

Towards a just transition of food systems

Challenges and policy levers for France

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French and European food systems need to be transformed in order to address health, environmental and social challenges.¹ The policy measures in place to foster this transition are however not ambitious enough, because its socio-economic costs are generally deemed to be too high.

In this context, IDDRI has developed an innovative methodological approach, which combines biophysical and socio-economic modelling in order: (i) to understand the structural changes at play in the transition; (ii) to assess their impact on four challenges: agricultural employment and income, employment in the agri-food sector, food, and biodiversity; and (iii) to identify the political conditions for a just transition.

Based on the indicative decarbonisation pathway for the agricultural sector laid down by the French National Low-Carbon Strategy, two different scenarios for the evolution of the French food system are developed to assess their impacts by 2030 on two key sectors: dairy cattle and field crops, which together account for 70 % of the utilised agricultural area (UAA), 52 % of value creation in agriculture and 40 % of value creation in the food industry.

¹ See in particular: EC (2020). *Farm to Fork Strategy. For a fair, healthy and environmentally-friendly food system*. Brussels, European Union, 22 p.

KEY MESSAGES

A scenario that focuses exclusively on climate issues, without questioning the concentration/specialisation processes underway at the production level, and relying mostly on supply side measures (thus without changing demand policies and markets' organisation), would have significant socio-economic impacts: an increase in the rate of farm closures and associated job losses (-9 % compared to current trend), and job losses in the agri-food sector (-12 % compared to 2015), without any substantial improvement in the quality of food or biodiversity.

A multifunctional scenario (climate, biodiversity, health, employment) could generate multiple benefits: maintaining agricultural jobs (+10 % compared to current trend) without a loss of income; increasing jobs in the agri-food sector (+8 % compared to 2015); and contributing to the restoration of agro-biodiversity and the development of a range of food products more in line with government nutritional guidelines.

The economic viability of such a scenario is based on major policy changes to accompany a simultaneous evolution of supply, demand and market organisation:

- a proactive approach to demand at the national level, in contrast to the current reluctance on the subject, mobilising a wide range of tools and making the healthiest and most sustainable choice the most obvious one for consumers;
- a convergence of visions between European Union member states, to ensure the implementation of national strategic plans in the context of the Common Agricultural Policy sets comparable objectives and production conditions for producers;
- an ambitious approach to international trade to foster and accompany the adoption of ambitious production standards.

The conclusions drawn from the analysis of the two sectors need to be confirmed by extending them to all EU agricultural sectors and countries; where agricultural income is concerned, the methodology needs to be further developed.

1 FOR A JUST TRANSITION IN FOOD SYSTEMS: EMPIRICAL ISSUES AND METHODOLOGICAL CHALLENGES

Recent prospective studies which, in Europe, focus on the outline of a sustainable food system, converge towards three transformation challenges, despite certain differences^{2,2}: a shift to more plant-based protein consumption and production: a twofold or even threefold reduction in food loss and waste, and a significant increase in the environmental performance of production models, especially through an absolute reduction in the quantity of synthetic inputs used and the re-diversification of systems, from the plot to the landscape.

Together, these changes outline food systems for Europe that are radically different from those that already exist, in which production volumes evolve significantly: a reduction for most of the major European productions (cereals, livestock), and an increase for others (legumes, market gardening, arboriculture). However, the possibility of making this transition fair in terms of jobs, income for workers in food sectors and access to food for all, including outside Europe, is widely disputed. Building on standard economic modelling, whether general equilibrium or partial equilibrium, and sometimes on supposed "common sense", many analysts predict for example that the implementation of the Farm to Fork Strategy would result in a sharp increase in world agricultural commodity prices (due to the decrease in production volumes), a loss of competitiveness in the agricultural and agri-food sectors in Europe (and therefore a loss of associated jobs), and a reduction in agricultural income.³

These analyses nevertheless have three major weaknesses: they mostly reason in terms of constant or semi-constant systems, whereas by 2030, the structure of farms and the agri-food sector will have changed; they endogenise consumer demand and price formation based on price elasticity and production functions that are difficult to establish empirically, yet food practices are rapidly evolving under the effect of major non-economic factors^{4,4} and they do not (or inadequately)

2 References include:

- Clark M.A., Domingo N.G.G., Colgan K., et al. (2020). Global food system emissions could preclude achieving the 1.5° and 2°C climate change targets. *Science*, 370, 705-708 ;
 - Karlsson J.O., Karlsson G., Lindberg M., et al. (2018). Designing a future food vision for the Nordics through a participatory modeling approach. *Agronomy for Sustainable Development*, 38 (6), 59 ;
 - Odegard I.Y.R. & van der Voet E. (2014). The future of food — Scenarios and the effect on natural resource use in agriculture in 2050. *Ecological Economics*, 97, 51-59 ;
 - Willett W., Rockström J., Loken B., et al. (2019). Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems. *The Lancet*.
- 3 In particular the USDA analysis: Beckman J., Ivanic M., Jelliffe J.L., et al. (2020). Economic and Food Security Impacts of Agricultural Input Reduction Under the European Union Green Deal's Farm to Fork and Biodiversity Strategies, Washington, Department of Agriculture, Economic Research Service, 51 p.
- 4 See for example: de Boer J. & Aiking H. (2018). Prospects for pro-environmental protein consumption in Europe: Cultural, culinary, economic and psychological factors. *Appetite*, 121, 29-40.

couple the physical equilibria required to keep the food system within planetary boundaries with the socio-economic dynamics within sectors.

In order to contribute to the ongoing debates, IDDRI and BASIC have developed an innovative analysis framework⁵ that seeks not only to resolve some of the difficulties identified, but also to reconcile the tensions between long-term challenges and short-term constraints. MoFOT, the Model of Food system Transition, thus simultaneously proposes (i) characterising the changes in production systems required at the different sectoral levels (agricultural production systems and agri-food sector), consistent with biophysical scenarios; (ii) quantifying the impacts of the changes envisaged on jobs in the agricultural and agri-food sectors, as well as on agricultural income; (iii) identifying the political conditions likely to foster a food system transition that is both socially just and environmentally sustainable.

2 TWO SCENARIOS FOR A LOW-CARBON TRANSITION OF THE FRENCH FOOD SYSTEM

The MoFOT conceptual framework was used to understand the political conditions for the effective deployment of the agricultural pathway proposed in the French National Low-Carbon Strategy (SNBC) published in 2020⁶. This agricultural adaptation of the SNBC was developed by the French Ministry of Agriculture, in consultation with the main stakeholders, between September 2017 and June 2018. It puts forward four structural changes by 2050 in order to halve agricultural greenhouse gas emissions relative to 1990 levels: an improvement in the overall efficiency of production, in terms of nitrogen inputs (especially through a significant increase in legume crops) and livestock production; changes in the product mix towards reduced production of animal proteins (especially pigs and cattle) and an increase in the area under organic agriculture; a strong development of anaerobic digestion; and an increase in the potential for carbon storage in agricultural soils, hedges and agroecological infrastructures.

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Based on this indicative biophysical pathway, two food system scenarios have been developed, both of which achieve the same decarbonisation objectives, but via pathways that differ at the socio-political level as well as in terms of the evolution of the economic strategies adopted by actors within the sectors.

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- 5 Aubert, P.-M., Gardin, B., Schiavo, M., & Alliot, C. (2021). Vers une transition juste des systèmes alimentaires. Enjeux et leviers politiques pour la France. Paris, IDDRI.
- 6 MTES (2020). Stratégie nationale bas-carbone. Paris, Ministère de la Transition écologique et solidaire.

Comparing these two scenarios helps to assess their quantitative implications (in terms of employment and income) and to identify the socio-political conditions for a just transition.

The Dual France scenario is primarily based on a policy framework in which climate issues prevail over all others, and in which the transition depends first on supply side policies, without any notable interventions on market organisations or on the demand. Such a scenario is likely to increase the polarisation of the food system at all levels—from the producer to the consumer—, between highly sustainable but poorly accessible niche markets and modes of production based on price competitiveness. This results in the continued concentration of supply to achieve efficiency gains and to reduce production costs. In terms of demand, the shift towards lower meat consumption continues, but very unevenly within the population; the consumption of highly processed foods with no direct link to their agricultural origin remains stable, or even increases.

On the contrary, the Socio-territorial Recompositions scenario takes the European Farm to Fork Strategy announcements seriously and assumes ambitious changes at all levels in modes of production and consumption: accompanied by ambitious mechanisms, demand shifts in favour of more local, seasonal, and minimally processed products, while animal protein intake continues to diminish. In terms of production, the agricultural link is encouraged within relative despecialisation processes that also help to slow the pace of concentration and to rediversify agricultural systems and landscapes. At the level of the agri-food sector, a less concentrated "Italian style" system is established, giving VSEs and SMEs growing importance in the overall economic structure of the sector.⁷ The labour intensity of production is higher here, being less standardised and more connected to agricultural production.

The impact of these two scenarios by 2030 has been assessed in detail for two key sectors in the French food system: field crops and dairy cattle, which together account for 70 % of the utilised agricultural area, 52 % of value creation in agriculture and 40 % of value creation in the food industry.

3. CONTRASTED IMPLICATIONS

The Dual France scenario, which would not affect the dominance of the price competitiveness rationale among economic actors, has significant socio-economic impacts: a 10 % reduction in agricultural jobs compared to current trend, due to continuing concentration and an increase in the capital intensity of farms; a risk of income loss for farmers in the absence of compensation, especially because of increased debt levels; and job losses in the agri-food sector reaching 12% of current jobs. The impact on the final price for consumers, which is difficult to assess accurately with the tools developed, could be limited, since the increase in

production costs at the farm level sector are offset by potential reductions at the processor. However, this possible cost stagnation comes at the price of growth in consumption of highly processed foods, whose health impacts need to be examined in more detail.

Conversely, the results of the Recompositions scenario on the two sectors studied support the plausibility of a just food system transition on the production side: agricultural jobs are up 10 % compared to the current trend, and income is maintained without any major constraints for subsidy levels or prices paid to producers; jobs in the agri-food sector increase by 7 %, while offering more diversified and less processed foods. The average cost of food could rise due to increasing labour intensity in the agri-food sector. These results need to be confirmed by extending the analysis to other major agricultural and agri-food sectors – especially meat production, which accounts for almost a third of all jobs and value in the agri-food sector, and market gardening, which has very high labour intensity and is an important issue for both public health and the trade balance. Comparing the two scenarios nevertheless helps to identify a certain number of key policy issues for the transition. It shows in particular that the social and political conditions for such a transition are manifold and, all in all, difficult to fulfil.

4. COMPLEX POLICY CHALLENGES

First, a policy change focusing mainly on the supply side – as in Dual France – does not address the challenges of employment in the transition, or does so very badly, and proves particularly inequitable in terms of consumption. Action that targets demand and market organisation thus appears to be crucial in reaching new market equilibria, reconciling a socially just and environmentally sustainable food supply with effective demand (in both domestic and export markets).

In terms of demand, the current consumption dynamics in France and Europe carry encouraging weak signals for transition issues (a reduction in the consumption of animal proteins, an increase in the share of organic food, demand for local products). However, changes in the average food basket mask disparate food practices, partly related to the increasingly insecure situation of more and more consumers, for whom any increase in the food budget (whether in euros or in time) would be inconceivable. Substantial interventions are therefore needed to accompany practice changes and to make healthy, sustainable food more accessible. Although many possible measures have been under discussion, sometimes for a number of years, their widespread deployment now comes up against strong opposition, especially in the name of "consumer freedom".

In terms of market organisation, the challenge is twofold. First, it is necessary to create more convergence between the different member states regarding how best to decarbonize the European food system. This will prove necessary to avoid increasing competitiveness gaps, given in particular the differences that already exist between member states. Although this is a complex task, the existing institutional frameworks can help

⁷ For a presentation, see: Brasili C. & Fanfani R. (2006). The Italian food industry: structure and characteristics. In: Food Industry Enterprises Editors, *The Food Industry in Europe—Erasmus Intensive Programme in Agri-Business Management with Emphasis*.

to organise such discussions. But beyond this, the challenge is also to harmonise production conditions with non-European producers or, failing that, to at least temporarily protect the European market in order to avoid "carbon leakage" or limiting the potential for development of key sectors for the transition, such as protein crops, which are currently struggling to expand due to almost unbeatable competition from American soya (from both North and South America). The ongoing discussions on the carbon border adjustment mechanism

could help to address these issues, but there is no doubt that they will prove difficult to resolve.⁸ More generally, as the leading exporter and importer of food products in the world, the European Union could and should be a source of proposals to implement ambitious standards towards more sustainable modes of production and consumption, and to advance these issues not only in the bilateral agreements it signs, but also at the level of the WTO.⁹

In terms of policies to support supply in the agricultural sector, the ongoing reform of the Common Agricultural Policy should help to align the member states' visions at the agricultural level through an accountability mechanism for the national strategic plans organised at the Council level; in order to be truly effective, it should nevertheless be accompanied by binding targets for states, an option so far rejected by the Council and the Parliament. At the food processor level, the development of environmental labelling, which is currently being tested in France, and the implementation of nutritional labelling throughout Europe should be encouraged as a follow up of the F2F: not only do they have an impact on consumer choice, but they are also a powerful means of transforming supply itself, through the explicit benchmark they provide for producers, which then helps to produce positive competition between economic operators.

⁸ Colombier M., Voituriez T. & Levai D. (2021). Europe's Carbon Border Adjustment Mechanism: the need for an improved dialogue prior to project finalization. IDDRI – Note (February 2021), 7p.

⁹ This is the sense of the opinion published by the committee of the European Parliament on International trade regarding the Farm to Fork Strategy. See INTA (2021). Opinion on a Farm to Fork Strategy for a fair, healthy and environmentally friendly food system. Brussels, Committee of the European Parliament on International Trade.

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