

How to achieve the agro-ecological transition?

Synthesis

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10 juillet 2023

The ecological transition of our agriculture remains largely to be built. To move forward in this direction, we need to combine ecological resilience, value creation for farmers and food sovereignty. It is on this basis that a new alliance can be forged, in France and in Europe, between the forces of progress in the world of politics and the world of agriculture. In practical terms, this means creating the economic conditions to redirect the calculations and choices of farmers, the agri-food industry, cooperatives, supermarkets and consumers, so as to make an agro-ecological supply policy viable. Bringing together the interests of farmers with those of society, the economy and ecology is the key to success. This is the thrust of the proposals put forward here by Pascal Canfin.

The transition to agroecology remains one of the most complicated projects of the ecological transition. Extremely polarised, it is caught in a vice between, on the one hand, a conservatism that is resistant to any change and, on the other, a naïve simplicity that denies the difficulty of this change for farmers who are, most of the time, the most constrained actors in the food value chain. This structural tension and this collective inability to find a shared path are even more striking since in other sectors of the economy, a de-facto alliance between the progressive parts of the political and economic worlds has recently made major breakthroughs possible. This is the case, for example, in mobility where the consensus on electrification is sufficiently strong to take switchover decisions in the industry and in the associated infrastructures. It is also the case in industry with the current competition between the United States, Europe and China to locate the key value chains of the zero-carbon

industry. The interest of the major economic players involved is sufficiently in line with climate objectives to engage in radical and ambitious transformations.

This alignment has yet to be built for agriculture, even though the major challenges are known and can be objectified:

1. **The renewal of generations and the maintenance of a farming industry everywhere throughout our territories.** There are fewer and fewer farmers in Europe and in France, where almost one in two farms cannot find a buyer. At the same time, sectors such as extensive cattle breeding, which are necessary for mixed farming models, are in a phase of intense decapitalization of their herds.
2. **The economic situation of farms:** the debt ratio of farms has been stable in France in recent years but remains structurally high¹, a sign of great dependence and of a reduced capacity to invest in the transition. Their average income varies between 38,000 euros per year in beef farming and 68,000 euros in wine growing, depending on the types of farm. These figures show quite large disparities in income. This is why we must always bear in mind the diversity of farmers' economic situations, which the public debate tends to underestimate.
3. **Soil quality.** Soil quality is on a downward slope at the expense of both yields - which depend on it, and of biodiversity of which soils are a reservoir. In Europe, erosion due to water run-off is causing the loss of 2.46 tonnes of soil per hectare per year (agricultural land and forests), while only 1.4 tonnes/ha/year is being formed, whereas the soil organic content is declining. The main asset of agriculture is here at risk, along with our capacity to ensure our food sovereignty.
4. **Greenhouse gas emissions.** Agriculture accounts for 15% of greenhouse gas emissions in Europe. The level has not changed since 2005, despite a strengthened European legislative framework. At the same time, despite the increase in French and European forest parks, the associated carbon sink is decreasing due to climate change and a decline in forests quality.

¹ <https://agreste.agriculture.gouv.fr/agresteweb/download/publication/publie/Pri2007/Primeur%202020-7%20Cptes%20Rica.pdf>

5. **The state of biodiversity in Europe and on agricultural lands is in free fall** as evidenced by the near disappearance of field birds all over Europe, as well as the decrease of almost 75% in 30 years in the populations of flying insects in protected areas surrounded by agricultural lands in Germany... Yet biodiversity is a key factor of farm yields through pollination or soil maintenance.
6. **The available water resource.** Water availability is structurally decreasing due to climate change. Dry periods are becoming gradually longer, preventing the traditional recharging of groundwater. Access to water and the preservation of this capital are therefore becoming key elements in maintaining agricultural activity.
7. **Caloric dependency.** Food sovereignty comes with our ability to provide sufficient and relevant calories to Europeans as part of a healthy diet. Today, Europe, like France, imports more calories than it produces. In particular, we import most of our plant proteins for both human and animal consumption. In other words, we are already in a state of dependency.
8. **The share of food in household spending has been falling over time.** It has fallen from 38% of the household budget in 1960 to only 17% in 2019, while the volume of consumption has tripled between these two dates². This trend has long been good news - sign of greater collective prosperity, but it now reflects a logic that prevents proper valorisation of agricultural production and decent incomes for farmers.

These factual data set the terms of the debate. In addition, we need to set up a framework of political goals in order to frame the public policies in this field. I see three of these forming a "golden triangle":

- More income for farmers to ensure the renewal of generations
- More agroecological transition and resilience to climate change
- More sovereignty and less dependence on agricultural models with lower economic, social and environmental standards than ours

² <https://www.economie.gouv.fr/facileco/50-ans-consommation>

To achieve these goals, we need to depolarize the debate and to build a shared path with enough stakeholders. This method is underway in many fields (industry, transportation, energy...). It must now be applied to the value chains of the food system. This necessarily involves identifying the conditions for success in implementing goals and the compromises to be made when tensions exist between objectives.

In other words, we need to build up the reference framework and the economic conditions to move from a trench war on every issue and every piece of legislation, to a siege war towards agroecology.

d'un système multilatéral désormais centré sur le climat.

1. PRODUCING MORE OR MAKING PRODUCTION MORE RESILIENT?

A. GLOBAL FOOD SECURITY IS A QUESTION OF PRICE AND SUPPLY CHAIN, AND ONLY PARTLY OF PRODUCTION

The war in Ukraine has revived the debate around food security in Europe. The disruptions on Ukrainian and Russian supply chains – on which our farmers are highly dependent (50% of sunflower seed imported to France by farmers for animal feed came from Ukraine alone), the impact of the drastic rise in energy prices in 2022 and the tensions over nitrogen fertiliser supplies have put all producers under pressure. At the same time, the increase of food prices due to inflation has reached unprecedented peaks in Europe at the end of 2022, +49% in Hungary, +31% in the Baltic States and 27% in Czech Republic, +20% in Germany, compared to +13% in France³. The first reaction of most European governments was a call for relaxation of European environmental norms, and in particular the possibility of using set-aside land to sow cereals for animal feed. This was done on the ground that, we had to increase our agricultural production capacities to ease the tension of prices and to keep exporting to countries such as Lebanon, Tunisia and Ethiopia which were almost 100% dependent on exports from these two countries for cereal consumption and bread.

This necessity to produce more in the short term - strengthened by an ambition to produce more in the long term in order to conquer or regain new markets by volumes rather than by value – clashes at first sight with the ambitions of the European agricultural transition enshrined in the “Farm to fork” strategy. This strategy sets a 50% reduction in pesticides by 2030, 25% objective of agricultural area to organic farming by 2030, the reduction of nutriment losses by 50% (therefore less recourse to nitrogen fertilisers) by 2030, etc. Indeed, how can we ensure food security and contribute to “feeding the world” if our agricultural yields decrease? To answer this question, the pillars of food security need to be properly defined: food availability (our level of production and the well-functioning supply chains), access to food (mainly the price), food use (is our food suitable for a healthy diet?), food stability (the criteria influencing the sustainability of the three previous pillars). In other words, the level of

³ <https://ec.europa.eu/eurostat/cache/website/economy/food-price-monitoring/>

production is only one of the elements to be taken into account when assessing food security, and it is clear that the two main impacts of the war in Ukraine on food security have been:

- **The disruption of supply chains:** the blockade of Black Sea harbours led to protectionist behaviours of countries such as India, which put further pressure on world prices. This problem has been solved since then by a European agreement to supply grain by rails and a UN agreement to unlock the main Ukrainian harbours. One of the real issues which has once again been revealed by this crisis is the almost total opacity of global private and public grain stocks, which fuels directly price volatility. Minimizing this opacity will help stabilize the grain markets.
- **The prices,** on the other hand, with a drastic increase in the nitrogen fertilisers and world wheat price (480 euros per ton, a record-breaking in 2022) which inevitably had an impact on consumers. An increase in agricultural production in Europe would have not compensated for the shortage of Russian and Ukrainian cereals and therefore lowered the prices.

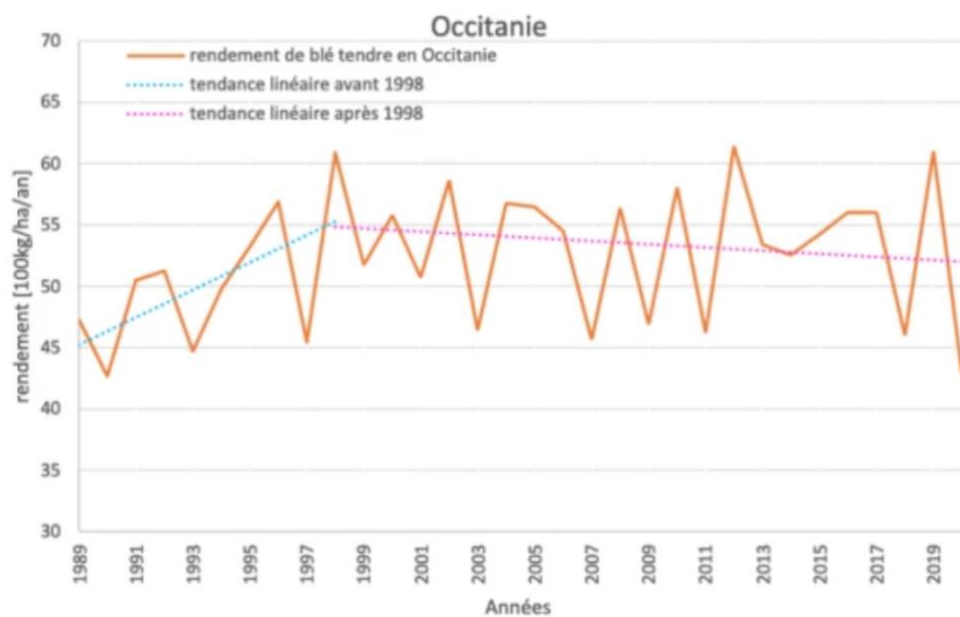
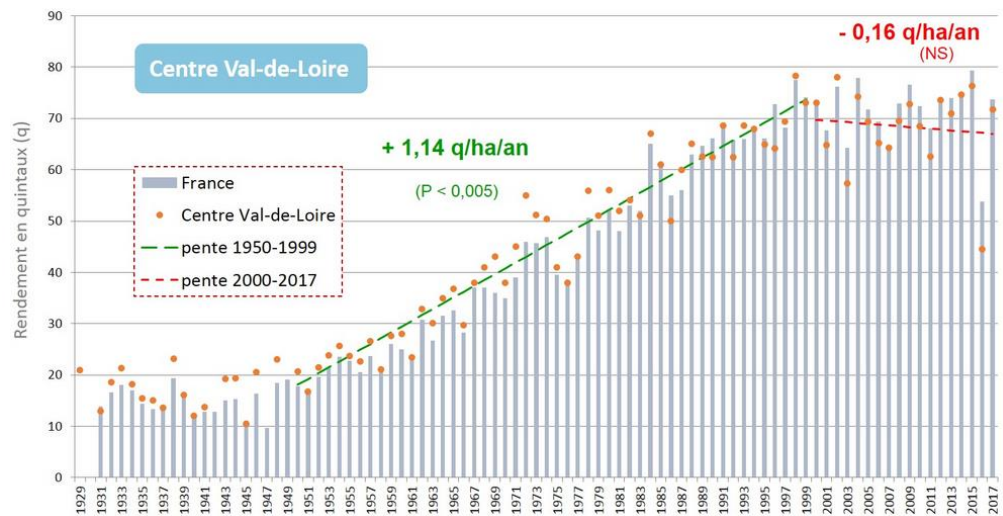
In total, even if we had decided to mitigate the volume needs of the countries most dependent upon Russian and Ukrainian grain exportations, the European agronomic limits impose on us: the additional production potential in Europe is limited. The available fallow land has low yields, not very conducive to mass cereal production. Let's go even further : without even having to change our set-aside land regulations, the United-States and Europe had the means to match the grain volume deficit of the Middle East and Sub-Saharan African countries. According to USDA (U.S. Department of Agriculture) data, the total wheat availability in April 2022 was 778 billion tonnes worldwide, for a world consumption of 791 billion tonnes and stocks of 278 billion of tonnes. The 13 billion gap between availability and consumption could be compensated for by available stocks, the European Union and the US having together 27 billion of tonnes available.

“Producing more” is therefore not the right operational framework to address the difficulties of the European agriculture brought to light by the Ukrainian war: producing more implies continued or even increased recourse to fertilisers, whose prices, closely indexed to those of gas, are still prohibitive and whose sources of supply are outside European borders (Russia for natural gas, Morocco and Tunisia for phosphate in particular). It means that we are trading one dependency for another, which is contrary to the imperatives of strategic autonomy. The

real questions are rather: Can our agriculture be resilient faced with exogenous shocks due to market volatility, dependence on the carbon economy (pesticides, fertilisers), and the immediate impacts of climate change on our productive capacity? Do we have the means to ensure our food sovereignty, and more specifically the production of food with the highest health and ecological standards available to all while sufficiently rewarding farmers? How can we contribute to strengthening global food security?

B. IS OUR AGRICULTURAL MODEL SOVEREIGN AND RESILIENT ?

We have just witnessed the low resilience of the European agricultural model in face of carbon economy shocks. But this resilience and therefore the capacity of our current model, largely based on high yields per hectare, is also threatened by the growing impact of climate change. Indeed, in several European countries, the hydric stress of summer 2022 has put a strain on the most water-intensive farms. In the Pô Valley in Italy, almost 30% of the production of this highly agricultural region was lost in 2022. In France, cereals production has fallen sharply (-10,5% compared to 2021) while corn (a plant that is particularly water-intensive during summer months and most used in animal feed) production is at its lowest in more than 30 years. Spain and Germany have also experienced harvests well below the multi-annual average. If the trend continues, all of our crops will face continuous yields reduction over the next few years as well as fluctuating yields that will disrupt both the economy of producers and the entire transformation chain. This is already the case structurally for large-scale crops in Europe, such as wheat, which have seen their yields stagnate at best, and more often decrease over the last 10 years, with one main reason: climate change..



Graphs : ORACLE observatory of regional chambers of agriculture

We thus see a potential value-destroying “scissors” effect for farmers with input costs higher and higher and yields on a downhill trend because of the impacts of climate change. This tension is not related to transition but to the status quo.

Nevertheless, the transition to an agroecological model may carry the risk of contradictory injunctions by pushing farmers towards products with lower margins while at the same time

contributing to reducing their yield and therefore putting our security and our collective food sovereignty at risk. Some of this contradiction is true. Some of it is overused by those who support the status quo. But not assuming and therefore not addressing these potential tensions undermines the credibility of the transformation path and its acceptability to farmers:

- **The imperative of food sovereignty.** It implies an agricultural production that is sufficient in volume and affordable for consumers while playing a positive role on international markets. On this last point, it is important to understand that our main agricultural exports include products with high added value and low nutritional value such as wine and sugar – while a large part of our imports concerns animal proteins produced at low cost and with low environmental criteria such as chicken, (45% of the chicken consumed in France being imported). Similarly, about two thirds of the cereals produced in France are used for animal feed, which is not enough to feed our livestock because, in the case of France, 20% is imported, mainly from Brazil and Ukraine. Thus, France and Europe are currently net importers in terms of calories and net exporters of high value-added products – which means our food sovereignty remains to be built, not defended.
- **Farmers' margin.** They are one of the main decisive factors of farming practices for farmers. They are also constantly compressed by input costs. It is difficult for a farm that is already in a tight financial situation to commit to diversifying its crops in favour of legumes when the gross margins for wheat in France for instance are 1390 euros/hectare and those for legumes such as peas are 933 euros/hectare in 2022 or 300 euros/ha for alfalfa in 2019 – a differential of 1 to nearly 5 between field crops and legumes. Nevertheless, if legumes are not economically equivalent to cereal crops, they help, if included in a rotation scheme, maintain quality soils for the following crops and preserve future yields and thus the high gross margins of the next cereal crops. In a way, they reduce the risk of lower yields of other crops and allow farmers who choose mixed farming to avoid having to buy animal feed for their livestock and to reduce their needs for mineral fertiliser.
- **Yields.** The reduction of inputs and the transition to more virtuous models, climate- and environment-wise, will necessarily have a downward impact on yields, which will differ depending on crops but certainly not as much as some European studies have recently suggested. The JRC (the European Commission's research centre) has tried to model the

impact of reduced inputs on the European production and foresees a fall of 13% to 17% by 2030. Behind this figure lies real methodological limits: the JRC assumes but does not prove a 10%/year drop in yields, while pesticides are considered as a whole, without factoring in the differences in their effectiveness and risks. Other elements such as genetic selection, trade clauses, uptake of biocontrol agent or new breeding technics (all being among the policies developed by the European commission) are not factored in. Finally, the impacts on yields of an improved biodiversity (the presence of pollinators is essential - and in short supply in Europe - for the cultivation of rapeseed, sunflower and soya for example) are not integrated. Other studies, such as the one carried out by the University of Wageningen, have been commissioned by the “grain club”, which represents the German Cereal Inter-profession and the associated food industry. The scientific soundness of the JRC study is limited while the impartiality of the others is questionable. The decline of yields is (almost) indisputable but its extent as measured in these studies is largely to be put into perspective.

- **Available agricultural land.** If the agricultural land, in particular permanent pastures, decreases in Europe in favour of forests and urbanisation, conflicts of use could be multiplied with the transition. There is indeed a need to ensure a use of space which meets several targets: our carbon sinks objectives as defined by the European legislation (despite the increase in the size of the forests, the carbon sink is decreasing because of their poor condition); our objectives for the development of organic farming which requires more space; our objectives for the development of renewable energies (second-generation biofuels to replace aircraft paraffin, agrivoltaics, etc); and our objective to produce more proteins in Europe to import less. These objectives must be put together in a coherent spatial scenario, which will either reveal potential contradictions to be addressed or show that the risk of competition in land use is not proven.

- **Tensions between the different objectives of the transition.** The agricultural transition pursues several objectives such as the reduction of CO2 emissions, nature restoration, the improvement of water quality, animal welfare, etc. In most cases, these objectives are consistent with each other. Pursing one of them brings us closer to the others. But the opposite sometimes happens. For instance, conservation agriculture avoid tillage and thus

keep CO₂ in the soil. It reduces the total number of inputs and in particular pesticides. Still, it cannot operate without glyphosate to prevent weed competition. It is essential to list these potential contradictions so they can be addressed.

What lessons can be drawn from these potential tensions? The first is that the current agricultural model is itself caught up in tensions whose first victims are farmers. It is factually false to consider that the existing model ensures our food sovereignty or economic competitiveness and jobs, in sectors which are highly competitive in terms of production costs. Similarly, it is clear that the agroecological transition improves the general resilience of our agriculture but that its translation into the economic calculation of farmers remains difficult. But this is not enough to escape from the potential contradiction of the transition. To achieve this, one element is key: we need to reduce the share of processed meat from intensive livestock farming in our production model and our diet. Indeed, more than two third of the European utilised agricultural area (UAA) and of our cereal production are only used to feed animals. Freeing up a part of this space is therefore decisive in achieving the objectives of the ecological transition such as the reduction of chemicals, the development of more extensive organic agriculture, etc. A 15% reduction in the most cereal-intensive livestock (pigs and poultry) and a 5% reduction in cattle farming would free up almost 7 million of hectares in Europe – which represents as much as all fallow land on the continent⁴. Here lies the room for manoeuvre. The reduction of intensive livestock breeding is perfectly possible without additional imports, given the maturity of technologies capable of producing milk from fermentation in laboratories and able to do it without cows. It is important to say that this statement focuses only on intensive livestock farming, where animals are massively fed by cereals and turnips of sunflowers - in addition to conventional fodder. On the contrary, the presence of cows to maintain grassland and store carbon, to provide organic fertiliser in mixed farming is a strong objective of agroecology. Less but better livestock farming and better distributed over the territories, is a key condition for a successful ecological transition of agriculture.

Individual versus collective performance

⁴ Data from the GlobAgri model (<https://agritrop.cirad.fr/588822/>)

The notion of yields needs to be clarified: individual inputs may decrease while collective yields increase thanks to the increase in UUA available for other crops, as well as nutritional yields thanks to the health benefits of a lower processed animal protein diet. The levelling off or the reduction of yields due to climate change put the current intensive agricultural model at risk without producing better collective yields. On the contrary, the transition can generate a pathway that reduces some individual yields while being more effective and resilient on a collective level.

Pesticides and risks

Finally, the topic of yields and the use of inputs, in particular pesticides, should be put in a framework that integrates health risks, which tend to be regularly minimised, both for human and animal health, and in particular for pollinators (bees, bumblebees...). Several studies link pesticides exposure to the development of prostate cancer, Parkinson's disease or some haematopoietic cancers and an increased risk of leukaemia in children. The figures for flying insect populations and pollinators are in free fall, as we have seen already. Europe has already lost almost 80% of its insect populations since the 1980s. In addition to this bleak assessment, the cocktail effects of the co-formulants used in the manufacture of pesticides are not fully analysed (or not analysed at all), when they are authorised for marketing. The EU Court of Justice indicated in 2019 that this was not in line with EU law and that it would undoubtedly lead to a legal battle in the months and years to come. There is therefore a high probability that the cumulative impact of pesticides in our bodies and in the ecosystems is greatly underestimated.

Behind the notion of “producing more” or “feeding the world” lies “ready-made” ideas which need to be deconstructed in order to address the complexity of the transition, to overcome the visible limitations of the current European agriculture model and to focus on the economic conditions for change.

2. ADDING UP CHANGES IN PRACTICES AND TECHNOLOGIES RATHER THAN OPPOSING THEM

As it is often the case with the ecological transition, part of the public debate opposes, on one hand, those who are betting everything on technologies (gene editing, robotics, digital

technology, precision farming, etc.) and those who are betting everything on changes in agroecological practices. And as it is often the case, if we want the transition to be successful, we need to combine both approaches. Let us take the example of biocontrol. These techniques make it possible to reduce the use of chemical pesticides by using pheromones or the action of other insects that will produce similar results as synthetic inputs without their harmful aspect for health and environment.

Adding up the solutions rather than opposing them makes it possible to imagine major compromises to be made with the agricultural world and its economic actors. Let's take two examples. Access to water has become - and will become every year more so – a key issue. In this context, two pitfalls must be avoided: the first one is the headlong rush of farmers to try to secure their access to water via super basins while keeping a production model based solely on irrigation to produce animal feed for export, which is incompatible with the upcoming water stress. The second pitfall is not to provide secure access to water for farmers who are changing their practices and therefore putting themselves at risk, on their yields for example, by changing crop varieties or by switching to conservation agriculture to improve water retention in their soils. Henceforth, the path of transition is to make access to the resource, such as super basins, conditional upon concrete, measurable commitments to practice changes that will then enable water to be saved eventually (for example: more water efficient crop rotation and varieties). This is the only feasible path for the basins themselves, as without changes in practices or associated systems they will be largely insufficient in a context of sustainable scarcity of resource.

A second example has to do with the new genomic technologies (New Breeding Techniques/NBT). These differ from GMOs because they do not involve transgenesis via foreign DNA. But they also differ from current techniques to the extent that they make possible the emergence of genetic features that would probably have been very difficult to express through conventional varietal selection. These NBTs are seen by some in the agricultural world as a solution for reducing the needs in water or for disseminating varieties that are more resistant to certain pests and pesticides. This was already the case with GMOs. However, the vast majority of GMOs on the market only aim to grow a plant that is resistant to the chemical pesticides supplied by the same company that sells the GMO seed. However, NBTs can indeed provide part of the solution to create varieties adapted to a recurrent water stress

or to higher temperatures. In this context, rather than rejecting technologies out of hand or accepting it unconditionally, the useful path to transition is to condition the marketing authorization on a criterion of usefulness to the transition (authorized if it allows for a significant reduction in pesticide use, not authorized if it leads to the use of more of them because the plant becomes resistant to very high exposure to pesticides, for example) and a criterion of traceability. Moreover, since these NBTs can make it easier to reduce pesticides consumption, there is a clear path to follow: the authorization under the “Green Deal” conditions of NBTs must go with the effective reduction of pesticides by at least 50% by 2030 in Europe.

The great compromise will also involve creating favourable economic conditions for an agroecological supply. While for technological solutions, the challenge is to produce them at an affordable cost for farmers, for changes in agricultural practices (systematic cultivation of legumes, significant increase in the number of rotation per farm, double cropping per plot, reintegration of mixed farming, etc.) the issue is more related to the presence of a suitable industrial apparatus (specific silo for legumes, small local slaughterhouses, hemp processing factory, etc.). This complementarity between an affordable technological offer and a coherent primary processing industrial fabric will make it possible to solidify both legs of the agroecological transition.

3. ACTING AS EUROPEANS, A CONDITION FOR MORE IMPACT AND ACCEPTABILITY

In the last few years, the agricultural transition in Europe has regularly faced differences in the regulatory requirements among European and non-European competitors. The extremely strong integration of the European agriculture in the world economy makes our trade doctrine one of the conditions for the success of the agroecological transition.

The European level to ensure impact and acceptability

The topic of pesticides has particularly drawn attention. Thus, when a neonicotinoid molecule such as thiamethoxam is banned in Europe but almost systematically benefits, in practice, from emergency exemptions among in Romania, Belgium or Italy for example, this creates unfair competition which is difficult for farmers from other Member States to accept. This proves acting as European directly has the advantage of linking efficiency⁵ – one rule for all -, impact on a continent scale and reduction of polarisation. The European level is therefore the right one to define pesticides reduction targets by Member States as well as biodiversity restoration goals, which would otherwise be considered as regulatory attacks on national agriculture.

Connecting climate, environmental and trade rules to avoid putting our agriculture at a disadvantage compared to the rest of the world

This internal doctrine is also valid externally: trade policy's modalities are part of the conditions for the success of the transition to agroecology. The trade agreements negotiated by the European Union have systematically been opposed by the agricultural world for one reason: the lack of fair competition between farmers and therefore the indirect promotion of an agriculture production system with lower social, environmental and climate standards. The example of Mercosur is particularly telling because the agreement as it stands does not provide the necessary guarantees to ensure that animals imported from Brazil are not fed with bone meal banned in Europe or that the use of antibiotics on livestock is aligned with European practices.

The first step is to make a difference directly in the trade agreements we sign. The EU-New Zealand trade agreement negotiated with Jacintha Arden's government connects for the first time the international climate rules - the binding elements of the Paris Agreement and the trade rules. It gives one signatory the possibility to use a graduated and targeted sanction regime in case of non-compliance with the climate commitments of the other. This is a significant step forward because, up until now, there has been no gradual sanction mechanism on climate and environmental issues in trade agreements signed by Europe; only existed the possibility to "blow up" the entire agreement in the event of non-compliance with

⁵ <https://agridata.ec.europa.eu/extensions/IndicatorsEnvironmental/Pesticides.html>

the commitments of the sustainable development chapters (the parts of trade agreements containing environmental and climate clauses). Of course this clause was the “nuclear option” and was never activated because it would have meant a unanimous decision by the Member States. The doctrinal breakthrough reached with the EU-New Zealand agreement is major and should infuse all new European trade agreements. It acts indeed as an efficient tool in the implementation of the Paris Agreement, which is unprecedented in trade law. However, it does not solve everything from the agricultural competition point of view: first of all, biodiversity and environmental issues are not treated at the same level as climate issues, as there was no strong international agreement on biodiversity at the time of the signature. The recent Montreal agreement at COP15 may provide an interesting legal basis, for example to insert into our trade rules the commitments on pesticide reduction or nature restoration. Secondly, because it is likely that the diversity of agricultural models will always generate differences, which will be perceived as inequalities of treatment, such as the fact that New Zealand’s vast territory allows for much more extensive livestock farming than Europe’s one does, with less impact on climate and biodiversity.

Use the single market to impose reciprocity clauses in order not to import an agriculture we do not want

Strengthening the European trade policy goes hand in hand with using the European single market as a tool for promoting our high level standards. This is what we are defending with the reciprocity clauses. They belong to the conditions for the success of the transition to agroecology because they address on one side the ask of farmers to be treated fairly in the international competition which can be sometimes unfair to them and on the other side they address the risk of “food leakage” through an increase of our imports to compensate the decrease of our food production due to the transition. In this context, Europe has already taken measures, some of them radical, which demonstrate its desire to influence globalisation. The European regulation on deforestation adopted in 2022 is a perfect example: no economic operator, European or not, can place wood, soya, coffee, cocoa, rubber, palm oil, paper or meat on the European market if they cannot prove that their products do not come from a deforested area after 2020 thanks to satellite GPS data. For beef, the origins of the feed used will have to be documented and in two years, we will review the legislation to assess whether it is also possible to require the satellite images for the feed

of the animal concerned. In other words, it will be impossible to import soya from deforested areas and increasingly difficult to import beef fed with soya from deforested areas. Besides the clear environmental and climate benefits, this obligation represents an important economic opportunity for the European protein plan deployment, which will help us produce at home what we currently import on a massive scale, and stimulate the return of plant proteins in farm rotations.

Here is another example of a recent positive evolution in European law: in January 2023 the European Commission defined two mirror clauses for two neonicotinoids banned in Europe, clothianidin and thiamethoxam, of which no residues will be tolerated on our imports (mainly soybeans and cereals from Latin America, Canada and Ukraine).

With these two measures, Europe has set a milestone that must be pushed further tomorrow. From 2024, the Commission will have to review the law against deforestation to cover more ecosystems and more products especially animal feed like maize. It will also be necessary to generalise this principle: “pesticide substance banned in Europe equals residue limits on imports lowered to the detectable minimum”. But in both cases, the European software has clearly started to change and to come closer to the legitimate expectation of farmers to stop importing agriculture that we do not want at home.

These breakthroughs must be monitored on the ground by customs. The EU regulation on deforestation has shed light on the differences in border controls among European countries for wood products, but especially on the low level of conformity check for these products with European legislation (examples: Germany controlled less than 1% of its wood imports in 2020 against the risk of deforestation, while France controlled only 0.2%)⁶. Similarly, the European Commission’s services responsible for auditing compliance with health legislation in the EU and by countries importing into the EU are made up of only 160 people. So at a time when Europe is significantly tightening up the conditions of access to its internal market through increasingly strict legislation, stewardship does not yet follow. This is why it would be useful to create a Green Deal Frontex. This mechanism would have the merit of avoiding the negative competition between the major ports of entry to Europe, which might be tempted to connect the maintenance of their competitiveness and attractiveness with a looser

⁶ EUTR: Union-wide overview for the year 2020

implementation of legislation. It would ensure greater confidence in the whole policy equation: better trade agreements, more qualified access to the internal market and an effective capacity of control.

4. PUTTING THE NORMATIVE BURDEN ON THE WHOLE VALUE CHAIN AND NOT JUST ON THE FARMER

Setting up a regulated market of carbon and of biodiversity applied to the rest of the agricultural value chain

Agricultural policies mainly regulate the production at farm level and not the whole agri-food chain. Reducing pesticides, improving animal welfare, reducing water pollution, reserving space for nature, etc. are all necessary objectives, but for the time being they only weigh on the farmer. However, farmers are most of the time the most constraint person in the value chain, caught between a bank loan to be repaid and a commercial contract (directly or via the cooperative) with a food processor industry who does not necessarily take the environmental objectives into account. It results a situation sometimes difficult to bear for farmers who do not have the means to move alone. On the contrary, there is no binding environment and climate standards for the major economic players in the value chain, from cooperatives to distributors. When a company like Danone sets itself a CO₂ reduction target or positive nature impact target, it is only on a voluntary basis. This is a strong difference from other major CO₂ emitting sectors. The main European industrial companies (11,000 sites) are covered by the European Emission Trading Scheme (EU ETS), basically a regulated carbon market, which sets an annual emissions ceiling and an annual rate of reduction of this ceiling. It is a green planning tool which has just been reformed in December 2022 to align its field with our new 2030 and 2050 climate targets. Car manufacturers are subject to newly revised CO₂ emission rules meaning they can only legally sell zero emission cars from 2035. None of this exists for the key economic players in the food value chain.

We need to put an end to this situation, invent a new tool which to regulate these actors and to put them under a CO₂ emission reduction constraint while and making a positive contribution to the restoration of nature. It could be an equivalent to the EU ETS for food processing industries, pesticide and fertiliser producers, cooperatives, large distributors for their own brand. Such a tool would have several key advantages:

- Mainstream the climate and biodiversity rules on the whole value chain instead of placing the burden mainly on farmers
- Create financial value through the existence of a mandatory carbon market, which could set the carbon price at around 70 euros per tonne (halfway between the price of the industrial market, which is around 90 euros, and the voluntary market, which is around 20-30 euros). This 50/70 threshold, according to analysts, provides an economic rationality to changes in agricultural practices, for example to store CO₂ in a meadow rather than destroying it to grow cereal crops. The definition of this credit would refer to the 'carbon removal certification scheme' currently being negotiated by the Parliament and the Council in order to have a transparent and harmonised definition, which links climate and biodiversity issues in an operational manner.
- Since most of the CO₂ emissions and biodiversity impacts of these companies come from their agricultural sourcing, the reduction targets for them can only be achieved by financing them on the farm and therefore by transferring value to the producers and not just constraint;
- Harmonise the conditions of competition with imports via a similar system to the carbon adjustment mechanism at the borders (CBAM). This mechanism was set up for industries covered by the EU ETS as part of the fit for 55 package. It could not be set up for agriculture precisely because there was no similar internal emission trading scheme. Such an 'ETS food' would change the situation and would respond to a strong demand for fairness from our farmers.

The creation of such a tool could be launched by the European Commission. It is reasonable to consider an entry into force around 2026/2027. This would be all the more logical as the companies concerned will be obliged from their 2023 financial year onwards and their 2024 reporting period to make public their transition plan aligned with the Paris Agreement over their entire value chain (scope 3). On the basis of this information, it will therefore be possible to calibrate a market (cap and trade) that aligns business's CO₂ emission reduction objectives consistently with achieving the European Union's 2030, 2040 and 2050 climate and biodiversity objectives.

Sharing the risk of agroecological transition by weighing on the economic behaviours of other key players in the agricultural chain

In most cases, the regulatory requirements for farmers do not apply to the actors in the chain who buy their products or sell them inputs. As a result, a processing company is entitled to refuse to buy from a farm that has taken the risk of transition because the former has less visibility on the exact volume of products this farm can supply, on the exact biochemical composition of the product, etc. Indeed, if a farmer decides to change a cereal seed X in favour of another one because it would be more resistant to water stress for example, it is possible that the transformation of this cereal will be more difficult, will not have the same nutritional content, the same textural properties, etc. Yet these elements belong most of the time to the 'security' of the business model of a food processing company. On the basis of the climate transformation plans required by the European Corporate Sustainability Reporting Directive (CSRD) legislation, it would therefore be appropriate to implement agricultural transformation plans for those players in the agricultural chain:

- **For buyers of agricultural products**, it would mean to demonstrate how the company sources and carries out its investments in a manner consistent with the main European environmental objectives (reduction of pesticides, restoration of nature, reduction of nitrogen losses, etc.)
- **For input sellers**, whether large industrial groups or agricultural cooperatives, it would mean to demonstrate how their business model is changing from one based on the sale of synthetic inputs to the sale of biocontrol products, precision agriculture and agronomic training.

The legislation on sustainable use of pesticides currently being negotiated at the European level could serve as a receptacle for this risk (and effort) sharing approach to agroecological transition.

5. ORGANISING THE DE-RISKING OF THE TRANSITION

All transitions involve changes. And these changes involve risk-taking and adjustments within the value chains. In order to make these changes successful, it is therefore necessary to define the path that leads from point A to point B and to organise the de-risking of the

transition. 'De-risking' comes from the finance world and refers here to all the strategies for reducing the risks of agroecological transition.

Managing this risk is all the more important in the field of agricultural transition as agricultural activity is by nature particularly exposed to risks (climatic risks, disease risks, market risks, geopolitical risks, etc.). The agricultural profession has therefore long been organised to manage these risks, through the cooperative system for example. Pesticides are also a powerful de-risking tool. They are sold as yield insurance. Going organic, reducing pesticides, means taking risks. But it also means reducing others. A mixed farming farm is much less exposed to geopolitical risks that can jeopardise the supply of animal feed. A farm which diversifies its crops is less exposed to market risk or disease than a farm with intensive monoculture or with very few different crops on it.

In order to make a success of the transition, it is therefore necessary to identify the risks, to analyse how they are covered today and to put in place new mechanisms, and adjust of existing ones such as insurance. For example and without being exhaustive, the main de-risking mechanisms to be mobilised are:

- **Technologies:** Farmers are legitimately seeking to use available technologies to limit their exposure to risks. This is part of the solution, provided that the interest and risks associated with these technologies are assessed. This is the direction of the path mentioned above with regard to the NBTs or basins, which are two de-risking tools. Digital technologies, precision technologies, drones, biocontrol, etc. are all tools that can help reduce the risks linked to water stress and the use of synthetic pesticides.
- **Diversified farming practices associated with crop rotation:** multiple crop rotations limit the economic risks for a farm by reducing the impact of a single pest on the profitability of the whole farm, while crop rotation improves soil quality and strengthens plants possible pests, thus limiting the risk of losses for the farmer.
- **Insurance:** as in all sectors of the economy, the obligation to insure beforehand makes it possible to mutualise crisis management. Insurance must continue to be adapted to take into account the growing impact of climate change.

- **“Off-take” commercial contracts:** a good way to reduce the financial and economic risk for producers is to have sold their crops before they have even been produced! In the case of some crops, which are both useful for transition and sought after by the market, such contracts make perfect sense for both parties. They provide financial security for the producer and security of supply for the buyer. These off-take contracts are to be linked to the action of local authorities which, via school canteens, can have a driving effect and secure a local agroecological supply, particularly in organic farming.
- **Financial products:** the derivatives used by arable crop sectors are tools for de-risking price volatility. They are sold as de facto insurance by financial market players. This is valid, for example, to protect against exchange rate risks for exported production or against the risk of volatile commodity prices.
- **Public aid such as the organic conversion premium:** going organic implies taking risks on yields. In the long term, the margin increased by both the reduction in input consumption and the market bonus makes it possible to compensate, or even overcompensate, for the loss of yield. However, during the first three years, before being able to sell under the organic label, the net result is negatively affected, justifying the use of public de-risking tools such as a conversion premium. This type of mechanism could be extended to other types of conversion (de-intensification of livestock farming, increased crop diversification, etc.).

Articulating these tools to reduce all the risks associated with the transition and never leaving farmers alone to face these risks is a decisive element in making change possible and acceptable. The organisation of these de-risking mechanisms does not happen spontaneously, it implies that all the actors concerned develop them and that public authorities ensure that these processes are there to accompany the higher risk taken by farmers. Finally, it is important to think in terms of a de-risking mechanisms basket – as there are many risks and very different production situations. Focusing only on the technology/finance pairing on the one hand or changes in practices and public aid on the other, will not address all the problems. A broad and pragmatic approach is therefore a key to success.

A. A TOOL : TRANSITION CONTRACTS

The ecological transition must be organised. It is planned, not in the sense that everything is written in advance somewhere at Ministries of Agriculture and all you have to do is press a magic button, but it is planned in the sense that it is thought out collectively, it is negotiated and it is contractualized in order to remove obstacles, one by one, .

In order to align the players, to create confidence, to reassure them that the State, the local authority, the banker or the buyer will indeed “play ball”, it is often necessary to formalise the commitments in transition contracts. Let us give some examples of blocking situations that can only be overcome by contractualization:

- When a farmer is heavily indebted, debt renegotiation can be done through a transitional financial contract that involves at least the farmer, his/her bank and the public authorities. The latter can guarantee part of the new risk taken over by the bank in the context of a change in practices that are beneficial to animal welfare or de-intensification.
- In a large-scale farming area, farmers want to introduce more crop diversity by devoting part of their UAA to the production of plant proteins. However, there is no silo-type infrastructure for storing leguminous crops because the cooperatives that often own the silos are not sufficiently economically interested. Without this silo, diversification is impossible. It is therefore necessary to contractually invest in a silo with these farmers whose funding can be supported by the buyers of these leguminous crops (large groups such as Bonduelle, for example) and by public authorities, because this diversification fulfils at least two public policy objectives: greater protein autonomy and restoration of biodiversity
- The deployment of agricultural renewable energy shifts value to farmers by entering a new market that was previously held entirely by large energy producers. It is an additional activity (not a substitute), which only involves contracts with energy operators.

There are many examples of blockades which need to be removed (lack of slaughterhouses, which hinders the transition to a mixed farming system, lack of contracts to structure biosourced sectors such as flax or hemp in conjunction with building operators, etc.). These

contracts and the organisation of the sectors they imply are at the heart of a planning and negotiating method without which the micro-economic complexity of the transformations to be carried out leads to a far too slow pace of implementation.

B. A CLEAR OBJECTIVE: TO CREATE VALUE IN FARMERS' ACCOUNTS

Transition is often perceived by farmers as an additional risk to their income, for example with the associated decrease in yields. However, there are good reasons to believe that more transition means more income for farmers: fewer inputs to pay for, a new market with agricultural renewable energies, the valorisation of carbon storage in grasslands and arable land, shorter circuits and therefore higher margins, ecological intensification of each hectare with mobile solar panels that become shading systems contributing to adaptation to climate change, or the development of intermediate crops to replace kerosene, feed methanisers, etc. To overcome this risk, a financial value should be assigned to each of these practices in order to clearly link risk-taking and additional remuneration. Labelling such as Label Rouge in France is a step in this direction, as it makes it possible to connect concepts such as “less but better”, animal welfare and a higher market return. If all this were not enough, then it would seem legitimate to examine the implementation of a “transitional guaranteed income” that would, for example provide the farmer in transition with an insurance policy of no loss of income for a period of 3 or 5 years.

6. THE FUTURE CAP 2028-2034

For many farmers, the CAP is a central financial instrument for farm viability, whether through direct income support or investment support. The new CAP in place for the period 2023-2027 has started to move away from a philosophy of payments based on farm size towards one based on the ecological value of practices carried out on the farm. From now on, 25% of the direct payments received by farmers will be conditional on additional environmental requirements, which for the EU represents an envelope of around 75 billion euros over the period. It should also be noted that the new CAP contains an obligation to be consistent with the Green Deal legislation for the climate and the environment, which means that the national plans drawn up by each Member State will have to be in line with the EU 50% pesticide reduction target for example, once this has been definitively adopted at the European level.

This is already the case with the new climate target in the European land use legislation (LULUCF, adopted at the end of 2022). This governance and consistency measure provides a useful reminder to avoid too many discrepancies between our agricultural and environmental objectives.

However, this CAP was proposed in 2018 by the European Commission, before the European Green Deal existed. We have only been able to modify it within limited room of manoeuvre. This does not yet allow us to respond to the conclusions of the European Court of Auditors which has repeatedly criticised the poor environmental performance of the previous CAP. Several streak of work can already be put on the table to make the next CAP, whose design will begin in 2024, an instrument of the agricultural and food transition that uses a more contractual approach (much remains to be done though on the non-environmental aspects of this public policy, such as the management of market uncertainties or the payment to active farmers):

- Put an end to area-based payments and generalise environmental and climate based payments. This is one of the most obvious weaknesses of the current system which pays the largest farms more. While we have succeeded in the current CAP negotiations to crack this logic by imposing eco-schemes, this area-based approach still remains central. Improving eco-schemes and thus moving towards a system of payments for ecosystem services with the CAP should be a priority. Some countries, such as the Netherlands, are already moving towards this method in their calculation of eco-schemes. It is also a measure of justice to redirect the financial flow of the CAP by avoiding that the largest farms, with an economic model based on volume and specialisation, capture the majority of the available funds.
- Emphasise the contractualization of change towards agroecology by rebalancing the first and second pillars. This financial rebalancing between the first and second pillars, and the reduction in the possibilities of transfers between the second to the first, would make it possible to promote the contractual logic of the second pillar, which is currently way weaker (around 80%/20%), in favour of a more systemic vision of the transition (avoid making a water payment instead of a carbon payment for example, but have a global approach to the functionality of the ecosystem). More

resources for the second pillar will also allow farmers to invest in the specific equipment necessary for farms with more rotations and more crop diversity.

- Adapting the CAP to climate change and building appropriate forecasting tools. Two actions seem relevant:
 - The massive deployment of risk management tools for the benefit of farmers in return for changes in their practices towards new ones adapted to climate change depending on the region which unfortunately could not be agreed in the current CAP.
 - Already now, assessing climate change adaptation of each Member States' agricultural strategy plans. The Commission should carry out stress tests on climate change resilience and adaptation of the 27 national strategy plans to ensure that CAP money is well spent and that the measures and projects supported under the CAP are sustainable across Europe.

7. TECHNOLOGICAL BREAKTHROUGHS FOR TRANSITION

Some breakthrough innovations that were still at the research and development stage are now approaching economic maturity. Their impact on agricultural activity and more generally on production models is potentially very significant.

Food technologies has the most disruptive impact. The precision fermentation of milk proteins or of meat can make a strong contribution to the objectives of the agroecological transition. For example, by significantly reducing the use of intensive livestock farming to mass-produce animal proteins, these technologies could contribute to animal welfare, to the development of crops useful for the transition on freed-up land, to the protection of the world's forests - which are currently under considerable threat from the sowing of crops needed for animal feed such as soy - and to the reduction of methane emissions, etc. The maturing of technologies with such consequences means that their place in the basket of solutions needed for the transition to a sustainable food system must be seriously considered. It will be necessary to measure

the real ecological gains of such measures (for example, could the savings in space not be “cancelled out” by excessive energy consumption to develop these new solutions, which would cause us to “lose out” on other objectives of the ecological transition?) and the conformity of these commodities with our health rules. Organising the democratic debate on these subjects will allow us to define if we wish to build a legal framework to allow the development of large-scale European start-ups in these fields.

Digital technology is another potential source of disruptive innovation. Drones and precision equipment can reduce the use of inputs and are part of integrated pesticide management methods. These technologies, as useful as they are, only go part of the way and must therefore be associated with changes in agricultural practices. At the same time, satellite imagery allows us to go even further by giving farmers extremely detailed knowledge, for example, of the water situation of a plot of land to the nearest square metre. These knowledge tools, provided that they are economically accessible and that farmers are trained in their use, are part of the toolbox needed for agriculture to adapt to climate change.

Finally, the creation of a green fertilizer industrial sector through the use of decarbonized hydrogen would make it possible to drastically reduce the emissions of this type of input, which currently emits a lot of greenhouse gases, while reducing our dependence on phosphate imports, whose main suppliers are Russia, Belarus and the Maghreb countries.

8. CREATING VALUE FOR QUALITY AGRICULTURAL SOILS

Land is the main investment and the first capital of a farm. However, in the face of farm expansion and of climate change risks, it is becoming increasingly difficult for a young farmer to finance his or her installation without going into heavy debts and this even though the knowledge of the potential of the soils acquired or rent is imperfect: are they rich or poor in carbon? In organic matter? Have they been “washed away” by years of blind productivism? Etc. In other words, young farmers who sets up a business not only starts out with a heavy bag of debts on their shoulders but they have no assurance that their main asset is of good quality and that will enable them to obtain decent yields.

In these conditions, it is rational to remain in the intensive system to obtain satisfactory volumes quickly and to repay one’s debts by ensuring a minimum income in the short term,

even if this means compromising long-term interests, which are closely linked to soil quality. If we want them to commit to the path of agroecological transition, we need to solve two problems: shed light on soil quality and lighten the initial debt burden linked to the land to better invest in the necessary solutions for the transition.

To solve the first problem, it would be relevant to introduce soil diagnostics (carbon content, pollution, etc.) carried out by the owner at the time of the farms transfer, on the model of energy performance diagnostics for buildings. This diagnostic would provide crucial information to the buyer on the quality of this asset, and would make it possible to segment the market to the benefit of farms with better quality land, and it would encourage owners to maintain or improve soil quality on their farms, to better defend the value of their legacy. Under these conditions, the buyer would know clearly what he is buying and could discuss the price in the light of this information and adjust his debt load accordingly.

To solve the second problem, one option is to facilitate the carrying of land and farms by public or para-public funds such as the Caisse des Dépôts in France, which would allow to develop the land lease model based on agroecological criteria. This could be conditional on an agroecological farming project and take the form of an environmental-rural lease for a minimum of 9 years with an option to buy at the end. Under these conditions, the buyer could not only be relieved of the burden of debt but could also acquire the land when the time comes, having found his model. The interest of the land carry fund will be to optimise its income – the rent – which will be correlated to the quality of the rented asset (a soil in good health certified by the diagnosis described above will be rented at a higher price than a soil in poor health) and it will increase the value of its capital by improving or preserving the quality of the soil over the duration of the farm.

Such a land carrying would contribute to the renewal of generations, by reducing the risks of over-indebtedness of newcomers. It also significantly improves their capacity to invest in the agroecological transition while preserving the farmers' ability to own their land in the long term by offering them a contractual relationship equivalent to a lease with a possible buy-back option, alleviated of the payments already made during the previous years of operation. On the other hand, this carrying allows a "control" ensuring at least the maintenance of the soil quality, which defines the value of the asset and therefore the remuneration of the associated capital.

9. ACTING ON DEMAND TO DERISK THE SALE OF AGROECOLOGICAL TRANSITION PRODUCTS

Demand is obviously one of the key elements in the agricultural transition equation. The current agricultural model has based its success on abundant accessible products at knock-down prices even if this means impoverishing producers. Without a demand adapted to offer opportunities for agroecological agriculture, it is likely that the almost immediate consequence would be a shift in our consumption of European products towards imported products manufactured under conditions that are far from our health and environmental standards.

The challenge of demand is therefore to act both on the structure of consumption and on the price we are willing to pay. Indeed, for comparable products, the transition to an agriculture that uses fewer inputs and is less regionally specialised, provides food of better sanitary quality but implies higher prices. There are many factors involved (higher labour intensity, often lower yields, smaller industrial equipment and therefore less capacity for economies of scale, etc.). However, things are more complex if we take the consumption of products in a dynamic logic: the replacement of animal proteins by a more plant-based diet reduces the price of the consumption baskets, while the replacement of a product X by a similar organic product increases the amount of the basket. The compensation of the additional costs linked to agroecological agriculture products by a modification of our diets can allow consumers to improve their diet while respecting a budgetary constraint increased by the current inflation.

Several levels of action can therefore be considered to ensure the right outlets for agroecological products:

- **Informing the consumer in order to draw attention to the climate and environmental virtuous sectors.** The examples of Label Rouge and of the Organic label in France have, until recently, shown that precise specifications, combined with a higher price giving a financial bonus to the farmer who respects them, can conquer significant market shares and pull an entire sector. Thus, Label Rouge and the Organic label represent today about 25% of French production and almost half of the whole chickens sold in France are Label Rouge – while organic production, despite the difficulties have encountered since 2022-2023, also retains a significant market share. Similarly, consumers should be better informed about the potentially ‘negative’

health aspects of consuming conventionally produced food (presence of pesticide residues, lower nutritional quality, etc.).

- **Organising demand at the ‘right price’.** Contrary to what is often argued, it is possible to get consumers to adhere not to the lowest price logic but to the right price logic. An initiative such as “C’est qui le patron?” in France offers an interesting economic model that creates a “central purchasing unit” and a brand managed by consumers on the basis of shared values (fair remuneration of farmers, sustainability, etc.). The methodology allows to single out the extra cost that members are willing to pay to buy products that respect their specifications, which in return provides an extremely clear market for producers who contract with “C’est Qui le Patron?”. The cooperative is now the leading seller of UHT milk in carton packs in France, proving that the price/consumption equation for the majority of people is not always orientated downwards. It seems obvious that any planning project for the agroecological transition must integrate such an approach in order to identify the optimal extra cost that farmers committed to the agroecological transition can afford in order to sell their production. Objectivising the extra costs also makes it possible to mobilise public authorities if prices are structurally too high.
- **Unlocking the lever of public procurement.**
 - The Egalim law in France is a good example: despite the non-binding target of 20% of organic food purchases in 2020, we are only around 10% in 2022. If the targets had been met for milk, for example, this would have made it possible to largely make up for the rproduction of French organic milk and avoid a collapse in prices as we have experienced since last year. Most of the feedbacks from the field point to a lack of organisation of the supply chain at local level and in particular a lack of logistical coherence between public canteens that are used to working with a single supplier and for which the costs of coordinating the switch to a multi-supplier system are too high.
 - The issue of price in public canteens must also be addressed in a holistic way. Reducing waste and modulating the supply of meat products can free up margins to offer more organic food without increasing overall expenditure and thus continue to offer prices that are accessible to the greatest number, as it is

the case, for example, in the 100% organic school canteens of the French town of Mouans-Sartoux.

- **Negotiations with the retailers.** Retailers organise their margins on the products they sell in order to ensure its overall profitability. It is clear that agroecological products, and in particular organic products, are subject to higher margins than conventional products (around 1.5 times higher). This situation reinforces the idea that agroecological products are reserved for the upper middle classes. At national level, it might be wise to convey retailer to a major social negotiation on food, where this subject would be discussed. Margin ceilings based on the sustainability of products could be set. This negotiation could contribute to reducing as much as possible all the additional costs that are detrimental to the accessibility of agroecological products without having any direct link with the farmers' income.

Making a success of the transition to agroecology requires tackling the logic of low-cost agricultural production and, above all, as we have seen in this paper, creating the economic conditions for reorienting the calculations and choices of farmers, the agri-food industry, cooperatives, supermarkets, input producers, consumers, etc., in order to make an agroecological supply policy viable. This ambition will make our agriculture more resilient and sovereign, putting it on a trajectory consistent with the Paris Agreement and our objectives for the protection of biodiversity, while ensuring healthy food for the benefit of consumers. It is also an industrial and human ambition that implies more workers on farms, more activities and more jobs in the transformative industries and in the agri-food sector in our territories. Bringing together the interests of farmers with those of society, economy and ecology is the key to the success of the transition to agroecology.