks operating in rural areas, the rise of plant-based caterers in cities, delivery services offering ready-to-cook meal kits, and restaurant chains built around using unsold food. These innovations appeal to different social groups—respectively, those in rural areas, those with higher cultural capital, and those in financially unstable situations. The restaurant voucher system, which by 2035 will include an incentive to consume plant-based and sustainable food, further encourages these changes, particularly among groups already inclined toward them. Finally, a sustainability charter has been introduced for restaurant owners, covering the use of plant-based ingredients, product sourcing and seasonality. It is presented in a way that resonates with groups seeking modern and recognized cuisine, such as Group 8 "Single men" and Group 10 "Affluent senior citizens".

In terms of foodservice, the shift towards a more plant-based diet will continue, benefiting both family groups and student groups. Additionally, new initiatives are expanding access to collective catering: university dining facilities are opening to senior citizens on certain days for lunch and dinner, while company restaurants are opening in the evenings (with or without takeaway options). These changes will allow new audiences to access these services, introducing them to new recipes and familiarizing them with more sustainable consumption habits.

24 These examples are taken from the commercial offer of British supermarkets. See Grasso and Jaworska, 2020.

New food options for consumers

The transformation of food outlets is driven by local dynamics: regional food projects (*Projets Alimentaires Territoriaux*—PAT), now established as genuine tools for regional planning and development, are being used to reduce food deserts and "swamps", stimulate markets and support alternative distribution channels, which particularly benefit "Urban middle-class families". By 2035, the social safety net will be strengthened: food aid will include more fruit and vegetables and new alternatives will be developed, such as purchasing groups, mobile kitchens and grocery trucks, food vouchers, and more. These measures primarily benefit "Low-income rural families" who face significant constraints and often rely on food aid—although local solidarity networks and self-production also play a role.

The presence of "food centres" in the regions will create opportunities for social mixing and the sharing of certain behaviours. These centres will bring together groups such as "Single women", "Urban middle-class families" and "Highly educated affluent households" through cooking workshops and other exchanges. Occasionally, more precarious groups whose sources of food will be linked to these centres will also participate. By combining AMAP (community-supported agriculture) drop-off points, farmers' markets, food aid distribution, and welcoming spaces for discussions and workshops, these centres will become lively and popular places. This community dimension will also be present in shared canteens, which will serve as spaces for learning how to manage budgets and building social ties, which are particularly important for seniors on modest incomes and "Rural middle-class families". For others, the shift will take place through digital channels such as messaging app groups for sharing local tips (used by "Urban middle-class families") or apps for tracking green goals, popular with the more affluent classes.

Finally, **distribution channels that are currently marginal** (e.g. short supply chains, AMAP, purchasing groups, etc.) **will gain momentum**. Markets will become more valued and widespread, supported by urban renewal programmes that will particularly appeal to groups seeking authenticity and proximity, such as "Low-income rural families" and "Affluent seniors citizens". Alternative circuits such as AMAP, produce boxes of local and seasonal products are particularly attractive to "Highly educated affluent households" and "Rural middle-class families".

In the socio-cultural and informational environment

TRAMe also anticipates changes in the information available to consumers and in social norms and perceptions around food. **By 2035, in addition to environmental labelling, new labels will be introduced**: an "animal welfare" label (which will appeal to both "Highly educated affluent households" and "Low-educated affluent households"), a label indicating fair remuneration for producers, and a "new French cuisine" label for restaurant owners. At the same time, requirements to indicate the origin of food served in commercial catering will become more widely implemented and promoted.[25] But labels are only part of the picture. They help drive changes upstream in the supply chain and speak primarily to households that are already sensitized—those who "choose" their ethical commitments through the lens of their existing value systems. These value systems—which shape a household's level of predisposition towards sustainable food—will themselves evolve under the influence of standards promoted by both public and private actors.

Public communication campaigns convey new messages: campaigns focused on "animal welfare", "flexitarianism", "healthy ageing" and "nutrition and health" will influence the different groups in different ways. Television and radio programmes will promote sustainable food through a narrative of novelty and discovery, or through traditions (allowing them to reach both "Single women" and "Senior citizens on low incomes with few qualifications"). Recipe websites, along with the "food" sections of major newspapers and women's magazines will evolve to reflect these themes. These campaigns and messages will avoid injunctions and moralizing: their aim is to normalize current shifts in a positive way. Together, they will contribute to a coherent narrative—one that tells the story of a "new French-style meal".

Restaurant owners (including fast food outlets), keen to boost sales of their plant-based options, **will adapt their communication and advertising strategies accordingly.** The same applies to retailers, who were the top advertisers in France in 2023. They will increasingly promote values such as proximity, seasonality and diversity, while also highlighting the evolution of their business models (e.g. hosting markets in car parks, partnering with independent plant-based caterers, etc.). In addition, these actors will collaborate with opinion leaders to reinvent

25 https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000049907936

Food environments consist of the physical, economic, socio-cultural and cognitive components of our food habits, as shown in the illustration above. TRAMe2035 simulates immersion in new food environments based on the changes described in Figure 9 below.

FIGURE 9. Overview of the changes in food environments simulated in TRAMe

Physical environment

New products and distribution

- new flexitarian and legume-based products
- new shelf space for "flexitarian" and "seasonal fruit and vegetables"
- dual location for plant-based alternatives
- increase in the visibility of shelves for fruit and vegetables, legumes and plant-based alternatives
- developing specific product ranges and store navigation paths for seniors
- selection of plant-based products at affordable prices
- developing the range of social and fair trade grocery stores
- growth of alternative distribution outlets

Collective and commercial catering

- more affordable meat-free options on the menu of restaurants and fast-food outlets
- meat portions reduced
- new concepts: "veggie" food trucks, plant-based caterers, urban vegetarians, delivery of "ready-to-cook" boxes, chains that make use of unsold items
- incentive to consume plant-based and sustainable food via restaurant vouchers
- sustainability and seasonality charter for restaurant owners
- greening of collective catering continues
- company restaurants to open in the evening

New food options

- reduction in food deserts and food swamps
- growth of open-air markets and market halls
- expansion and improvement of the food aid on offer
- proliferation of community food hubs and shared canteens
- digital applications for sharing local tips or monitoring personal goals

Socio-cultural and information environment

- general public communication campaigns ("new French-style meal") and campaigns targeting certain groups: "animal welfare", "flexitarianism", "ageing well", "nutrition-health"
- media: new television and radio programmes on sustainable food, change in coverage by the mainstream, food and women's press
- engagement of various opinion leaders (athletes, influencers, medical staff, NGOs, etc.)
- online recipe sites promoting plant-based food
- evolution of communication and advertising investments by food brands and retailers
- plant-based reinvention of traditional meals during holiday times, including festive and summer holidays
- new labels: animal welfare, fair pay, "nouvelle cuisine française", increased presence of the "Origine France" label

Economic environment

A relatively stable context despite a few developments:

- increase in the number of special offers on plant-based products in supermarkets
- reduction in the price difference between organic and conventional products, and also between plant-based alternatives and meat
- moderate increase in the minimum wage

the key moments in the food calendar (and promotional marketing). For instance, the summer barbecue will be reframed around the idea of "summertime outdoor cooking" without systematically emphasizing meat. While at Christmas, exceptional foods will be redefined, with greater focus on seafood or mushrooms.

A diversity of opinion leaders will make it possible to reach a wide range of audiences: influencers will engage "Single women" and "Students"; sportspeople will appeal to "Single men", "Students" and "Urban middle-class families"; chefs will speak to both "Low-educated affluent households" and "Highly educated affluent households"; health and social care personnel will reach senior citizens, women and "Urban middle-class families"; while environmental NGOs will resonate particularly with "Highly educated affluent households". The development of marketing and advertising restrictions on products of lower nutritional quality will also form part of this broader trend.

These messages will be all the more effective when supported by real-life stories, i.e. observable changes in people's everyday food environments.

In the economic environment

By 2035, we envisage an economic context broadly similar to the present in terms of prices and household financial resources. While we are fully aware of the potential for future disruptions (the COVID-19 crisis, which was difficult to foresee just a few years ago, being a striking example), we have chosen a cautious assumption, i.e. one that excludes major crises, inflationary shocks or significant reallocations of household budgets. Furthermore, economic factors do feature in our trajectories, but primarily as descriptors of household situations rather than as the main drivers of change. In particular, the proactive use of price-based instruments (e.g. tax on meat) seems unlikely in the near future, or at best fragile, as the necessary political and social conditions are not currently in place.

Some changes will occur, however, as a result of proactive public action involving stakeholders across the agri-food system: **the price gap between organic and conventional products will narrow slightly** between 2025-2035, particularly due to improved practices along the value chain; **similarly the price difference between plant-based alternatives (patties and meat substitutes) and conventional meat will decrease,** supporting the continued democratization of these products. Changes in preparation methods will also have an impact on prices: reducing the portion sizes in restaurants or shops will help keep local and high-quality meat affordable. **Finally, in terms of resources, we assume only a "moderate" but nonetheless crucial increase in social welfare benefits** for precarious rural and urban households.

Box 7.

Application of the scenario approach to Group 6 "Urban middle-class families" (9% of the population)

The full narrative of this group's journey is available in *Book 2—Socio-narratives of food transition for 12 social groups*.

This group is associated with the middle class, which is defined not only by income but also by adherence to certain social representations. For this group, social status plays a significant role, especially in relation to concerns about potential or actual downgrading. Households in this group tend to redefine their living conditions rather than passively accept them, seeking to imbue them with new meaning. For part of this group, whose education levels are relatively high but with diverse incomes, "self-realization" involves positioning their lives outside the conventional consumerist framework (Grossetête, 2019). Ecological awareness thus becomes a means of "gaining respectability" (Comby, 2023), or even of achieving a sense of social advancement by emulating the practices of more affluent classes, particularly in terms of eco-gestures. In this context, food becomes a key consumer practice through which social distinction is expressed: seasonality, the use of raw ingredients, and a form of frugality shape their food-related expectations.

The matching process carried out with the INCA 3 database (see *Approach* section) shows that adults in this group consume meat at a level very close to the average (129 g/day), with consumption distributed evenly among the three types of meat (pork, beef, poultry), over 80% of which is cooked at home. The second largest source of meat consumption is commercial catering, accounting for an average of 20 g/day.

The process of change within this group is facilitated by their growing ability to translate aspirations of demonstrating social status through consumption into actions, supported by shifts in the food environment. The reduced centrality of meat in their diet, alongside the increased variety of available food options, contributes to their desire for distinction. Certain changes align with their established practices and representations, such as:

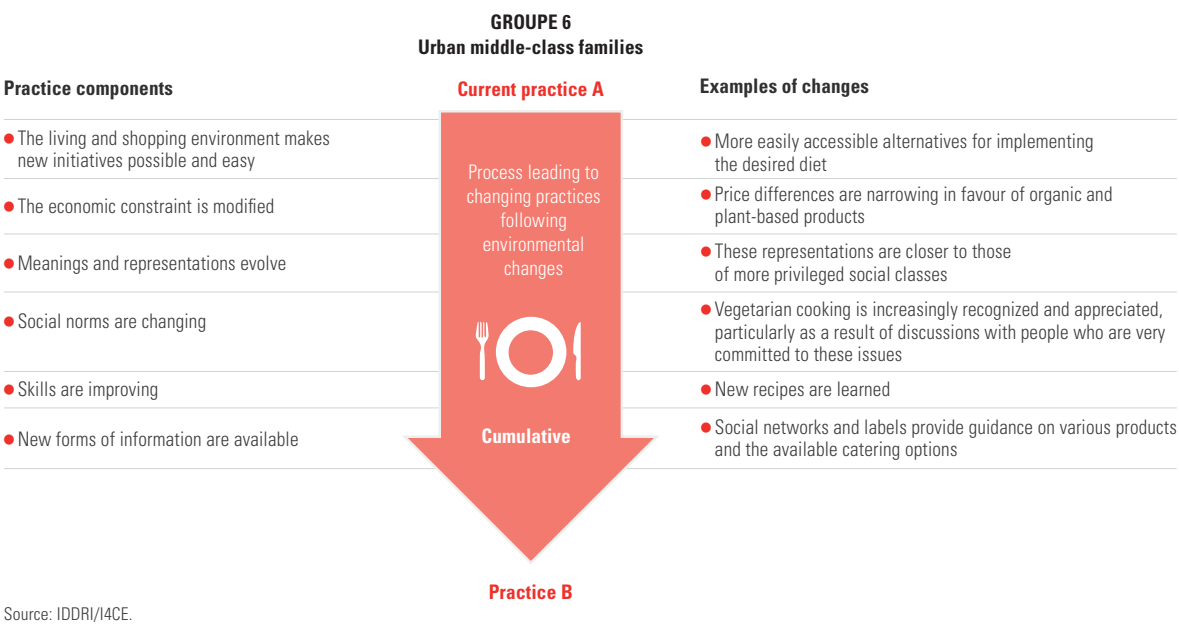
the expansion of alternative purchasing channels (e.g. AMAP) by 2035, the promotion of the consumption norm around "seasonal fruits and vegetables" by supermarkets through dedicated stalls, and the redevelopment of supermarket organic offerings. These shifts enable them to adopt a diet they perceive as more frugal and less reliant on the agri-food industry. As a result, two subgroups emerge: one consisting of the more highly educated (55% of the group) and the other of the less educated (45%).

In the first subgroup, their trajectory leads them to forgo meat in five meals a week, driven by the cost of meat, their awareness of its environmental impact, and the influence of the social and cultural environment. Sensitive to the comments of food influencers on social networks, this group also engages in the exchange of best practices and recommendations, follows food-related news in their communities, and participates in community food hubs, which gain momentum during the decade considered by TRAMe. Supported by local authorities, these community food hubs bring together various food-related activities within a given area. This exposes them to individuals who have significantly altered their diets, particularly with respect to the role of meat (Piazza *et al.*, 2015), making it easier to cook and eat without meat. These interactions align with a "less but better" approach to meat, especially in out-of-home catering, where they are likely to choose restaurants with certified practices.

For the second subgroup, this translated to four meat-free meals per week. These households, like the rest of the group, face limited economic flexibility but are somewhat more distanced from the environmental norm due to a lower level of education. The messages from the medical community regarding processed and red meat, along with the increased availability of a wider range of meat substitutes in supermarkets and company canteens (now offering evening take-away options for employees, which is particularly useful for these families), are key factors in shaping their behaviour. Additionally, economic considerations—such as managing their budget and saving money—hold equal weight to ecological concerns. As a result, these households are more inclined to adopt a "flexitarian" approach than to identify with the vegetarian community, towards which they feel a certain "discordance" (Séré De Lanauze & Sirieix, 2021).

Result: As a consequence of these developments, this group will primarily adjust their frequency of meat consumption, decreasing from 11 times per week to approximately nine times (a reduction of about 17%). Meals eaten at home and away from home (in commercial or collective catering) contribute equally to this reduction. Meanwhile, average portion size will see only a modest reduction (around 3%). Overall, meat consumption for this group in 2035 will be 19% lower compared to 2023. Given the factors influencing this group (particularly their gradual questioning of the role of meat in general), the decline affects all three meat categories, with poultry experiencing a smaller reduction, reflecting broader societal trends.

FIGURE 10. Applying the model of changing practices through action on food environments to Group 6 "Urban middle-class families"



Source: IDDRI/I4CE.

Four types of trajectories are emerging for the 12 social groups

Changes across the four dimensions of the food environment are reshaping the dietary practices of different social groups. In the following section, we describe four distinct trajectories of change, each bringing together between two and five social groups from our typology. We begin by explaining the rationale behind these groupings, before presenting a summary of the trajectory associated with each of the 12 social groups.

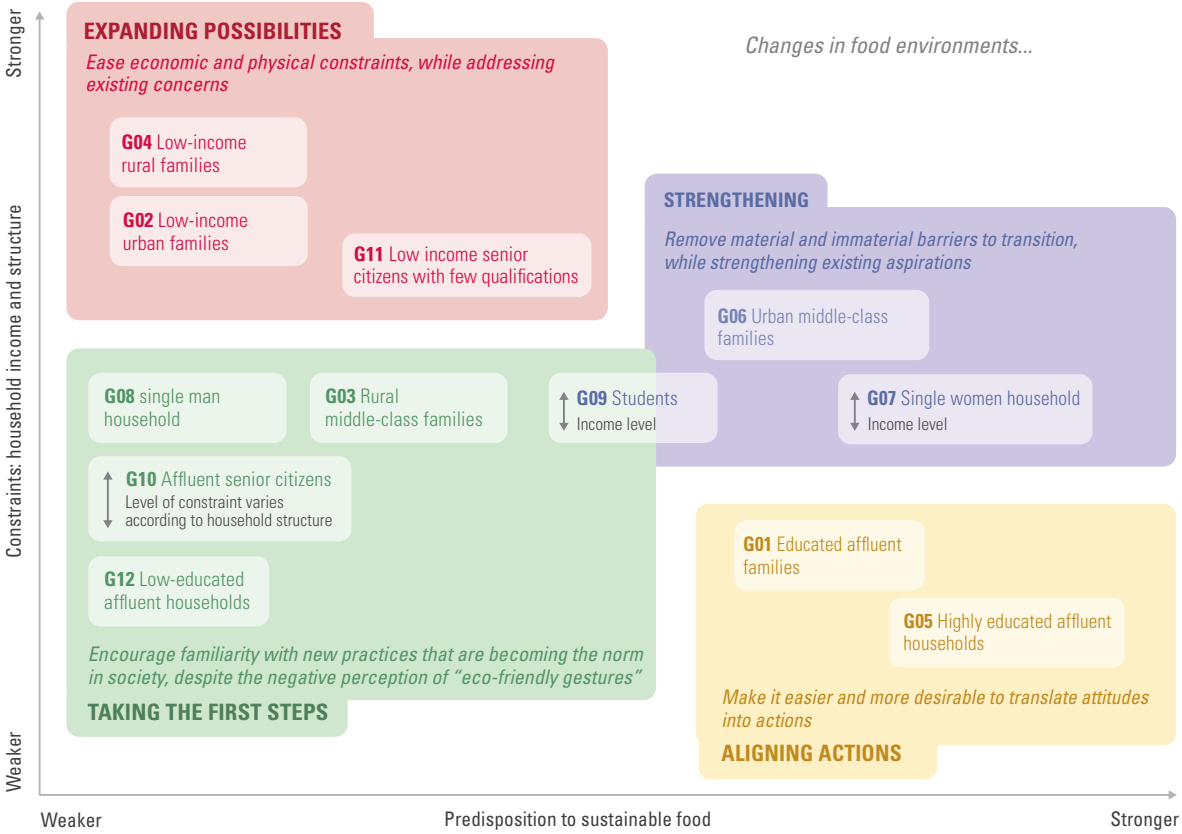
Twelve groups organized into four standard trajectories: approach and contributions

The 12 social groups have been classified into four standard trajectories using a two-axis framework (see **Figure 11**). The horizontal axis represents the level of predisposition to sustainable food, while the vertical axis reflects the level of social and economic constraint. These two dimensions (constraint and predisposition) are central to the TRAMe approach, which seeks to analyse change at the intersection of current practices and the opportunities created by evolving food environments. They are also key to wider debates on the food transition.

To construct this figure, we selected specific socio-demographic characteristics from those used in the TRAMe typology. In the scenario, six variables are used (level of education, income, gender, age, place of residence, household structure), chosen for their relevance in explaining dietary and sustainable practices, as well as for their availability in the databases used (*Book 3—Methodological framework*). In this figure, four of these variables (level of education, gender, household structure, income level) are shown and schematically assigned to one of the two axes—although in reality they influence both.

- "**Predisposition**", refers to the informational, social and cultural factors that lead a group to have a positive attitude towards the main types of sustainable consumption (such as products from sustainable production methods and reduced meat consumption). This does not necessarily imply action. In this figure, the key socio-demographic variables used are level

FIGURE 11. Four key pathways of dietary change across social groups



Source: IDDRI/I4CE.

of education and gender.[26] The further to the right a group is placed on the graph, the greater its level of predisposition.

- "**Constraints**" refer to two main factors that can limit a group's ability to adopt more sustainable eating habits: income level and household structure (i.e. household composition).[27] The higher a group is placed on the vertical axis, the greater its level of constraint.

This grouping approach highlights mechanisms shared by social groups (within each trajectory), while also revealing differences, that act as "filters", shaping how they experience changes in the food environment.

This approach also informs private and public stakeholders about the types of households they are addressing and the factors to consider when supporting the development of more sustainable practices. On the one hand, the aim is to narrow the gap between positive attitudes towards sustainable food and actual behaviours by making sustainable choices easier, both materially and symbolically. This is particularly relevant for the *Aligning actions* and *Strengthening* groups. On the other hand, it involves presenting a new set of possibilities that may resonate with existing concerns, while also making gradual adoption more attainable. This is particularly relevant for the *Taking the first steps* and *Expanding possibilities* groups.

Finally, the identification of standard trajectories contributes to strategic thinking on how to manage the transition. Notably, only the *Aligning actions* family, comprising two social groups, combines both a relatively low level of constraint and a high level of predisposition, making it responsive to a "consumer-citizen" approach, provided that supportive changes in the food environment are in place. However, this family accounts for just 15% of the population, meaning that their mobilization alone is not sufficient to meet environmental or health objectives. An effective transition toward sustainable food must therefore engage the majority of social groups, particularly those facing high levels of constraint and/or a limited predisposition towards sustainable food. This calls for moving beyond the "consumer-citizen" model and instead taking a broader view of the drivers of change—expanding the range of policy measures across all four dimensions of the food environment.

The standard trajectories and corresponding positions of each social group

STANDARD TRAJECTORY 1 **G06 - G07 - G09**
STRENGTHENING ***(~20% OF THE POPULATION)***

These groups are characterized by a high level of predisposition to sustainable food and a medium level of constraint. For them, food is a means of expressing and asserting a form of autonomy (even in the context of sometimes limited income). Health, animal welfare and environmental concerns are key drivers. The greening of the food supply, shifting peer group norms, and a degree of imitation of the practices observed among more affluent households (from the "Aligning actions" family) contribute to a significant reduction in meat consumption—ranging from 20% to 36%.

Group 6: Urban middle-class families

This group reflects a middle-class profile in transition. Already questioning their consumption habits, they are supported by changes in the food environments that make it easier to pursue respectability and a sense of social advancement—often by imitating the practices of more affluent households. The make greater use of short supply chains and pay close attention to seasonality, encouraged by local initiatives and changes in supermarkets. Physical spaces and social networks help them connect with households who share similar concerns but have already adopted more sustainable practices and can act as sources of support. The evolution of this group's practices is therefore shaped above all by their living environment, purchasing context, social ties, and a desire for respectability.

26 For this first axis, we have chosen to highlight two variables: level of education and gender, both of which are considered particularly decisive. Level of education is widely recognized as one of the most robust indicators for analysing the reception of nutritional messages, meat consumption and food purchasing behaviours (Inserm, 2014; Méjean *et al.*, 2016; Turrell *et al.*, 2003), particularly because it enables the integration of the socio-economic position of individuals as well as the socialization patterns that have shaped it (Galobardes, 2006; Turrell *et al.*, 2003). Gender is key to understanding differences in the time dedicated to food, meat consumption patterns and sensitivity to nutritional or environmental messages (Champagne *et al.*, 2015; Fantechi *et al.*, 2024; Méjean *et al.*, 2017).

27 Income level is correlated not only with financial constraint, but also with differing aspirations and, in some cases, a "mentality of scarcity" that can influence eating habits (Laraia *et al.*, 2017; Lelievre *et al.*, 2008). Household structure (whether an individual lives alone, as a couple, or in a family) helps capture the degree of flexibility in food consumption. It also reflects differences in consumption (Gojard *et al.*, 2017; Plessz & Guéguen, 2017; Eirnhorn, 2020) and the extent to which individuals can be supported in their food practices or exposed to new ones that they may adopt (Berge *et al.*, 2012; Gadhoke *et al.*, 2015; Pernin, 2014).

Group 7: Single women

This group has a high degree of autonomy in its food choices. The convergence of pre-existing concerns—primarily related to health and the environment—and wider socio-cultural changes is supporting their shift towards more sustainable diets. These changes include the emphasis placed on sustainable consumption by more affluent groups, frequent positive media coverage, and the spread of new norms into the social spaces in which they participate. New offerings (such as plant-based catering chains, more plant-based options in workplace catering, and new supermarket sections) are also leading them to embrace the concept of sustainable food. Already reflective about their diets and consuming less meat than average, the women in this group are expected to further reduce their intake of meat and dairy products, with many moving towards flexitarianism and a minority adopting vegetarian diets.

Group 9: Students

The description of this group of students aged between 18 and 25 highlights a contradiction: despite relatively high levels of environmental awareness, engagement and commitment, their dietary footprint remains high in ecological terms—in fact, this group records the highest meat consumption in our sample, particularly beef. This period of student life marks a shift towards food autonomy, as individuals move away from the habits established in the family home. It is a time of change, but one shaped by constraints in both time and money. Collective catering—and commercial catering such as fast food—plays a central role. It exposes students to more plant-based meals, which in turn can influence their food choices at home. Opinion leaders and peers also help to spread positive norms around sustainable food, often tied to concerns about health (e.g. weight), the environment or animal welfare. Other important enabling factors include a reduction in marketing pressure and improved living conditions for scholarship students, which help to remove some of the barriers to dietary change. As shown in **Figure 11**, income level (often linked to that of the parents) is an important variable. Within this group, a first subgroup, more concerned and more engaged, belongs to the "Strengthening" family; while a second, less engaged subgroup is more closely aligned with the "Taking the first steps" family.

STANDARD TRAJECTORY 2 **G03 - G08 - G10 - G12**

TAKING THE FIRST STEPS (~40% OF THE POPULATION)

The level of constraint in these groups is variable, but in general meat remains central to their diets for reasons of practicality, familiarity, tradition and pleasure. Their transition trajectory is shaped by a gradual exposure to practices that are becoming more widespread. This shift is influenced by the role of women and children, the impact of opinion leaders (doctors, children, sports influencers, television programmes) and the normalization of plant-based options in the shops they use. Other motivating factors include an interest in local food, convenience, gastronomy and animal welfare. Overall, reductions in meat consumption remain moderate, ranging from 7% to 10%.

Group 3: Rural middle-class families

In this group, food consumption plays an important role in signalling social status and distinguishing themselves from the working-class households. These families are characterized by a desire for dietary variety and a degree of adherence to health-related food norms. However, this is sometimes in tension with their conception of food as a source of pleasure (e.g. the continued high consumption of charcuterie) and with certain budgetary constraints. The emerging trend towards eating slightly less meat is driven by two factors: an attempt to reconcile competing aspirations, and a desire for distinction. This shift is supported by a range of factors: the growth and visibility of plant-based food options (on supermarket shelves and in restaurant chains, tasting events, etc.), positive messaging in the media (particularly television programmes), greater public attention to animal welfare, and the promotion of meat reduction norms in schools, through children and via local associations.

Group 8: Single men

In this group, eating habits are shaped by practicality, the search for satiety and pleasure. Meat consumption, particularly pork, is high and tends to function as an easy, habitual source of enjoyment. It is also linked to an ideal of masculinity focused on strength and muscle mass. Within the group, a first subgroup will remain largely unconcerned about food choices. A second subgroup, however, will begin to show some interest in dietary change, partly influence by the messaging of athletes and online influencers who speak to their interest in physical fitness—though not exclusively for that reason. Despite this difference, both subgroups are strongly influenced

by convenience. As a result, changes in the physical food environment, i.e. what is readily available and promoted in shops and food outlets (especially fast food), have a fairly direct impact on their behaviour. These developments, alongside shifts in socio-cultural norms, will lead to a slight decrease in the frequency of meat consumption and a partial substitution of pork with poultry.

Group 10: Affluent senior citizens

The eating habits of this group lie at the intersection of pleasure, tradition and openness to progress. Overall, their meat consumption is lower than average, although notable gender differences persist: men consume more meat than the group average, while women consume less. Within this context, several factors contribute to moderate—though not insignificant—dietary changes. Influences include opinion leaders in the health sector, home-based services, new products and distribution models, and public health campaigns. These act together to introduce new meanings and opportunities for change. Among the "couple" subgroup there is some movement towards healthier diets, particularly under the influence of doctors, who play a key role. Single women in this group prioritize convenience and are attentive to nutritional aspects, making the availability and accessibility of healthier options especially important. In contrast, single men in this group show little change in their eating habits, due to practical constraints around meal preparation and long-standing dietary norms acquired over the course of their lives.

Group 12: Low-educated affluent households

This group places a high value on consumption and tends to express distrust toward environmental discourse. As a result, messages urging them to change their eating habits or relying on persuasive arguments tend to have little effect. Nonetheless, a combination of four factors contributes to a moderate reduction in their relatively high consumption of meat, both raw and processed. First, the desire to maintain—or even increase—purchases of quality meat (in line with traditional values) while keeping within budget encourages greater attention to quantity. Second, both women and men in this group are influenced, in different ways, by public health messaging and campaigns. Third, plant-based products are becoming more familiar and are increasingly promoted through tailored marketing strategies. Finally, changes in their children's attitudes help to foster openness and a willingness to try new products.

STANDARD TRAJECTORY 3 **G02 - G04 - G11**
EXPANDING POSSIBILITIES ***(~20% POPULATION)***

These groups face a high level of economic constraint, which in some cases results in food insecurity or deprivation. Their predisposition to sustainable food is low, though this does not imply an absence of concern about diet. Key drivers of change along this trajectory include a reduction in financial pressures, changes in the services available in the places they frequent (such as collective catering, food aid, or services for older adults), and exposure to messages from the health and education sectors. Influence from younger generations—particularly children or grandchildren—also plays a role. Together, these factors contribute to moderate reductions in meat consumption, estimated at between 5% and 10%.

Group 2: Low-income urban families

This group faces a high level of constraint—financial, material, time-related and social norms—which affects both their eating habits and their perceptions of food. Their diets are often shaped by a sense of deprivation and, in some cases, frustration. Several factors contribute to a modest shift in practices. These include a slight improvement in purchasing power, changes in the food supply they access (both through food aid and conventional outlets), and a shift in how plant-based foods are perceived—helped by peer exchanges, messages from the health sector, and the influence of school canteens. Together, these developments support a partial reformulation of eating habits, marked by an increase in fruit and vegetable consumption and a slight reduction in meat intake.

Group 4: Low-income rural families

This rural group faces strong constraints and tends to resist environmental or nutritional messaging. Nonetheless, several factors are expected to lead to modest changes in eating practices by 2035. On one hand, the promotion of more local food, combined with existing dissatisfaction (for example, with processed food), helps to trigger shifts in behaviour. On the other hand, greater availability of ready meals with less meat, changes in the food aid system, and an increase in social welfare benefits also contribute to this gradual evolution.

Group 11: Senior citizens on low incomes with few qualifications

These modest-income older adults are guided by a strong sense of what is "reasonable" and by values of frugality rooted in their upbringing. With age, these values

are increasingly coupled with a concern for health. Their meat consumption is slightly below average, with a preference for pork. Several developments in their environment contribute to gradual changes in their dietary practices. Health professionals and home helpers play a role in promoting nutritional guidance around red meat. New community spaces also emerge, enabling seniors to build social ties, share information and access affordable meals. At the same time, the food supply they encounter is evolving—whether through food aid (used by some), large retailers, or the revival of local distribution channels. Finally, changes in public discourse—particularly on television and radio—as well as the influence of their children's and grandchildren's practices, contribute to a slight reduction in meat consumption and, for some (especially women), a partial substitution of pork with poultry.

STANDARD TRAJECTORY 4 **G01 - G05**

ALIGNING ACTIONS (~15% OF THE POPULATION)

These groups combine a low level of constraint with a high level of predisposition to sustainable food practices. They adopt the logic of "small gestures"—not only out of personal conviction, but also as a means of social distinction. Several factors support the alignment between their values and their actions: the diversification of available products; the emergence of food practices and narratives that connect plant-based eating with ideas of "eating well" and gastronomy; and the spread of information about the impacts of meat consumption—through labelling, civil society campaigns, and other channels. Together, these developments lead to a significant reduction in meat consumption, estimated between 19% and 32%.

Figure 12. Four examples of change trajectories

Group (% of population in 2023)		
Eating and consumption habits	**Key drivers in food environments**	**Standard trajectory (% change in meat consumption 2023/2035)** **Changes in practices**
G04 Low-income rural families **(5.1%)**		
Severe constraints Opposition to environmentalist imperatives and vegetarianism, tension regarding nutritional messages Priority given to pleasure and satiety, and concern for 'natural' products Above-average meat consumption	Food aid is undergoing change Moderate increase in minimum social benefits Influence of school canteens Changes in the range of prepackaged meals (recipes and prices) Remuneration score	**Expanding possibilities (-7 %)** Slight decrease in frequency and portion sizes of meat Higher quality, locally sourced meat Buying in bulk and locally
G05. Highly educated affluent households **(3,3 %)**		
Limited constraints Ecological behaviour, advocating a simple lifestyle and adhering to sustainable food practices 'Conscious consumers' (organic, seasonal, local, etc.) Frequent use of out-of-home catering Below-average meat consumption	Alternative supply chains NGO campaigns, 'new French-style meals' Changes in supermarket supply and new restaurant concepts Food halls Birth of a child	**Aligning actions (-35 %)** Significant decline in meat consumption, reduced in catering
G06. Urban middle-class families **(9,4 %)**		
Moderate constraints Partially chosen sobriety, distancing from consumption society to gain respectability Preference for raw products, seasonality, alternative supply chains Average meat consumption	New retail channels Social media influencers, doctors Food halls Semi-processed plant-based products Evolution of price differences between meat and plant-based alternatives Plant-based caterers and corporate catering	**Strengthening (-20 %)** Significant decrease in frequency, slight decrease in portion size Purchasing labelled products
G10. Affluent senior citizens **(13,2 %)**		
Low constraints High-consumption lifestyle considered normal and modern, downplaying the ecological crisis Food linked to identity (local products, French origin) Appeal of raw products Above-average meat consumption, associated with pleasure	Community workshops, recipe apps Quality charter for catering Influence of public health campaigns, doctors Evolution of retail distribution and prepared meals	**Taking the first steps (-7 %)** Slight decrease in meat portions Frequency remains stable except for a slight decrease among single women

Group 1. Educated affluent families

For this group "eating well" (and being seen doing so) is a matter of pleasure, pride and social status. These households have both the economic means and the cultural capital to adopt nutritional and, increasingly, environmental norms related to food. This gives them a strong predisposition to reduce meat consumption. However, a gap often exists between their declared flexitarian values and their actual eating habits. Changes in their environment (including the messaging of public and private actors, and shifts in the food available in the canteens, shops and restaurants they frequent) are expected to continue both raising awareness of this gap and contribute to its narrowing. Within the group, the relative weight of cultural and economic capital gives rise to two distinct rationales: for some, food becomes the focus of "compensatory" ethics—a way of acting responsibly in one area (diet) while continuing other environmentally impactful behaviours (such as air travel) unchallenged. For others, food choices serve as a marker of "enlightened" consumption and social distinction.

Group 5: Highly educated affluent households

This group follows the trajectory of a profile already attuned to ecological issues and can be described as "consumer-citizens" when it comes to food. For these households, improved access to alternative offers (whether in supermarkets, restaurants or through delivery services) acts as an accelerator of dietary changes that are already underway or emerging. The rise of a positive narrative that redefines French gastronomy also provides a cultural anchor for this group, reinforcing their pursuit of social distinction through a more varied and plant-based diet. Their choices are strongly influenced by environmental, animal welfare and health concerns. As a result, the decline in meat consumption within this group is significant.

Figure 12 summarizes these four trajectories of change by illustrating four of the 12 socio-narratives.

Quantitative results: food consumption in 2035

An average reduction in meat consumption of 15%, with significant differences between the groups

The TRAMe exercise projects an average reduction in meat consumption of 15% between 2023 to 2035, and an overall reduction of 11% across mainland France (**Figure 13**). This corresponds to an average daily consumption of 104 grams per person (measured in cooked, ingested quantities), or 74 kgCWE[28] per year (quantities available for domestic consumption)—i.e. an average consumption slightly higher than that of Italy at present (72 kgCWE).

Changes in the demographic structure of the French population alone (ageing, rising education levels) account for only 1% of the projected 15% reduction in meat consumption. **The vast majority of the change is therefore attributable to the cumulative impact of individual shifts in eating habits, as described in the narratives** (see the *Approach* section).

These individual changes translate into results that vary considerably between groups (**Figure 14**). The "Single women" group (which already had the lowest meat consumption in 2023) shows the largest reduction, with a 36% decrease, followed by "Highly educated affluent households" who reduce their consumption by 33%. By contrast, "Low-educated affluent households" and "Low-income rural families" show only minimal reductions over the period, with declines of around 5%.

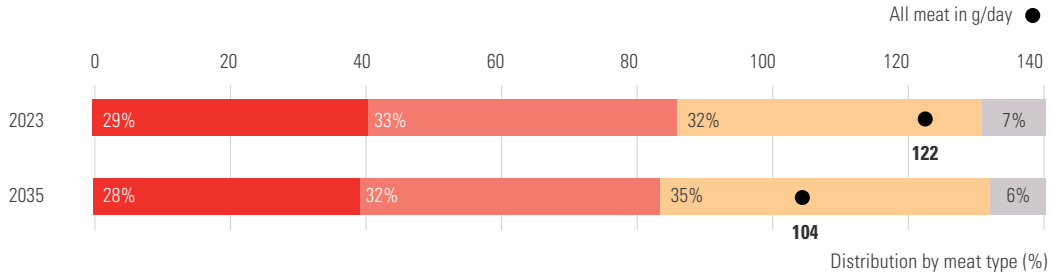
How well do the new diets of each group meet nutritional recommendations? For each typical group and individual, we estimated the nutritional effects of dietary changes under different scenarios for replacing reduced meat intake (e.g. with pulses, cereals, cheese or plant-based substitutes). These calculations tend to eliminate the risk of iron[29] or protein deficiency, and even suggest a benefit in terms of fibre intake (see **Box 8** in the Appendix).

28 "kgCWE" (kilograms of carcass weight equivalent) is the unit used to measure quantities available for domestic consumption, calculated as national production minus net exports. These quantities include both what is actually eaten and what is lost (bones, fat, skin, etc.) or wasted. The ratio of consumed to available quantities, calculated for all meat types in 2015, is expected to remain stable up to 2035.

29 In terms of iron, the primary public health concern is preventing deficiency among women of childbearing age, who are exposed to multiple risk factors. See: *https://www.hcsp.fr/explore.cgi/avisrapportsdomaine?clefr=1251*

This quick analysis is not a full nutritional assessment, but it aligns with the scientific literature. Indeed, a large body of research has examined the compatibility between health and environmental goals, concluding that diets higher in plant-based foods and lower in meat can achieve both nutritional quality and reduced environmental impacts (WHO, 2021; Nelson *et al.*, 2016; Wilson *et al.*, 2022; Mariotti and Gardner, 2020; Willett *et al.*, 2019; Fouillet *et al.*, 2023; Cobiac & Scarborough, 2019; Mota *et al.*, 2021). This is reflected in recent nutritional guidelines in several countries (Climate Action Network & French Nutrition Society, 2024).

FIGURE 13. Evolution of meat consumption in the TRAMe scenario between 2023 and 2035

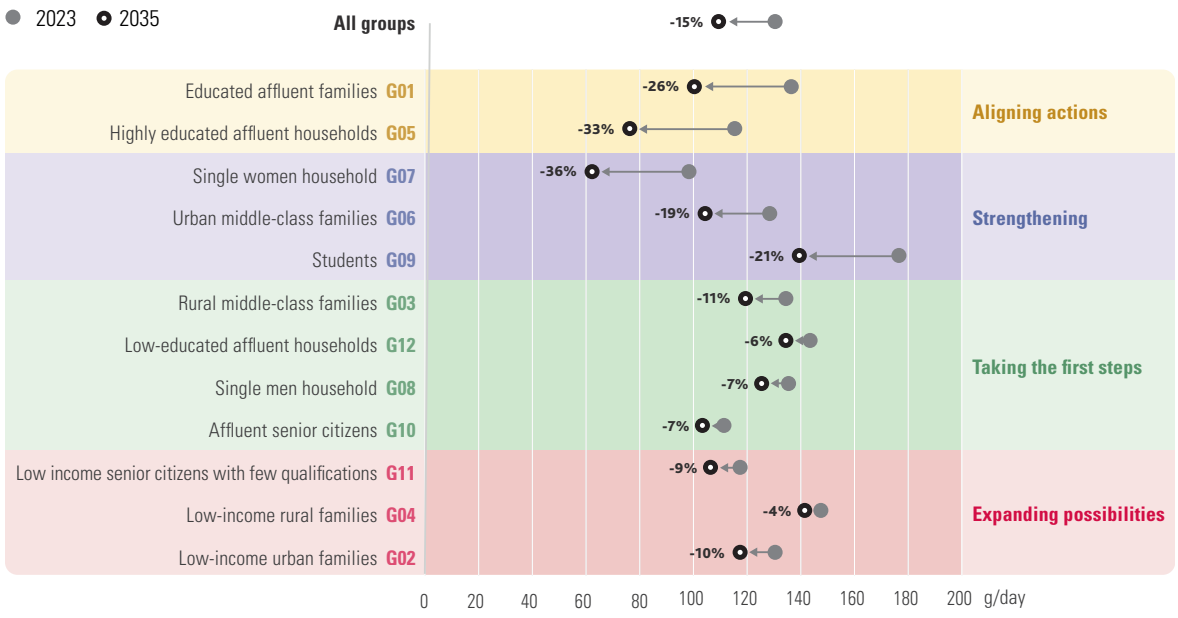


	Beef	Pork	Poultry	Other meats	All meats
Total (tCWE/year)	-15%	-14%	-4%	-25%	-11%
Average (g/d)	-18%	-17%	-8%	-28%	-15%

*Thousands of tonnes of carcass weight equivalent: including losses and waste (fat, bones, etc.)

Source: IDDRI/I4CE.

FIGURE 14. Meat consumption evolutions 2023-2035 by social group (excluding children)



Note : the average reduction in meat consumption is -14% for the total population, and -15% for the population excluding children.

Source: I4CE/IDDRI.

A reduction driven by smaller portions and less frequent consumption, mainly at home

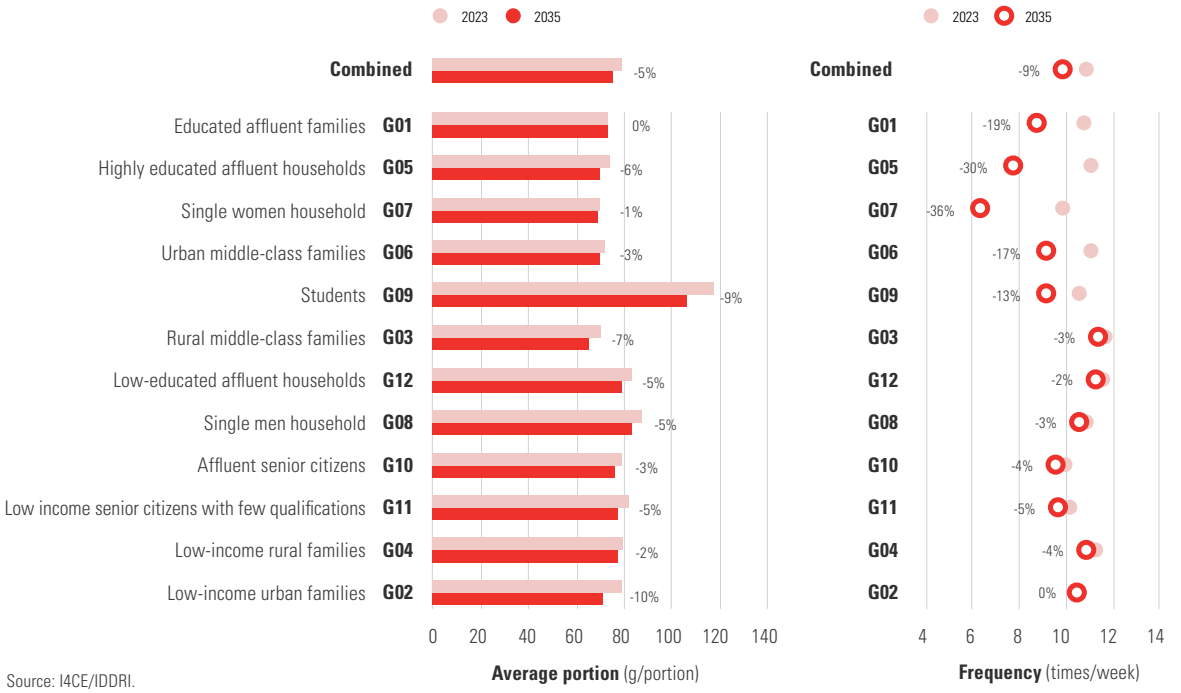
In more tangible terms, this average reduction of 15% corresponds to eating 125 grams less meat per week, bringing the total to 730 grams per week. A reduction of 125 grams is roughly equivalent to three slices of cooked ham or four small chicken fillets (around 40 g each), six to eight slices of raw ham (15–20 g per slice), one and a half portions of cooked minced beef (80 g per portion), or about two-thirds of a cooked boneless chicken thigh (160–200 g), among other combinations. Reducing meat consumption by this amount can take various forms: for example, swapping minced beef for a plant-based alternative and skipping three slices of cooked ham during the week; replacing a dish made with chicken thighs with a meat-free meal every other week; or omitting cold meats from three or four starters during the week.

Almost all groups reduced both their average portion size and the frequency of their weekly meat consumption (**Figure 15**). The only exceptions are Group 1, "Educated affluent families", who do not reduce their average meat portion size, and Group 2, "Low-income urban families", who do not reduce the number of times they consume meat during the week. The extent of these reductions vary: Groups 2 and 9 show the greatest decreases in portion size (10 and 9% decrease, respectively, mainly because the proportion of meat in meat-based products will decrease). Meanwhile, Group 7 "Single women" showed the largest drop in consumption frequency (a 36% decline, particularly by removing or substituting meat in many meals).

These results, derived from the quantitative translation of trends described in the socio-narratives, are consistent with the findings in the literature. Notably, groups with a low predisposition to change or facing strong constraints (such as those with lower socio-economic status or a high proportion of men) tend to reduce portion sizes rather than the frequency of meat consumption. Indeed, reducing how often meat is consumed—or even stopping entirely—is more commonly observed among women and individuals with higher levels of education, as shown in a UK-wide study based on consumption data (Vonderschmidt *et al.,* 2024).[30]

30 This study also shows that it was the reduction in portion sizes that had the greatest impact on the decline in meat consumption in the UK between 2008/2009 and 2018/2019. This reduction—around 1.7% per year (equivalent to 17 g less per week per person over ten years)—can be broken down as follows: approximately 50% due to a "portion" effect, 24% to a "weekly frequency" effect, 17% to a "number of consumers" effect, and 7% to a "daily occasions" effect.

FIGURE 15. Assumptions of individual changes in frequency and portions of meat consumption per group (including children) between 2023 and 2035



Source: I4CE/IDDRI.

With a few exceptions, the proportion of meat in the average meal changes fairly consistently across all categories. For example, in Group 4, meat content decreased by 5% in meals eaten at home and in commercial and collective catering. In addition, following a trend observed over several years, the French will continue to eat more meals outside the home: consumption in commercial catering rises by 21% over the period, increasing from 7% to 9% of total meat consumption. As a result, the absolute quantity of meat consumed in commercial catering remained stable, while it declined in all other segments (see **Figure 23** in the Appendix).

A greater reduction in beef and pork than in poultry

Meat consumption declines more sharply for beef (by 18%) and pork (17%) than for poultry (8%) (**Figure 13**), in line with current trends in production and consumption across these sectors (Aubert & Poux, 2024).[31] Across all groups, poultry consumption decreases less than that of other meats, and even increases in Groups 4, 8, 10 and 12 (see **Figure 22** in the Appendix).

Several driving forces contribute to these shifts, varying by group: health concerns may encourage substitution towards poultry or a reduction in charcuterie; a desire to support local production and preserve rural landscapes may favour grass-fed beef; and the influence of catering services also plays a role. It is worth highlighting the factors that may explain why poultry consumption declines at all, despite strong growth over the past decade. These include increased competition from plant-based alternatives in the convenience food segment; reduced use of poultry as an ingredient in ready meals and commercial catering; and, more broadly, a growing recognition that poultry is a type of meat like any other—a perception reflected in new nutritional guidelines in several European countries (see next section). These dynamics, given the current consumption profiles, could contribute to a reduction in poultry imports. Finally, it should be noted that TRAMe does not aim to provide sufficiently detailed insights into strategic issues by sector (product types, supply chains, etc.), as addressed in the dedicated study on the French meat sectors (Aubert & Poux, 2024).

Finally, while TRAMe focuses on the "less meat" dimension, as shown in the quantitative results, the idea of "better meat" is not absent. Progress towards "better"—whether through grazing-based systems, local sourcing, quality labels, or other forms—appears frequently in the socio-narratives, with varying intensity and emphasis depending on the group or subgroup. This dimension also features in the broader reflection on how environments evolve.

31 According to FranceAgriMer, apparent per capita meat consumption in kilograms of carcass weight equivalent (kgCWE) per year between 2011 and 2023 changed as follows: a 14% decrease for beef, a 6% decrease for pork, a 22% increase for poultry and a 24% decrease for other meats.

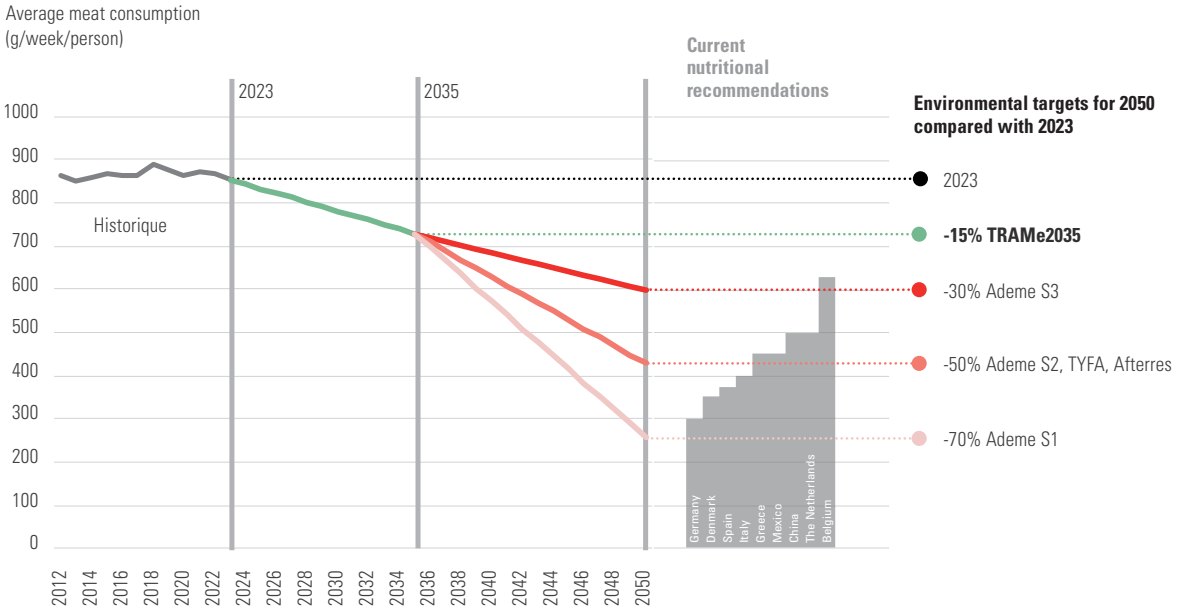
What are the implications of TRAMe for the period after 2035?

The TRAMe scenario sets out an average trajectory for a 15% reduction in meat consumption by 2035, relative to 2023 levels. Its aim is not to prescribe a specific outcome, but to explore the social conditions under which a reduction pathway could be implemented in line with environmental and health goals.

To place the TRAMe2035 trajectory in context, Figure 16 presents two types of objectives: **nutritional recommendations** from several countries (RAC & SFN, 2024), and meat reduction targets from scenarios designed to meet agricultural **environmental objectives** by 2050 (ADEME, 202; Couturier *et al.*, 2016; Poux & Aubert, 2018).

From an environmental perspective, the reduction achieved in TRAMe by 2035 represents a first step—one that puts us on the right track to meet 2050 targets. However, to remain aligned with those objectives, the trajectory initiated in the TRAMe scenario will need to continue beyond 2035 and likely accelerate between 2035 and 2050.

FIGURE 16. A reduction in meat consumption consistent with long-term objectives



Reading key: The objective of reducing meat consumption by 50% in scenario 2 of Ademe, TYFA and Afterres is compatible with the nutritional recommendations of Belgium, The Netherlands, China, Mexico and Greece, but not of other countries

Note: the countries listed are exclusively those that provide a recommendation on overall meat consumption (and not just red meat and charcuterie), which at this stage is not the case in France. Italy's recommendation does not include the consumption of processe

Source: I4CE/IDDRI based on (ADEME, 2021; Couturier et al., 2016; DGE, 2024; Poux & Aubert, 2018; RAC & SFN, 2024)

This is also true for nutritional recommendations. With an average weekly consumption of 475 g of meat excluding poultry (beef, pork and other meats), TRAMe2035 aligns with recommendations from France (maximum 650 g/week), as well as from Sweden, Norway, Finland, and Estonia (500 g/week) (RAC & SFN, 2024). However, total meat consumption in the TRAMe2035 scenario—when poultry is included—exceeds the recommendations of several countries that set a combined maximum for all types of meat. These include Italy, Germany, the Netherlands, Denmark and Spain, as shown in **Figure 16**.

The hypothesis that the trend could accelerate after 2035 appears credible to us for four reasons.

The cumulative effect of changes in environments

Dietary change trajectories are likely to deepen after 2035. Indeed, shifts in food environments and practices go hand in hand with a broader reconfiguration of their components (see **Figure 3**, *Approach* section): the realignment of standards, values, infrastructure, skills and more. These transformations take time. Moreover, the changes in the food environment simulated in TRAMe are likely to be followed by further developments beyond 2035, which will make dietary shifts even easier. In this way, the changes that occur between 2023 and 2035 lay the groundwork for future developments—which are likely to accelerate in the same direction.

For example, although flexitarian behaviour (eating meat less than once a day) begins to spread in the first stage of the scenario,[32] only a minority adopt this type of diet by 2035, as the reconfiguration of practices, and all the components that underpin them, remains incomplete. Another example is the relatively modest decline in consumption among "Highly educated affluent households," which is expected to continue beyond 2035. The dispositions acquired between 2023 and 2035—such as

32 In the 12 trajectories, the term flexitarianism is used less to describe the average diet of a group than to refer to a broader horizon—a concept that is gaining ground in society and influencing the diets of certain individuals. As a reference point, we use the definition from the FranceAgriMer study (FranceAgriMer & Ifop, 2021), which combines two characteristics: a general limitation on meat consumption (including processed meat and ready meals), without a specific quantitative threshold; and a frequency of meat consumption of less than once per day.

learning new recipes and becoming accustomed to new products—provide a solid foundation for further change in the following period. In the case of older groups, the 12 years covered by TRAMe are short when set against a lifetime of socialization and established habits. However, the modest shifts observed are expected to continue and strengthen among the "new" seniors joining these groups by 2050, influenced in part by the evolving practices and roles of their children and grandchildren.

The ripple effect of social norms

Representations, meanings and social norms are central to everyday practices. Between 2035-2050, a network effect may help accelerate the ongoing trend: as more people and food environments change, the new behaviours become increasingly socially acceptable. For example, organizing a meat-free meal for family or friends becomes less unusual as vegetarianism or flexitarianism becomes more common (Eker *et al.*, 2019). In other words, within each group, a growing number of individuals begin to change their practices. As the new norm gains traction, this ripple effect can spread both within and between social groups. Once a behaviour is seen as "normal," it becomes much easier for the majority to adopt—just as daily car use has, over time, become a social norm for most of the French population.

Several dynamics help explain this ripple effect: the desire to conform to dominant customs, practicality, fear of social judgement, or the appeal of recognition and status promised by the display of a certain behaviour. As Nyborg *et al.* (2016) put it: "Hence, if a less meat-intensive diet became the norm, individuals might conform partly owing to social pressure or a wish to be environmentally friendly; but a primary motive may simply be to enjoy a pleasant and convenient shared meal." Reaching a "critical mass" can be supported by interventions that target the social groups making up the "early majority" and "active majority"—together representing 68% of the population—rather than focusing only on "early adopters" or "innovators," where virtuous practices initially take root (Nyborg *et al.*, 2016). This suggests that the first changes are likely the hardest. But the combined effects of developments between 2023 and 2035 may set off cascading dynamics in the following period, further deepening the trajectory of reduced meat consumption.

The interaction between actors of the food system

For food system actors, the transition can benefit from the interaction between "niches" (or margins) and the "regime" (or mainstream) (Geels & Schot, 2007). In other words, the promotion of alternative (or marginal) food networks, along with the provision of new public services as outlined in the TRAMe scenario, does not only affect the groups directly involved, but the whole population through indirect pressures on conventional actors.

In this sense, the adoption of ethical discourse by manufacturers or supermarkets can be interpreted as a response to changing contexts and norms (i.e. a shift in what is "good" for a brand to focus on) that is initially driven by actors at the margins (Ward *et al.*, 2007). The transition can therefore be understood not as a leap from one fixed state (A) to another (B), but as a series of "adaptive changes" (Ingram *et al.*, 2015). As these changes accumulate, they may also lead to an acceleration of system-wide transformations during the second period, from 2035 to 2050.

The role of crises

The TRAMe scenario does not incorporate crises—whether geopolitical, health-related, environmental or otherwise—into its mechanisms of change. It assumes a trajectory without major disruptions. However, the further we project into the future, the greater the likelihood of such events occurring within the food system. For instance, rising food prices and growing instability—particularly linked to climate change—are plausible in the medium to long term and could significantly affect diets, including meat consumption (Kotz *et al.*, 2024; Wheeler & von Braun, 2013). Other types of disruption are also conceivable, whether technological, labour market shifts or changes in supply chain organization. The trajectory of meat consumption is therefore unlikely to follow a smooth, linear path. It will more likely consist of fluctuations, the scale—and even direction—of which cannot be predicted).


Menu

DISCUSSION.
SCIENTIFIC, ECONOMIC AND POLITICAL PERSPECTIVES

To begin with, the main outcome of TRAMe can be highlighted as follows: an ambitious yet plausible transformation of food environments is capable of triggering a shift in dietary practices that remains compatible with a diversity of social groups and their aspirations for a "good" diet. Through a cumulative process, changes in infrastructure and product offerings, norms and meanings, skills and information will all contribute to the adoption of more sustainable food practices. The pace and underlying logic of these changes will vary across the population, depending on current dietary patterns.

These changes will not be made by decree, but emerge from the evolving material and immaterial conditions in which households live and shape their eating habits. TRAMe challenges the common argument that "changing demand is impossible"—often raised in opposition to transition advocates. It can be seen as an exercise in describing a social transformation that, rather than supporting technocratic and top-down approaches, provides tools and a framework for the organization of a real democratic debate on what is desirable and possible.

Scientific perspectives

TRAMe is an original exercise that seeks to make a scenario of changing eating habits more credible. In this sense, it responds to a long-standing difficultly in foresight studies: integrating lifestyles (Saujot *et al.*, 2020, 2022). While lifestyles are in constant flux—and there is growing scientific consensus that their evolution is essential to addressing ecological challenges—existing work does not yet provide an adequate basis for debating possible transition pathways and the conditions required to support them. TRAMe contributes to filling this gap, extending beyond the question of food alone. Its innovative character lies in the way it mobilizes the human and social sciences, particularly sociology, while also engaging with significant methodological and epistemological challenges.

TRAMe is therefore a pioneering project—with all the limitations that such a position entails—and opens up a number of avenues for future work. Four key directions can be highlighted:

- **Typologizing social groups,** with the aim of achieving coherence in both socio-demographic characteristics and dietary practices, is an ambitious task. It draws on a wide range of literature but would benefit from further methodological debate on the most appropriate ways to cluster populations, particularly given the limitations of existing datasets.
- **The writing and coding of the socio-narratives** could be replicated using the methodological framework developed here, contributing to the dissemination and recognition of this unusual format. It is important to clarify that this approach is no less scientific or more prone to bias than the equations and quantitative models typically used in foresight work (Saujot *et al.*, 2020).
- **Quantifying socio-narratives,** like the setting of key modelling parameters in conventional forecasting, is a delicate process. This could be improved through future methodological developments, such as the use of expert workshops.
- **Extending the exercise to other dimensions of sustainable food** offers a broader perspective. As outlined in the introduction, food systems face a wide range of challenges. Prospective work exploring how food environments might evolve in areas such as increased consumption of fruit and vegetables, or reduced intake of ultra-processed products would be particularly valuable.

The primarily sociological approach adopted in TRAMe is particularly well suited to exploring potential changes in eating practices. However, it is by no means the only valid perspective. It would be especially useful to develop ways of fully integrating insights from the field of economics into this outlook. In particular, such contributions would enhance the ability to simulate variations in food prices.

Economic perspectives

TRAMe2035 was conceived as the consumption-focused component of a broader foresight exercise, exploring possible developments in the French meat sector—from farm to fork—the results of which will be presented in the second half of 2025. This report does not therefore examine in detail the implications that changes in demand could have for French production, nor the conditions under which supply and demand could evolve coherently, ensuring a fair transition for both producers and consumers. However, based on the main findings of the baseline scenario for the French meat sectors, published in July 2024 (Aubert & Poux, 2024), we propose several points for reflection and identify avenues to be further explored in the final, conclusive publication of this broader study.

The baseline scenario that we proposed in 2024 emphasized commodification as the main driver of change in the sector: meat is increasingly treated as a standardized product, traded on open markets, with price competitiveness becoming a key determinant of the supply-demand balance. By 2035, this trend towards commoditization will contribute to (1) the maintenance of meat demand at a high level; (2) continued substitution

of poultry for other meats, due to poultry's competitive advantage; and (3) a loss of market position for French producers, who are less competitive in highly commoditized market segments. In the baseline scenario, these dynamics lead to a widening gap between supply and demand across all sectors, and a decline in the share of domestic consumption covered by national production. This coverage rate falls overall from 98% to 88%, with poultry decreasing from 93% to 84%, pork from 103% to 98%, and beef from 96% to 80%. These imbalances are accompanied by negative economic impacts, including job losses and reduced value creation in the regions linked to the meat sector. They also result in mixed environmental outcomes: a loss of grasslands and associated biodiversity; a reduction in domestic greenhouse gas emissions largely offset by increased imported emissions; and only marginal improvements in nutrient recycling, due to the limited spatial redistribution of livestock farming. As a result, nitrogen pressures and related pollution levels remain high.

In this context, a shift in demand following the TRAMe scenario would, from a strictly quantitative perspective, help reduce the gap between supply and demand by 2035. The coverage rate would rise to 100% for all meats combined (96% for poultry, 111% for pork and 92% for beef). However, for this development to produce positive outcomes on both economic and environmental fronts, two key conditions would need to be met—both of which warrant further analysis. The first concerns the need to support French livestock sectors in continuing the progress already made in terms of environmental sustainability. This includes managing grazing intensity, improving feed conversion ratios, and strengthening manure management practices. The nature of this support still requires more detailed consideration, but it would aim to promote the development of "better" meat production while keeping production costs under control—especially in light of the commodification dynamics outlined above.

The second condition concerns the need to support, as much as possible, a relative "decommodification" of consumption. This involves helping the sector to promote French origin, and particularly its most sustainable production models. Stakeholders in the sector have long invested in these issues and must play a leading role in advancing this approach.

Without action on these two fronts, as outlined in TRAMe, there is a significant risk that any reduction in overall meat consumption will disproportionately impact French production rather than imports, due to the existing price competitiveness gap in the standard market segment.

This alignment of supply and demand, a prerequisite for forging a meaningful link between "less" and "better", lies at the core of the overall approach pursued by IDDRI and its partners. It will be addressed more fully in the comprehensive sectoral scenarios to be published in the second half of 2025. In this context, one of the key objectives of TRAMe is to demonstrate that dietary habits can change through coordinated action on food environments, a point that is often disputed. The next step is to continue exploring the conditions required for a truly virtuous transition.

Political perspectives

The changes in the food environment described in Part 3 are central to the trajectories of change in dietary practices envisioned by TRAMe. The inventory of these changes draws on a broad review of literature and ongoing monitoring of private and public initiatives in France and across Europe (see in particular Brocard & Saujot, 2023). In the scenario, this inventory is combined with an approach that takes into account social diversity and consumption contexts. In doing so, TRAMe helps explore what a concerted strategy to influence food demand could look like, grounded in material living conditions and real-life consumption contexts. Depending on the priorities and goals defined, TRAMe makes it possible to consider how to effectively target specific places and contexts of consumption, as well as key actors within the food system, in support of a just transition in dietary practices across social groups. It offers a framework for answering key questions: who should be targeted, how, and at what pace?

Our approach is therefore intended to open up discussion on the conditions under which such measures can be selected and implemented. The set of food environment changes proposed here has been chosen because

it appears both attainable and plausible. Taken together, these changes could form the starting point for what has been described as a "comprehensive, massive and coordinated programme of actions aimed at improving our food environment", as called for in a recent report by the Ministry of Agriculture (CGAAER, 2023).

Bringing about these changes will require action across three main areas. This section briefly examines how numerous private and public initiatives have already begun to lay the groundwork, making such transformations more accessible. IDDRI and I4CE will continue to contribute to this debate by proposing actionable short-term priorities in the near future. This work will also involve a more detailed analysis of the costs and practical conditions required for implementing the proposed changes.

A farm to fork approach is needed to build competitive sectors and diversify the food supply

The challenge is to (re)open the range of possibilities by reducing the widespread and "default" exposure to high levels of meat consumption, in favour of a "less but better" approach. Achieving this requires both a shift in the rules of the game—through changes in regulation—and the creation of new economic opportunities for stakeholders in the agri-food sector. This can be done through a mix of incentives, regulation and taxation. What is at stake is the construction of a more innovative, resilient and sustainable food system—particularly within the agri-food industry, supermarkets, and collective and commercial catering.

Several factors combine to make this objective achievable. On one hand, public actors have long played a central role in shaping and guiding food systems—and they continue to do so. However, their commitments remain too limited in certain areas, such as the development of pulse sectors and plant-based alternatives. On the other hand, among key players such as agri-food industries and supermarkets, changes are already under way. These include regulatory developments (e.g. the Corporate Sustainability Due Diligence Directive—CSDD, and at the European level, the Corporate Sustainability Reporting Directive—CSRD—aimed at improving knowledge and transparency around the impacts and vulnerabilities of economic activities), as well as a range of private initiatives: the launch of new products, efforts to improve the price positioning of plant-based alternatives, and protein rebalancing targets set by some distributors. However, there is currently no **co-constructed roadmap** that matches the scale of the environmental and socio-economic challenges facing these sectors. Nor is there adequate coordination between these private actors and public authorities in France.

Changing perceptions and strengthening the economic capacities of households

A key factor in the adoption of new practices and eating behaviours is their perceived attractiveness. Here, we bring together two dimensions of this "attractiveness": accessibility and desirability. Supporting change means acting simultaneously on cognitive (information), socio-cultural (norms and representations), and economic (particularly for low-income households) environments.

Several ongoing developments are helping to make this possible. First, the informational context is evolving—driven by efforts to regulate the proliferation of food labels (e.g. the Green Claims Directive), progress on environmental labelling, and the groundwork laid by previous research and debate on marketing and advertising, which now offers a basis for more proactive policy action. Second, international examples demonstrate how coordinated campaigns can address socio-cultural dimensions (e.g. Denmark's New Nordic Diet). Third, social action is thriving, with numerous local experiments offering valuable insights. These compliment the political and technical work already carried out on proposals such as food vouchers. Finally, the future cost of food emerges as a particularly important issue. IDDRI and I4CE have previously worked on this topic[33] and will soon publish a new study exploring the risks and consequences of rising food prices, along with potential levers for action.

Within this broader context, it is important to underline that the current situation—marked by food insecurity and growing reliance on food aid—is fundamentally unjust and calls for strong policy action. One of the distinctive features of TRAMe2035 is its attention to low-income households, continuing the line of work developed by IDDRI and I4CE. This focus ensures that social hardship is not overlooked, and that no one is left behind in the transition. In this sense, TRAMe contributes to the wider debate on how to make sustainable food accessible to all.

33 See for example *https://www.iddri.org/en/publications-and-events/billet-de-blog/healthy-and-sustainable-food-all-mission-impossible*

Preparing for the future: promoting alternatives

"New" forms of food supply, preparation and consumption reflect evolving societal trends and offer opportunities to disrupt established habits. These alternatives can help trigger micro-changes by reducing the cultural, economic or practical barriers that prevent certain behaviours from taking hold. Even if marginal in quantitative terms, alternative systems and out-of-home consumption have the potential to shift how food is perceived and discussed.

Here too, many changes are already underway. On one side, collective catering is an area where regulatory reforms and practical experiments are progressing, with growing maturity and ambition.[34] On the other, a wide variety of local initiatives, driven by civil society and local authorities, are gaining ground. Increasingly, they are integrated into Local Food Projects (LFPs), which continue to expand and improve over time.

TRAMe: not less freedom, but a different organization of the food system

The 12 socio-narratives show that individual food choices are already shaped by the surrounding food environment. Food is a domain interwoven with aspirations, meanings and preferences—many of which are inherited, developed over time through social interactions, shared with others, and influenced by dominant actors in the food system as well as broader social and cultural dynamics. Today's diets are also constrained by physical and social factors that limit the fulfilment of certain aspirations—including organizational pressures within households and significant levels of food insecurity and precarity. In short, the "freedom" to define one's diet is already strongly structured and constrained by factors often beyond the individual's control. This is precisely what the concepts of food environments and food practices aim to capture. Changing these environments is therefore not about reducing consumer freedom, but rather about shifting the frame of reference and expanding the range of possibilities. In TRAMe, reduced meat consumption is not achieved through constraints on individual freedoms. On the contrary, the trajectories include changes that empower individuals—for example, by improving access to plant-based options, regulating advertising, or ensuring the economic accessibility of all food products.

34 See for example "La révolution végétarienne des restos U de Grenoble", Le Monde, 22/11/2024.

Trajectories for the debate

Major decisions must be made about the future of agriculture and food, as the collective challenges we face (ecological, health, social, etc.) are numerous and far-reaching. The TRAMe exercise forms part of a broader body of work led by a consortium around IDDRI[35] which aims to create the conditions for a constructive and well-informed debate on the future of our agricultural and food systems. TRAMe sits within a broader sequence that includes an in-depth study on the past and future dynamics of the French meat sector (Aubert & Poux, 2024), and will continue with the publication of new scenarios in 2025 exploring future developments. These trajectories are designed to provide the understanding needed to make meaningful public debate possible—and productive.

35 This consortium is made up of I4CE, IDDRI and the research consultancies BASIC, ASCa and Solagro.

APPENDIX

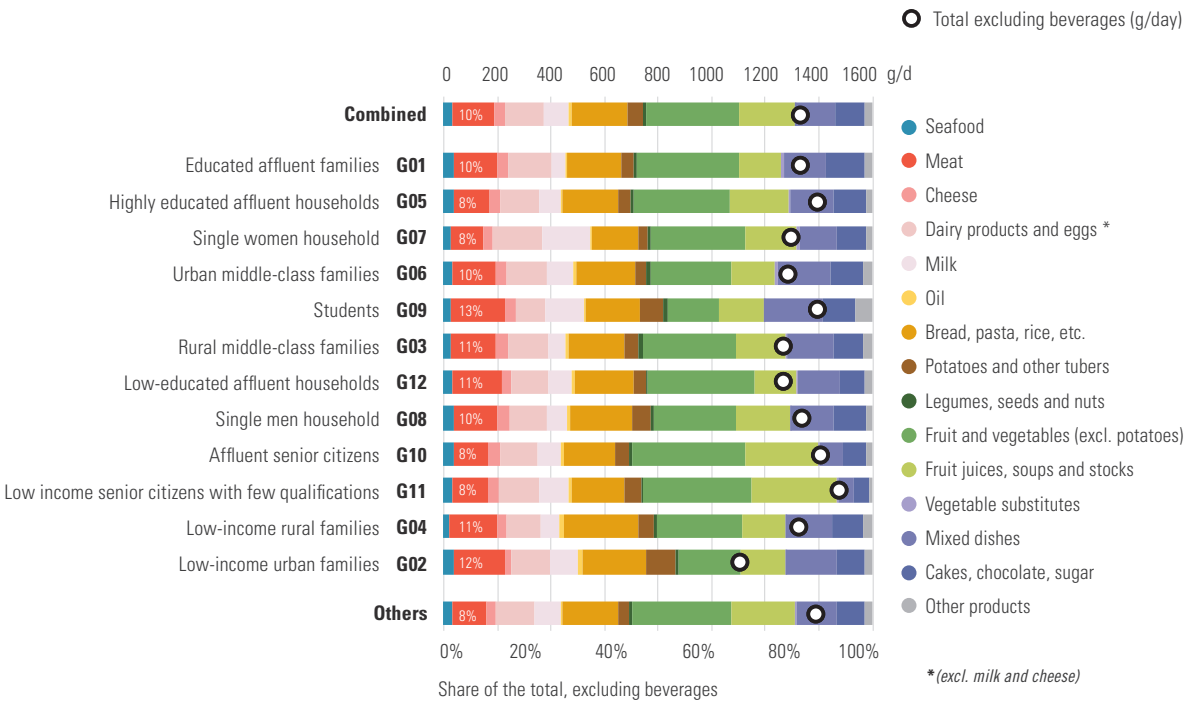
Table A1. Names and structure of groups

Household structure	location, education level, gender		Income level		
			Low	Medium	High
Families (over 78%)	Urban	Low-educated	**G02** Low-income urban familiess		
		High-educated	**G06** Urban middle-class families		**G01** Educated affluent families
	Rural	High-educated		**G03** Rural middle-class families	
		Low-educated	**G04** Low-income rural families		
All households except senior citizens		Low-educated			**G12** Low-educated affluent households
		High-educated			**G05** Highly educated affluent households
		Students	**G09** Students		
All senior households			**G11** Senior citizens on low incomes with few qualifications	**G10** Affluent senior citizens	
People living alone		Women	**G07** Single women		
		Men	**G08** Single men		

Table A2. Socio-demographic characteristics of each group

	Combined	Educated affluent families	Highly educated affluent households	Single women	Urban middle-class families	Students	Rural middle-class families	Low-educated affluent households	Single men	Affluent senior citizens	Senior citizens on low incomes with few qualifications	Low-income rural families	Low-income urban families	Other
		G01	**G05**	**G07**	**G06**	**G09**	**G03**	**G12**	**G08**	**G10**	**G11**	**G04**	**G02**	
Gender														
Women	52%	50%	50%	100%	50%	51%	50%	45%	0%	56%	63%	53%	57%	53%
Men	48%	50%	50%	0%	50%	49%	50%	55%	100%	44%	37%	47%	43%	47%
Age														
Children (under 14)	17 %	38 %	0 %	0 %	30 %	0 %	30 %	14 %	0 %	0 %	0 %	34 %	34 %	12 %
Non senior adults (15-64)	61 %	60 %	100 %	100 %	68 %	100 %	67 %	82 %	100 %	0 %	0 %	63 %	63 %	64 %
Seniors (over 65)	22 %	2 %	0 %	0 %	2 %	0 %	4 %	5 %	0 %	100 %	100 %	3 %	3 %	24 %
Level of education														
No qualifications	21 %	0 %	0 %	11 %	0 %	0 %	14 %	20 %	26 %	30 %	70 %	31 %	47 %	37 %
Baccalaureate, vocational training certificate	39 %	0 %	0 %	38 %	47 %	0 %	61 %	77 %	56 %	43 %	30 %	69 %	53 %	15 %
2 to 3 years of post-secondary education	16 %	42 %	0 %	34 %	35 %	0 %	19 %	3 %	18 %	13 %	0 %	0 %	0 %	29 %
4 years of post-secondary education and more	16 %	58 %	100 %	17 %	18 %	0 %	6 %	0 %	0 %	14 %	0 %	0 %	0 %	19 %
Students	7 %	0 %	0 %	0 %	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Standard of living (disposable income per consumption unit)														
Low (Deciles 1 to 3)	31 %	0 %	0 %	24 %	36 %	50 %	0 %	0 %	55 %	0 %	100 %	100 %	100 %	28 %
Medium (Deciles 4 to 6)	29 %	0 %	0 %	51 %	64 %	22 %	100 %	0 %	45 %	37 %	0 %	0 %	0 %	54 %
High (Deciles 7 to 10)	40 %	100 %	100 %	25 %	0 %	28 %	0 %	100 %	0 %	63 %	0 %	0 %	0 %	18 %
Size of the urban area														
Rural and small towns (fewer than 20,000 inhabitants)	38 %	33 %	17 %	24 %	2 %	32 %	100 %	50 %	25 %	39 %	42 %	100 %	0 %	35 %
Medium and large towns (more than 20,000 inhabitants)	62 %	67 %	83 %	76 %	98 %	68 %	0 %	50 %	75 %	61 %	58 %	0 %	100 %	65 %
Household composition														
Single person (one adult)	22 %	0 %	42 %	100 %	3 %	15 %	0 %	9 %	100 %	43 %	61 %	3 %	6 %	16 %
Couple (two adults)	22 %	0 %	58 %	0 %	19 %	2 %	15 %	30 %	0 %	57 %	39 %	4 %	3 %	46 %
Family (any other composition)	55 %	100 %	0 %	0 %	78 %	83 %	85 %	61 %	0 %	0 %	0 %	93 %	91 %	38 %

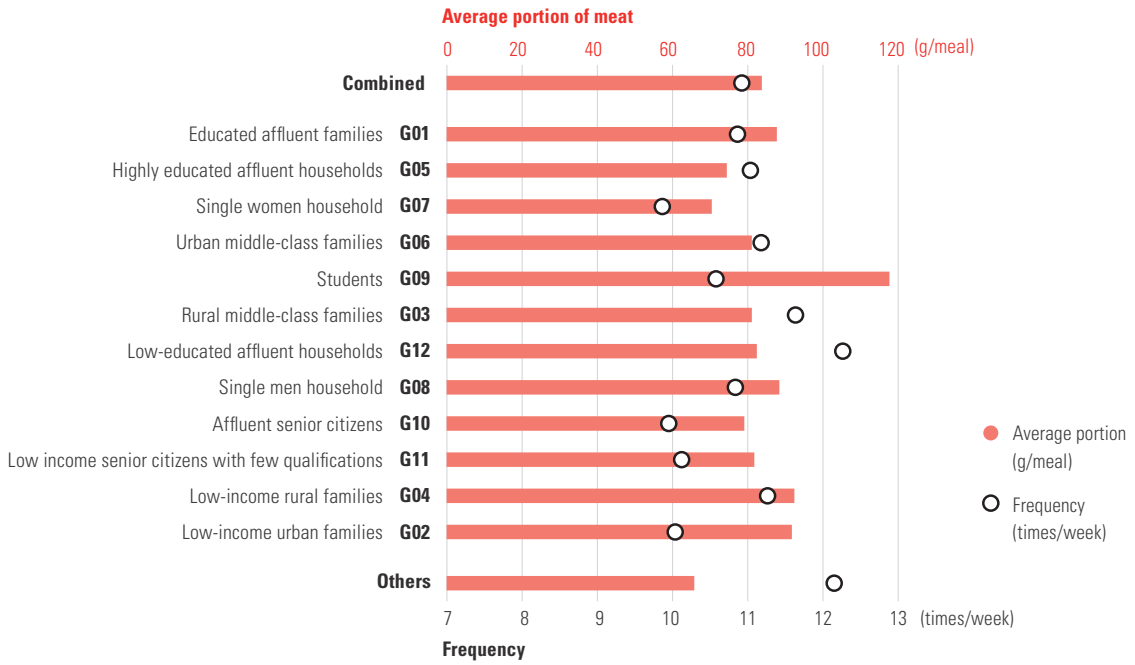
FIGURE 17. Average portions and frequency of meat consumption per group (excluding children) in 2023



Note: meat consumption (including the quantities contained in multi-ingredient foods) has been adjusted between 2015 (year of the INCA 3 survey) and 2023, but not other consumption, which is therefore probably underestimated.

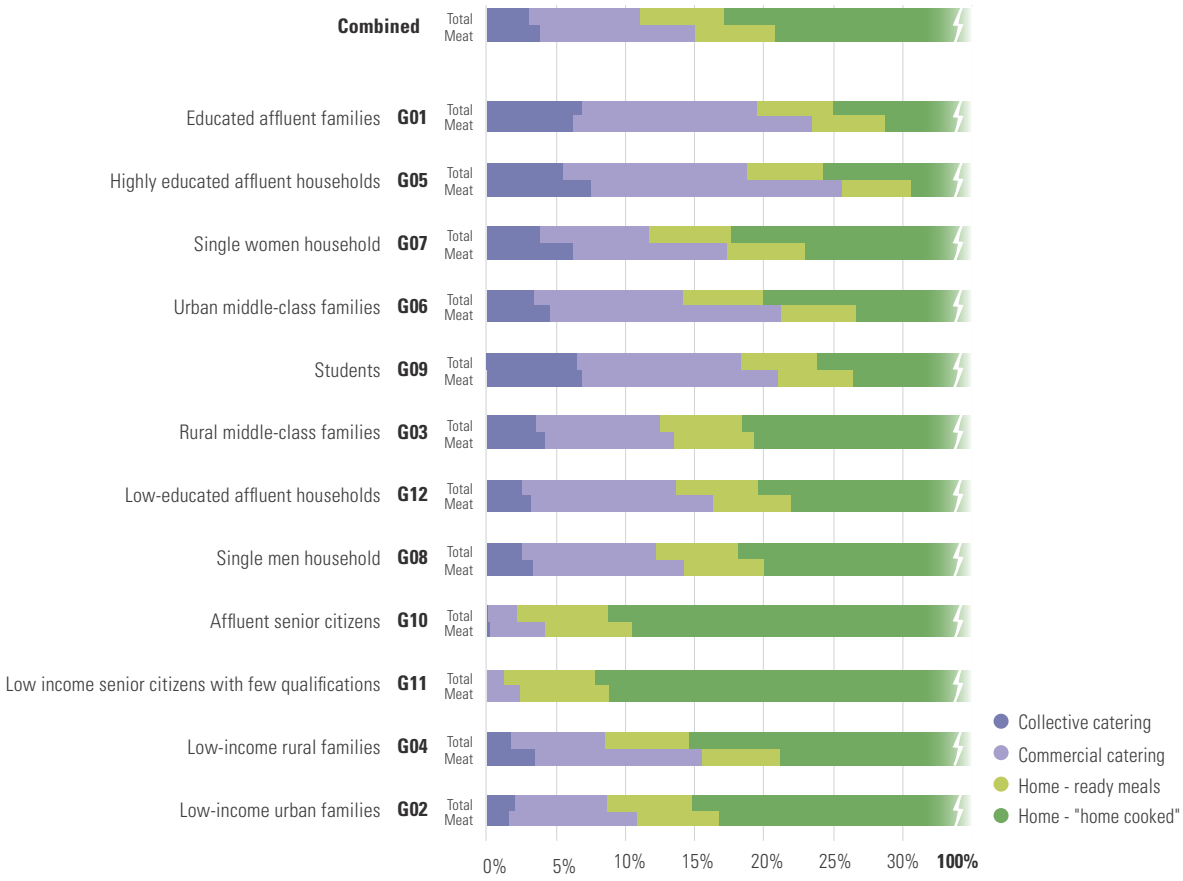
Source: INCA 3 (ANSES) data, processed by I4CE/IDDRI.

FIGURE 18. Average portions and frequency of meat consumption per group (excluding children) in 2023



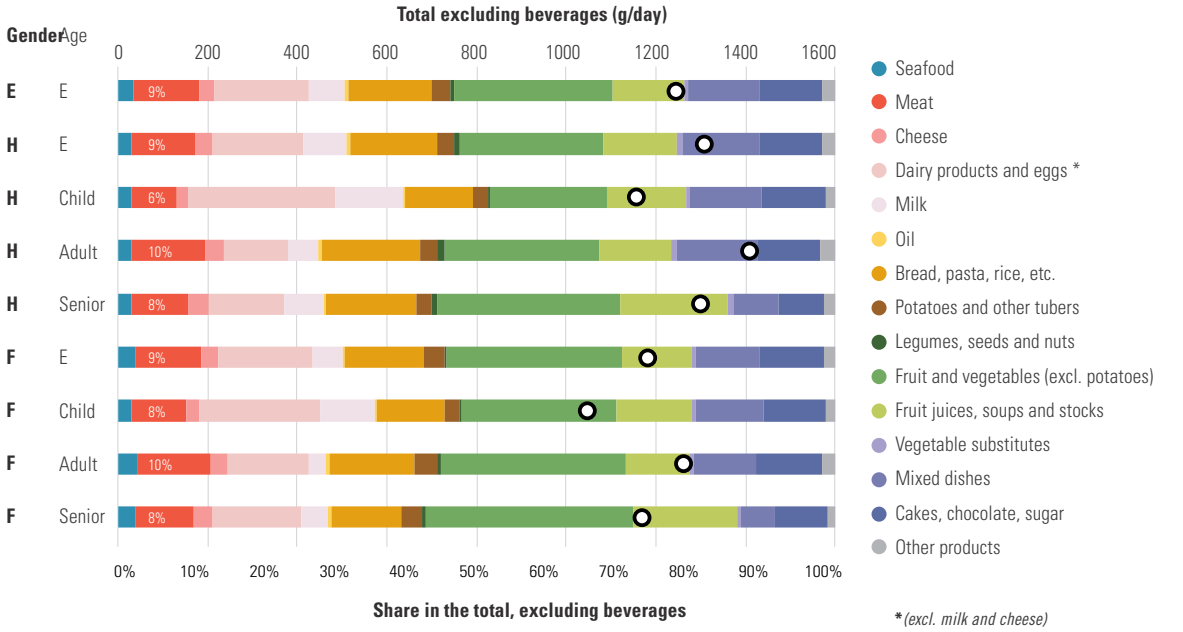
Source: INCA 3 (ANSES) data, processed by I4CE/IDDRI.

FIGURE 19. Share of each category in total food consumption (excluding beverages) and in meat consumption for certain groups (excluding children) in 2023 (in %)



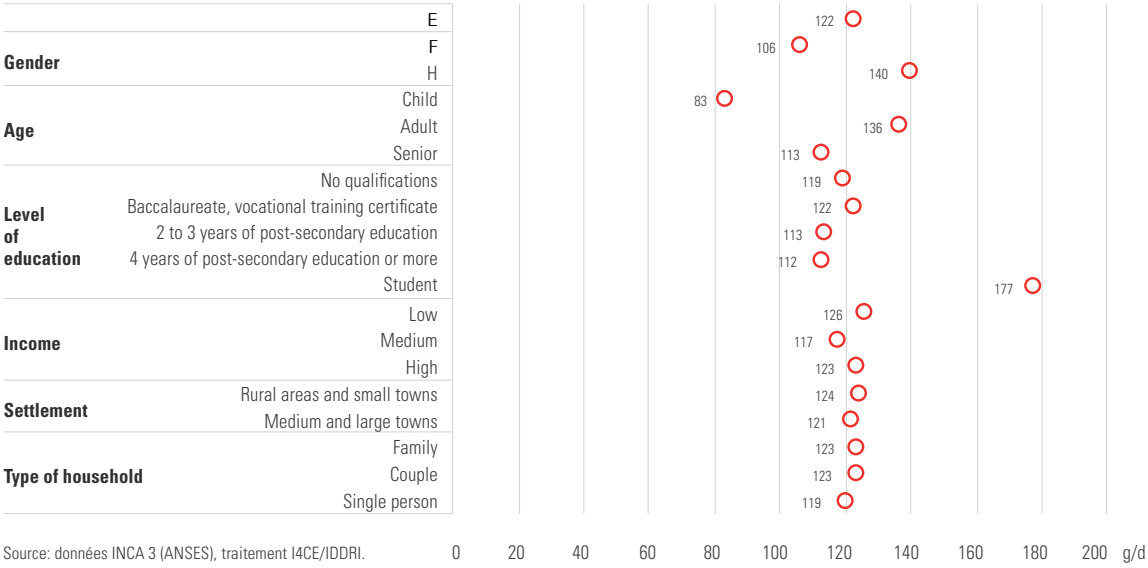
Source: données INCA 3 (ANSES), traitement I4CE/IDDRI.

FIGURE 20. Intra-group variations in the diets of typical individuals, using Group 1 as the example



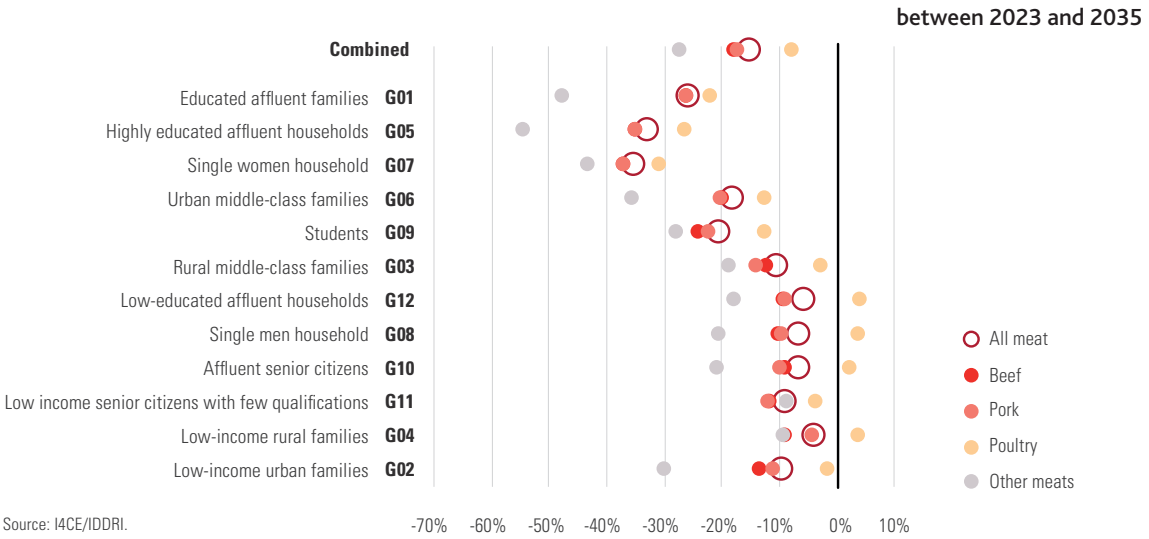
Source: données INCA 3 (ANSES), traitement I4CE/IDDRI.

FIGURE 21. Amount of meat consumed according to socio-demographic variables in 2023



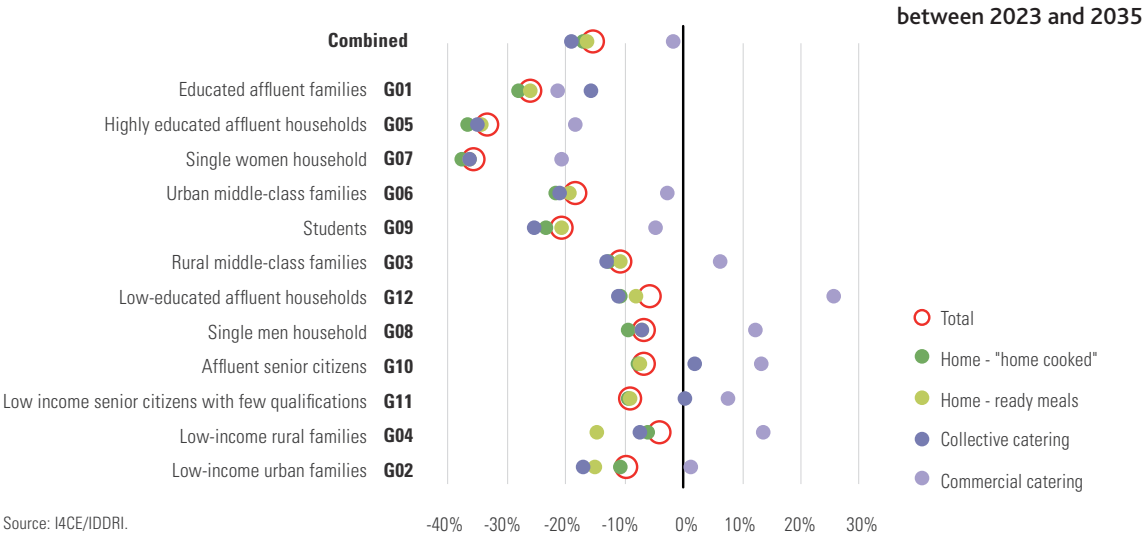
Source: données INCA 3 (ANSES), traitement I4CE/IDDRI.

FIGURE 22. Changes in total meat consumption by type of meat, according to group (excluding children)



Source: I4CE/IDDRI.

FIGURE 23. Changes in total meat consumption and by category (excluding children)



Source: I4CE/IDDRI.

Box 8.

Focus on nutritional benefits

The developments presented in the previous section inevitably have nutritional implications for individuals. **Figure 24** presents the effects of reduced meat consumption on the intake of protein, iron and fibre, based on different scenarios for compensating the decrease in meat intake:

NoCompens: no compensation for the reduction in meat consumption

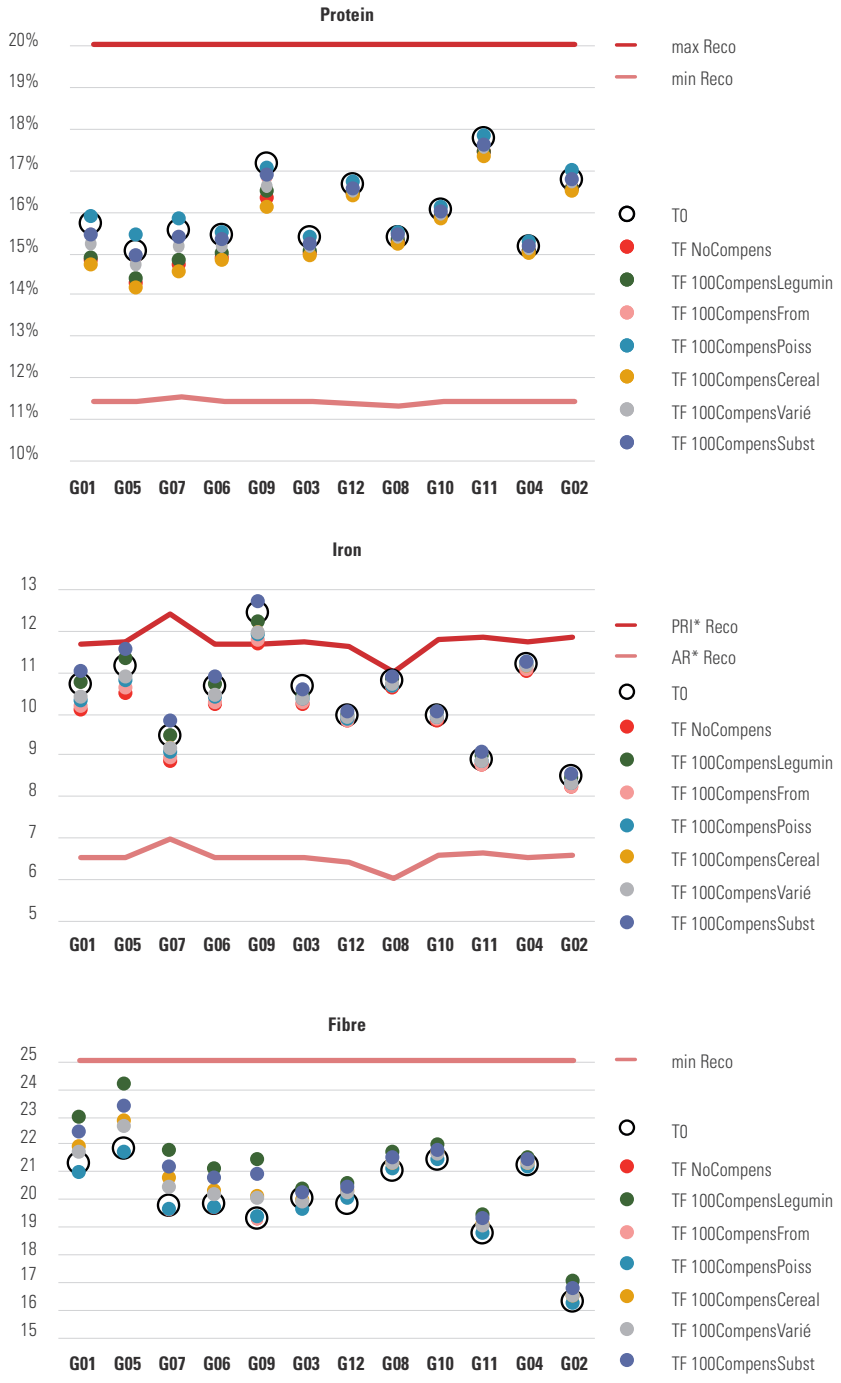
100Compens: 100% of the reduction in meat consumption is compensated by one of the following:

- _Legumi: legumes, seeds and nuts;
- _From: cheese ;
- _Poiss: seafood;
- _Cereal: cereals (pasta, bread, rice, etc.)
- _Varié: a balanced mix of the four categories above;
- _Subst :plant-based meat substitutes (tofu, seitan and products resembling steak, sausages, minced beef, etc.)

While these calculations are not sufficient for a detailed assessment of the nutritional adequacy of individual diets—since nutrient absorption depends in part on the combination of foods consumed—but they are consistent with a broad body of literature that now offers robust conclusions. Numerous studies have shown that diets higher in plant-based foods and lower in meat tend to align well with both nutritional and environmental goals (WHO, 2021; Nelson et al., 2016; Wilson et al., 2022; Mariotti and Gardner, 2020; Willett et al., 2019; Fouillet et al., 2023; Cobiac & Scarborough, 2019; Mota et al., 2021). This is increasingly reflected in updated nutritional recommendations across several countries (RAC & SFN, 2024). It is worth noting that average protein intake currently exceeds recommended levels* and could therefore decrease, and that plant-based protein remains a relatively small share of total intake—even though a shift toward more plant protein is fully compatible with nutritional requirements.**

These calculations carried out for TRAMe therefore suggest that the dietary changes studied do not raise specific concerns about protein or iron intake compared with the initial situation. On the contrary, under certain compensation scenarios (particularly those involving legumes) they may even offer benefits in terms of fibre intake. Average fibre consumption remains below recommended levels across all groups on average. It is important to analyse these nutritional issues according to the social groups, as undesirable negative effects cannot be ruled out for certain population segments (Levasseur et al., 2024).

FIGURE 24. Consequences of these changes in meat consumption for protein, iron and fibre intake, according to different options for compensating for the decline in meat consumption



*AR: Average requirement, covers on average the nutritional requirements of the population in question;
PRI: Population Reference Intake, covers in theory the requirements of almost the entire population in question.

Source: I4CE/IDDRI.

* Protein consumption is around 70 and 95 g/day respectively for non-senior women and men (Anses, 2017), compared with requirements of between 50 and 80 g/day.

** These are, of course, only indicative orders of magnitude averaged out on a national scale. Each person has specific needs based on their age group, weight, gender and physical activity. In particular, people over the age of 65 have higher protein requirements.

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NB. The development of the typology was based on around forty main references from various disciplines (typologies, sociology of consumption, food, statistics and social stratification). These sources are not listed here but are detailed in the methodological appendix (Book 3—Methodological Framework). The socio-narratives were also informed by these references, along with 130 additional sources, all of which are available in Book 2—Socio-narratives of food transition for 12 social groups.

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