

A note for the Strategic Dialogue on the Future of Agriculture

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This note answers the request of prof. Strohschneider, following my presentation for the Dialogue group on 22 April 2024, to reflect on the questions the Dialogue has to answer. I make use of my presentation slides (for the slide deck in full screen, see:

<https://www.slideshare.net/slideshow/presentation-for-the-strategic-dialogue-on-the-future-of-agriculture-brussels-april-2024/267482518>)

The request: “As mentioned at lunch we would like to invite you to submit some recommendations from your point of view by 15 May on the questions of Madam President von der Leyen’s mandate for the Strategic Dialogue. If possible, these recommendations should be at the most concrete and yet comprehensive level possible. The questions of the mandate are:

1. *How can our farmers, and the rural communities they live in, be given a better perspective, including a fair standard of living?*
2. *How can agriculture be supported within the boundaries of our planet and its ecosystem?*
3. *How better use be made of the immense opportunities offered by knowledge and technological innovation?*
4. *How can a bright and thriving future for Europe's food system be promoted in a competitive world?”*

How can our farmers, and the rural communities they live in, be given a better perspective, including a fair standard of living?

Agriculture (and the European food system as a whole) is a competitive sector, net exporter and can have a bright future, given the global need for safe food, including luxuries for a richer population, and the slow down in production due to climate change and necessary environmental measures. In addition, the development of the bio-economy helps income formation in agriculture as demand for non-food products grows.

However, this potentially bright future at sector level is not mirrored in that of individual farm households. Agriculture is a market-based activity in which prices work well to steer production and innovation, but less well in remunerating farmers for their costs. Farming is characterised by strong structural change where low incomes give incentives to the next (and sometimes the current) generation to work in other sectors where income is higher. This trend will continue, as current technology already



Markets and prices

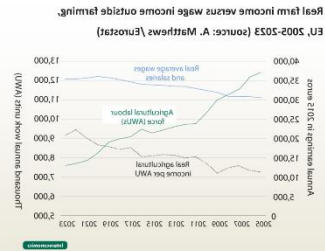
- Food security and food safety are public concerns, but best organised via markets with independent farms as actors
 - (and not state farms or totally by community supported agriculture in which consumer cooperatives hire a farmer)
- In markets prices play an important role:
 - Prices work as instruction for producers:** they are the signals for producers if more is needed (high price) or less (low price).
 - Prices shape the future** as they direct innovation: innovators try to reduce inputs with high prices: robots replace expensive labour
 - They reward producers** for their work, their costs. But only in the very long run of an equilibrium situation ($mc=ac$). In the short run (in agriculture easily meaning a decade) marginal cost and prices are lower than average cost
- This holds equally for product prices as for prices of labour, land, capital

An overwhelming majority of farmers (and food system actors) accepts a market-based approach but not always all its consequences.

requires less labour-input and demographic trends suggest strong shortages of labour in other parts of the economy. Robotisation has amply started.

Structural change

- Last 75 years: large increase in income, Implies **higher labour costs**
- Induces **innovation** to increase labour productivity:
 - Mechanisation, use of chemicals, modern stables, robotisation.
- Is a drive towards (ever) lower food prices
- Leads to a **reduction in labour input**: less farm hands, many children that leave for the city, less farmers
 - As a method to keep farm income (for those who stay) in line with those in the rest of society
- Adjustment by quitting takes decades** (tax reasons, transaction cost of moving to city, status: it is rational for farmers to stay until retirement at older age, not reinvest in last 15 years and use cashflow as income)
 - Most farmers accept this, as long as it goes rather 'natural' at a moment that the next generation votes with its feet.
 - Some regions see a much stronger decline in farming as they are outcompeted by others (business tends to concentrate e.g. in fertile regions, near ports etc.)



As structural change is slow, it is here to stay: the 'smallholder issue'

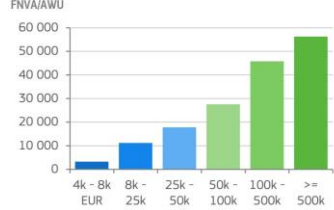
- Current number of specialised dairy farms in EU: 315,000
- Current number of cows per specialised dairy farm: 40
- Number of dairy cows currently on an average Danish farm: 230
- Number of specialised dairy farms "needed": 55,000
- Number of new entrants "needed" (2.5% per year) in equilibrium: 1,400
- 1/3 of dairy cows is on non-specialised farms, which makes the situation perhaps more problematic.
- This is probably an underestimation of things to come: optimal sized farms are already bigger than 230. And technology like milking robots is still improving, do future tractors still need a driver?
- Speeding up structural change is seldom a political option (see Mansholt, 1971)

Incomes

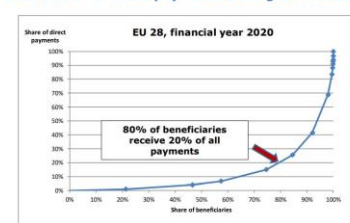
- Structurally low incomes are a signal from the market** that labour can better be employed in other sectors.
 - Without a social policy **a large percentage of farmers is for a long time below the poverty line** (sometimes with wealth from farm assets, sometimes with big bank loans). And solidarity between regions is part of the European project
 - Distribution of income is large, also among comparable farms in the same farm type.
 - Partly explained by farm size (in general larger farmers have a higher value added, although more is paid to banks) but also large differences in competences.
 - It is hard to increase farm size** and to improve economies of scale as extra land for all is not available (even the Dutch stopped making extra land).
- Importance of AKIS (agricultural knowledge and innovation system) and feed back with economic/financial data (benchmarking)

Economies of scale

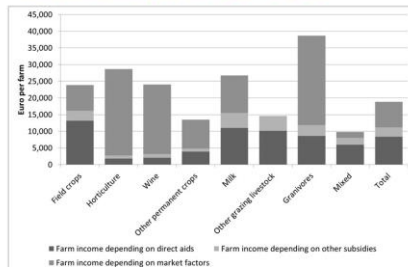
GRAPH 2 – Income levels by economic size of farms, 2021(p), EUR FNVA/AWU



Distribution of direct payments among beneficiaries



Importance of direct payments differs greatly across farm systems, 2011-2013



Source: Own compilation based on FADN data. Note that market income on 'other grazing' farms is slightly negative but the graph has been truncated at 0 for legibility purposes.

Source: A. Matthews, EU CAP Reform blog, based on FADN

Source: DG Agri

The strong structural change that however is slow for the individual farm, as most farmers have good reasons to stay in farming and have the next generation leave, as well as the cost advantage of larger farmers that use the latest technologies (economies of scale) means that a lot of smaller and medium sized farms have persistent low incomes. At a level that is seen (at least by those effected) as being unfair.

Agricultural policy has long acknowledged this and tried to slow down the structural change and improve the income situation. Paying higher prices in the 1960s and 1970s worked too well and led to overproduction that had to be sold with large subsidies on the world market to the chagrin of the trade partners. It slowed down structural change, but did not solve the income problem. The direct

payments, installed in the 1990s were a logical step that helped to stabilize incomes and slowed down structural change (that is much slower in e.g. dairy farming or arable farming than in horticulture that receives less support). However, it seems to have run its course. Payments have translated into land prices and some farms have been taken over by a next generation that have, given their size, an income problem if the direct payments are not corrected for inflation (as is the case).

CAP History and new challenges

- Protective high prices (to create level playing field in EU), food importer
 - Surplus in butter mountains and wine lakes, food exporter
 - World market prices, (tradable) quota. Direct payments as compensation
 - **Has become less effective: direct payments are now reflected in higher land prices and suboptimal structure** (if is possible for some smaller farms to have a successor due to the direct payments in income).
 - Decentralisation with national plans in current period to adjust to local ecological challenges
- New Challenges**
- Need for climate adaptation, - mitigation and saving biodiversity
 - Sourcing problems for industry (climate risk) ? Effects bio-economy ?
 - Preparing for Ukraine, perhaps not in 2027 but are we ready in 2032 ?
 - Demographics: Labour shortages in the rest of the economy

In addition, there is the fact that as payments are fully linked to land, the distribution is very uneven: 20% of the farms takes up 80% of the payments. It seems unfair to many that these farmers receive a multitude of the regional minimum wage at the expense of the tax payer. Of course, this can only be changed gradually over e.g. a 5- or 10-years period but it is clear that farmers, and the rural communities they live in, can be given a better perspective, including a fair standard of living by much better targeting of this income component of the direct payments and capping them at the regional minimum wage for the farmer/entrepreneur. The budget saved in that way could be used for small farms or eco-schemes. As the workers on these farms are already protected in their income by national minimum wage regulations, their presence should not play a role in the level of the income payment per farm. An additional argument for such an approach in the CAP is the geopolitical situation that might bring Ukraine into the EU in a foreseeable future.

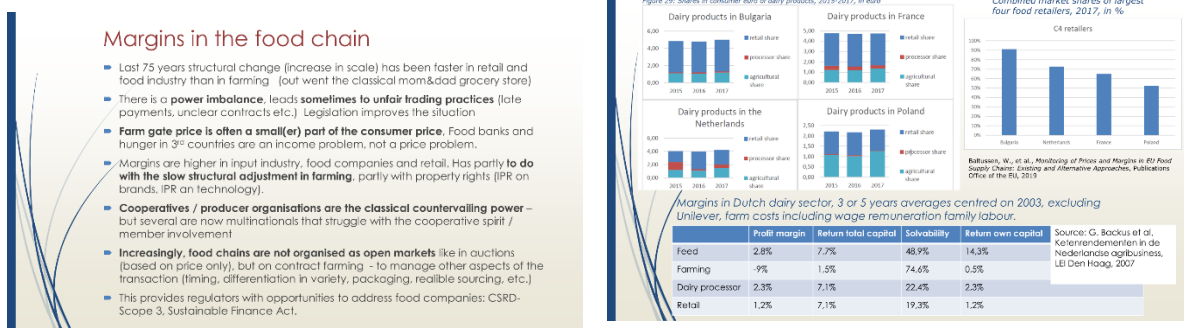
There is in my personal opinion not a need to add environmental or other obligations (conditionality) to such a basic payment up to the level of the minimum wage. Of course, also the smaller farmers have to respect environmental legislation, but devaluing the payment with extra costs or punishing them strongly with a loss of this important income element in case of not fully respecting conditionality. Skipping conditionality for this first layer of payments would also reduce administrative burdens strongly. Some might wonder if there is European added value in such a payment – should this not be national social policy? Given the fact that these small farmers are the losers of the strong innovation in the food system of which other farmers, landowners and consumers benefit, often in other regions, this is in my opinion defensible.

In addition to an income support policy, farmers should be supported in developing their skills (Agricultural Knowledge and Innovation System) and adopting multifunctional activities, be it on farm or part-time. In many regions, especially close to cities, activities in short supply chains, tourism, child- and health care, forestry, nature management, public works etc. can be a solution to the income problem and contribute to the improvement of the rural community. Farmers (small and larger) could also be rewarded with long-term contracts for positive externalities of farming like landscape management, carbon sequestration, water storage in times of flooding etc. The current eco[schemes (CAP Pillar-1) and agri-environmental measures (CAP Pillar 2) are the relevant policy instruments. In member states where targeting and capping has a large influence, a bigger budget can be made available. It might be discussed if current 1-year or 5-year contracts are optimal. Longer term conservation contracts might be a better basis to adapt a farm strategy and invest. Such a legal contract also reduces the fear of some farmers in a government that is - in their eyes - hard to trust and moves it from a subsidy to a normal contract for providing services to a government agency.

Some suggest that higher food prices paid by retailers and food industry (including farmers' cooperatives) is desirable to solve the income problem that is inherent in modern farming. Given the

experience with high fixed government prices in the 1960s and 1970s that will quickly lead to oversupply in the market as it incentivises (large) farms to produce more. If these companies are forced to differentiate their price between small and bigger farms, this measure would mean that food industry and cooperatives would be forced to transfer money from larger farmers to smaller ones. It seems more logic to do this with the direct payments as advocated above. If retailers would be forced to demand higher prices from consumers, it seems more logic to use the VAT-rate to fund the scheme advocated above if the capping would not provide enough financial resources.

The idea to force retailers to pay more seems to be based on the idea that there is an unfair distribution of the margin in the food chain, or even collusion of food processors or retailers. Although there is a power imbalance (not implying misuse) and locally farms can be confronted with a limited number of buyers the arguments for this idea are very thin at best. There is strong competition between retailers, with low margins. In some regions that low that the operation of local supermarkets is left to independent shipowners that have to take the risks and rent the formula from a multinational.



In conclusion: to solve the income problem it first of all has to be recognised that it is inherent in the market economy in agriculture and food and that this implies a dual structure that cannot be solved in the market itself: those who can survive in that market economy (and hardly need support) and those that can for reasons of land structure or individual competences cannot and need our support, either in leaving the sector or in receiving a minimum income. That conclusion should lead to better targeting with capping.

How can agriculture be supported within the boundaries of our planet and its ecosystem?

Agriculture, like most industries has negative externalities in the form of emissions (pollution), high use of scarce water, low standards for animal welfare or the working conditions for immigrant labour, or risky use of too much antibiotics. Although many farmers have considerably reduced their externalities in the last decades, more has to be done given climate change and biodiversity loss. This is sometimes also in the interest of

Externalities are not a part of prices and do not influence the decision making by actors


- Externalities are **inherent in (open air) farming**
- Technical innovation and benchmarking has led to **large reduction** in pollution from farming
- Pollution is also an effect of concentration** in certain regions and incentive to produce very intensively as extra land is not available With immigrant labour. And just in line with animal welfare legislation to manage costs.
- Farm costs do not show the True Cost, hence there is no True Price
- New challenges due to climate adaptation, - mitigation, biodiversity
- Product-differentiation (labelling and branding) contributes but most consumers are price-sensitive.
- Regulation** is often preferred in environmental policy (as in food safety) but **speeds up structural change**: investments needed and agricultural markets incorporate slowly (low elasticities).

farmers that face to adapt to climate change and e.g. lower availability of water or effects of soil compaction.

In many cases low-hanging fruit seems to have been picked. In that stage improving management by benchmarking, extension and other means worked well. Subsidies (e.g. on investments) also helped. Such measures should be continued but will not be enough.

Policy makers now seems to be fond of environmental regulation. However, it is questionable if they have all the information on local soil, water and weather conditions to take production decisions at a central level that farmers understand and comply with. On several issues actual practices and performance are hard to monitor (e.g. use of pesticides and antibiotics), certainly not by satellite. And the most problematic aspect of this approach is that regulation without payment by the government or by the food industry leads to speeding up structural change in farming – something that politicians generally want to prevent. This is due to the very long reaction time for food supply to decrease and prompt higher prices in reaction to the higher cost of the regulation. The application of the polluter-pay principle in agriculture is problematic. Farming differs in this aspect from an industrial sector.

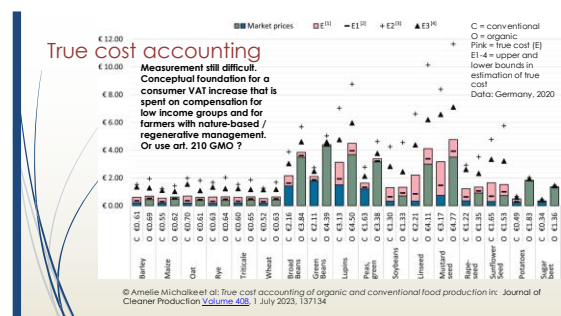
Farming vs. Cars: regulation works differently



- Regulation (e.g. for water directive) increases costs farmers
- In case of extensification: extra land is expensive due to suboptimal farm size, only best 10% can buy
- Farmers do not send invoices: no effects in prices, due to supply and demand.
- Farmers take the cost as reduced profit / income
- Prices rise (incorporate cost of regulation) once some production is reduced and farmers have quit (and others increased size)
- Such structural change takes a long time, the decision to leave is linked to the next generation
- Farmers are price-takers that focus on cost reduction and de-risking
- Regulation (e.g. safety belts, more efficient motor) increases costs car factory. Announced years ahead.
- All factories increase their listed price
- They sell a bit less cars (and a temporary oversupply depresses prices and profits)
- They reduce cost by employing less personnel, perhaps some mergers
- The market has absorbed the regulation in rather short time (e.g. 1 year).

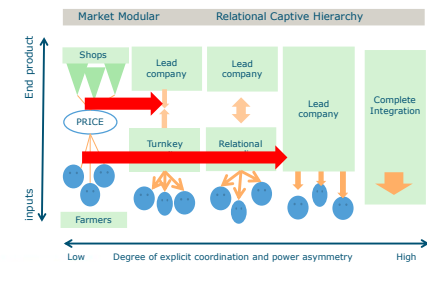
The free use of environmental resources that are essentially scarce (and other externalities) implies that cost prices of farmers do not show the true cost. And that consumers (and other actors in the food system) do not pay a true price. For the moment it is hard to force those true prices on consumers. Not because some of them are poor and even dependent on a food bank. That is essentially an income problem (they are poor, their minimum wage or social security level is too low)

not a price problem. The point is that markets work on supply and demand and that at the moment the methodology for true cost accounting is in its infancy. But the line of thinking is useful. It underpins a levy (VAT-increase) at consumer level to fund the CAP or a similar policy to pay for the either the cost of decreasing externalities or compensating them (e.g. by creating nature reserves). An alternative is to do this per product or sector and allow food producers (e.g. the dairy companies or the French fries processors in a branch organisation) to set up a scheme that has a levy per kg of product sold to the retail and uses this income for sustainability actions at farm level. Such schemes should induce competition between farms on taking the most cost-effective actions and should be monitored by the competition authority to prevent misuse.



Such a solution would build upon a current trend that food processors and retailers have more complex relationships with farmers than the old-style market or auction where price and volume are the only aspects of a transaction. With private schemes for food safety, specific sustainability labels for marketing differentiated products to certain consumer segments or just business-to-business contracts that rule packaging, in time delivery or secure future sourcing in an era of climate change, actors in the food chain are more involved in farming than before. This also makes them more responsible. Regulations as CSRD-scope 3 force food processors and retailers to take more responsibility. Such result-based schemes seem to work better than government regulation. But some competition authorities are alert for greenwashing and these schemes can attract the best farms with high volumes, low cost prices and relatively low externalities, speeding up the structural change problem and leave that with the government. And in the end, it depends on the willingness to pay with the consumer, often low and only related to certain aspects as animal welfare, especially if he is given the choice in he supermarket between a conventional product and a branded one.

Chain organisation changes (©Gereffi et al., 2005)



The private sustainability schemes raise an important issue: how can government schemes, like the Eco-schemes (CAP Pillar 1) and the agri-environmental contracts (CAP pillar 2) be aligned with the result-based approach of such industry schemes. – as a farmer can only take one decision on e.g. spraying practices, and has to respect several incentive systems. And reporting to both these public and private schemes with different indicators in different websites and audits is an administrative burden.



The solution is in a joint public-private system of defining, measuring and monitoring sustainability. By defining sustainability metrics (key performance indicators -KPI) that can be monitored at the level of the individual farm and added to the existing ones for financial and economic management, the farmer can make sustainability a part of his management, manage the trade offs between financial and environmental performance and report to food chain partners as well as government agencies. The organic sector already uses such a system in which farmers have to provide certain data (especially mass balances per product), get certified and get benefits from trade partners (that pay more for organic products than conventional ones) and get public support (e.g. higher eco-scheme payments).

Farming is a market-based activity and problems will only be solved if the problem of externalities is brought into the economic system. In theory this can be done with taxes, but they have the same problem as regulation: it takes a very long time until some production is moved to more efficient farmers and has a lower cost price, or is reduced and farm product prices react upwards. Especially if

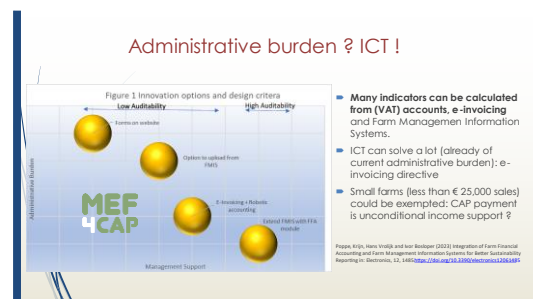
SUGGESTIONS FOR RESULT-BASED CAP

- Farming is market based. **Problems are only solved if you bring them in the economic system.**
- Market can be created for carbon (positive and negative), emission rights to manage externalities, ETS-like.
- The same for **emission rights** of nitrate, phosphate or ammonia emission in regions where such pollution has to be cut. It induces innovation and solves the coordination process that some farmers can cheaper adapt than others. Same for water (use) rights.
- **Result-based Key Performance Indicators** can be used (10 KPI like pesticide use/ha., mineral balances, water use/ha, CO2-eq. emissions/kg etc) in Farm Sustainability Data Network and in AKIS and eco-schemes in stead of direct instructions to farmers or emission rights.
- **Certification and auditing** (like in organics) based on digitalisation of invoices can help to adapt to local circumstances and reduce administrative burdens.

there are no easy technical solutions on which the tax receipts could be spend as investment subsidies. Tradeable emission rights (that work as in the past the milk and sugar quota) are easier to apply as the government can directly set the desired emission level and farmers that do not increase their size are often not affected (and are given an intangible asset) where structural change is slowed as farm enlargement is more expensive now that emission rights have to be bought.

For some externalities emission rights are difficult, for others there is no political will. Then a result-based approach with KPI is a good option. It essentially starts with an obligation to monitor and report sustainability at the individual farm, like larger companies have to do in CSRD-scope3. Sustainability can be defined with about 10 KPI: pesticide use/ha, mineral balances N and P per ha, water use per kg, CO2-eq. emissions/kg, ammonia emission per ha, antibiotics use per animal, level of animal welfare, level of labour standards; mass balances for organic farms). These indicators have been defined in earlier EU research programs and are currently to be included in the Farm Sustainability Data Network (FSDN) that DG Agri develops out of the Farm Accountancy Data Network. In principle they can be available in 2026 for the next CAP period.

From early 2027 on farms could be invited to calculate these indicators on their own farm and use them to report to food processors and retailers for CSRD-scope3, for private sustainability schemes and to report to the government for eco-schemes. The administrative burden is manageable. Most of these indicators can be calculated by farm management software or farm financial software (used for VAT reporting) as most of the underlying data are specified on invoices (the exceptions are the level of animal welfare, the level of labour standards and use of groundwater). Farmers hardly send invoices themselves, that is done by the food processors and traders, and in line with the EU's E-invoice directive they could send the invoices in a digital-readable format to farmers and their software platforms. With robotic accounting the indicators can be calculated. The first win is that the cost of current administration (VAT, nutrient and pesticide reporting, reporting to trade partners and banks) declines. (for details, see: <http://doi.org/10.1111/1746-692X.12427>)



The data for an individual farm could be checked by the certification methodology as currently in use for organic farms (and their private top-up standards like organic-dynamic) and some private sustainability schemes. That can be extended to all farms (> € 25,000, - sales).

The certification process can include all other (national) public farm regulation (like the French Duerp on risks of labour circumstances etc.) and certification for private food-safety (e.g. GlobalGap) and sustainability schemes in a one-stop audit.

This reduces the current administrative burden on farms and makes the certification processes more efficient. It

reduces the feeling of some farmers that they are constantly checked. And it prevents a potential effect of CSRD-Scope3 that farmers will be overloaded with paperwork and questionnaires from their trade partners.

Certification as policy instrument

- Certification: To redirect innovation, classification of farms and food into more or less sustainable types of food.
- Certification of all farms, based on digitization of paperwork (lowers current administrative burden)
- Certification can take into account regional environmental issues
- Reward sustainable farms: label (niche) products, public procurement, chain actors report in ESG report, award eco-schemes CAP, support in land market.
- Reward sustainable farms with a blending obligation
- Prices will reflect true costs of production
- Such a system should also include importers and exporters to guarantee a level playing field with third countries and to prevent adverse effects.

EEAC Advise on Sustainable Food Systems:
<https://eeac.eu/wp-content/uploads/2022/10/Towards-a-sustainable-food-system--An-EEAC-Network-Position-Paper-PV.pdf>

Such a system could be simplified by making it voluntary for farmers, as long as food processors, retailers and the public authorities agree that this is the basis to measure sustainability at farm level for CSRD-scope3, general sustainability schemes for food products and for public schemes. (schemes that only promise only high levels of e.g. animal welfare not necessarily have to be built upon the scheme and also guarantee high levels of e.g. CO2 reduction, but it would be attractive if they use the same indicator for animal welfare).

For public schemes this would be comparable to the CAP interest subsidy payments in the 1970s: the farms that applied had to prove that they kept accounts on their farm as indicator of having professional management that was worth the public support. In a similar way this KPI-based system can be used for eco-schemes.

It can be attractive to find a methodology to convert the scores of a farm on the 10 KPI into one eco-score for the farm. This would work as follows: in the National Strategic Plans 2027-2032 national/regional governments define the relevant KPIs for Eco-scores A/B/C/D/E in a region (region based on soil type, water catchment area or administrative boundaries) based on the 10 KPI defined in the EU (see above) – by taking out indicators that are not relevant: water scarcity is not everywhere an issue. And other KPIs can be added if necessary. Farms get automatically score E and the government makes clear for each KPI which level has to be attained to reach a higher score (D,C,B, A) and how the scores on KPI are translated in one eco-score for the farm. In this algorithm the government should then set thresholds in such away that roughly 20% of the farms end up in each class A-E. The FSDN provides information to simulate this estimation (like the FADN in the 1970s supported policy decisions in price setting with the so-called “objective method”). At a later stage, regions could be widened to in the end one Common Market to allow for a higher percentage score A farms in one region and less in another.

KPI and certification in CAP-post 2027

- Start measuring and reporting ecological sustainability at farm level (as we did in the past with economic sustainability)
- Definition of 10 KPI between now and 2027 (in FSDN ?)
- National plans 2027-2032: national/regional governments define:
 - * minimum levels on KPIs for conditionality, eco-schemes A/B/C, or Eco-scores A/B/C per region (soil type, water catchment area) – and add KPIs if necessary in the region (preferably with a scoring system in which trade-offs between KPI can be handled, see the current Dutch system for eco-schemes)
 - Each region should aim for e.g. 20% farms with score A, 20% in E. In future: larger regions.
- The certification methodology as currently in use for organic farms is extended to all farms (> € 25.000,- sales) and the certification includes all other (national) public farm regulation (like the French Duerp on risks of labour etc).
- Audits can combine public and private audits in a one-stop-audit
- Farmers have to send in their audit result (eco-score and non-conformities) to the paying agency
- [a framework law on sustainable food systems could regulate food industry on e-invoicing, on using the public certification as basis in private top-up schemes or oblige blending]

The data handling with paying agencies is reduced with such an approach as farmers have only to send in their audit result (eco-score for the farm and non-conformities) to the paying agency. As argued above small farms (less than € 25.000 sales) should be exempted from such a scheme, and their income support unconditional, unless they want to join the eco-system payment scheme or a sustainability scheme of a trade partner. Farms that not enter an eco-system payment scheme in the CAP or do not join a private sustainability scheme, get automatically an E-score and are not certified / audited.

A framework law on sustainable food systems could regulate food industry on e-invoicing and on using the public certification as basis in private top-up schemes that claim sustainability in a general sense (to prevent greenwashing).


In addition to this use of an eco-score per farm to make sustainability tangible in result-based management and align private schemes of trade partners with public schemes, the certified eco-score could be used for more support of farmers to stay within the boundaries of our planet and its eco-system.

Farmers that have an A or B score, or farmers that have a good plan to upgrade to that level can be supported with many other policy instruments. Targeted extension and knowledge development and

subsidies are a non-brainer. National or regional governments that intervene in the land market (e.g. the French SAFER system) or in the market or emission rights (like the Netherlands with its rules for shaving off traded rights) can use the Eco-score to support certain categories of more sustainable farms – that currently sometime loose in these markets as their less sustainable competitors can pay a higher price. At local level something similar can be done with zoning and building permits.

More support can also be given to the more sustainable farms (e.g. those 20% with an Eco-score A) by forcing the food industry to buy those 20% at a higher price. This would be a blending obligation like the obliged use of bio-ethanol in petrol or the feed-in tariff system for the German (farm and household) energy producers. The price-premium to be paid to farms with an A score could be

Extensions based on certification



Start measuring and monitoring: Based on their certification and audit results farms can be classified on their level of sustainability, a sustainability or eco -score for the farm (and its products) like the Nutri-score.

This makes it easier:

- In CAP Pillar 2 to provide assistance to farms to move up from label D (or bronze, or orange) to label B or A - with innovation support, AKIS etc.
- For food processors, banks and land owners to report in CSRD or to differentiate trade conditions (e.g. interest rates) between more and less sustainable farms
- A Framework Law on Sustainable Food Systems could oblige dairy factories and slaughterhouse to buy 25% from farms with the highest sustainability score (A / dark green) and pay a premium that reflects the farms' extra cost (blending as in petrol). That would solve the issue that we force farmers to become more sustainable without paying these price-takers.

calculated (“objective method”) on FSDN data. As some food processors would have more sourcing of A-farmers than others, the obligation should be tradeable between food processors. Like in the car-industry for the obligation on producing electric vehicles. It is of course wise to start with such a scheme in a few sectors that have very centralised food processors like dairy factories and slaughterhouses.

Like in food safety and organic farming, an Eco-score system with certification could be extended to competitors outside the EU. EU standards as in food safety and organic farming are applied world-wide by producers and farms have to comply before their product can enter the European market. It seems that these examples can also be inspirational for a sustainably measurement system. In addition, a CBAM-approach might support farmers.

In conclusion: farming is a market-activity and supporting farmers to respect the boundaries of the eco-system should be done by bringing the sustainability aspects into the economic system. Regulation without paying does politically not work as it speeds up structural change. Emission rights can work, as did milk quota in the past. An alternative is an Eco-score system at farm level that aligns incentives from the government with those from the retail and food industry.

How better use be made of the immense opportunities offered by knowledge and technological innovation?

There are immense opportunities in technical innovation that can support farmers and the food system to deal with sustainability challenges and with high labour costs. Many are based on fundamental technical revolutions like those in information technology (robotisation, Artificial Intelligence but also simple once like e-invoicing, satellite data and observations by drone) and in biotechnology.

However, there are a couple of remarks to be made. First of all, over the last 75 years the sector has been very successful in adopting technical change. Which suggest we can rely on current incentives from the market.

Second, several of these technologies are a further industrialisation of farm processes, that are not in line with the more romantic ideas (‘small is beautiful’) by some people on how farms should look like.

And some technologies have been blocked in Europe on stringent risk-averse considerations, that are probably needed to be unblocked to take up challenges of climate change.

A third remark concerns the issue that technological innovation nearly always speeds up the treadmill of structural change: larger farms adopt and are better able to outcompete smaller ones in the land market. The benefits of stronger technological innovation go in the end to the consumer in the form of lower food prices.

A fourth remark concerns the need for social innovation. There are huge differences in the performance of farms, partly due to differences in competences of farmers. That is already the case in cost prices and income (KPI in which the farmer has an interest) and the distribution in sustainability performance, for which the markets generate even less feed-back, is probably even larger. Much improvement can be reached if the performance of farms would be brought to that of the more efficient ones. The AKIS system should be strengthened. Farmers should be supported in their strategic renewal of their business model with a broader orientation than just food production.

Fifth, Innovation takes only (and nearly automatically) place in the right direction if it is rewarded by higher product prices or lower costs. Bringing sustainability challenges into the economic system will improve the take up of technologies that reduce pollution (from feed additives to AI-driven spraying machines that reduce herbicide use) that already exist but are sparsely adopted as incentives lack.

On average, the share of consumer income spent on food has seriously declined. A continuation of the current system would lead to a bit more purchasing power of consumers that can be spend on even more consumer goods, as in the past 75 years. This seems not to be in the long-term interest of society, now that new challenges in climate change and biodiversity loss are a new reality. The success of the past, gives options to better target the innovation capacity to the reduction of environmental and health costs instead of a further decrease in consumer spending on food. The current innovation capacity of the food system is directed to lower food cos, a reorientation to sustainability challenges is needed.

In conclusion: the innovation capacity of farming and the food system is high. It has to be redirected from ever lower food prices to current and future challenges.

How can a bright and thriving future for Europe's food system be promoted in a competitive world?

Much of the discussion on the future of food production concerns farming. That is understandable as agriculture is traditionally an important policy domain with the EU and as this is the layer where most of the externalities occur (although sustainability is not mentioned as an objective of the CAP in article 39 TFEU). However, farming is just one layer of the food chain, and also one of the weakest. Farmers are sandwiched between large input-suppliers on one side and food processors and retailers on the other side. Consumers will also not automatically change the system for the better.

The performance of the European food system during the Covid-19 crisis and the Ukrainian war situation shows that it is, broadly, robust and adaptive. But the European food system also faces a triple challenge: 1) guaranteeing a healthy diet for all, 2) mitigating and adapting to climate change, as well as 3) protecting and restoring habitats for their biodiversity and ecosystems services. These long-standing challenges suggest that the current food system has not yet been able to transform itself: there is system failure (a combination of market failure and policy failure). European food systems currently do not deliver sustainable diets, defined by the Food and Agriculture Organisation

(FAO) as, 'diets with low environmental impacts which contribute to food and nutrition security and to a healthy life for present and future generations'.

Therefore a food system policy is needed. The European Environment and Sustainable Development Advisory Councils Network (EEAC Network) that brings together advisory bodies established by national or regional governments or parliaments, argued in its policy brief on this issue for a more consistent food system policy with the Framework Law for Sustainable Food Systems, that would align the collaboration between the actors in the system to tackle current challenges. Its proposal:

To govern the food system with the purpose to "Ensure sustainable diets", the framework law should:

guarantee a resilient European food system that ensures sustainable diets with low environmental and ethical impacts that contribute to food and nutrition security and to a healthy life for present and future generations by enabling that

- i. healthy, sustainable diets are available for all European consumers at prices that reflect their true cost in coherence with 'the polluter pays' principle.
- ii. food is produced in adequate quantities, with processes that result in environmental performance that is as best as reasonably achievable and regenerate climate-resilient, healthy agro-systems.
- iii. the food system works as inclusively as possible and relations between food chain actors are balanced which results in livelihoods with fair incomes and working conditions for farmers and workers.
- iv. new technologies are developed and best available technologies in relation to climate change and ecosystem services are promoted, respecting the precautionary principle.

In working out the common food system policy and the policy instruments for its application, account should be taken of:

- a. *Relations with third countries inside and outside Europe* in the sense that higher environmental standards in the European Union should not lead to more imports that cause more environmental damage elsewhere (off-shoring) than might be the case with the production in the European Union; exports should not be based on much environmental damage in the Union.
- b. *Relations with other sectors using biomass (e.g. for energy or building materials) and policies affecting land management*, in the sense that environmental standards for domestic and imported biomass should be harmonized and ratchet up across sectors. Overall biomass use should be limited, and that pressures on land across food, energy and construction sectors are balanced by policies to safeguard the biosphere. In particular, the use as bioenergy is narrowly limited in its potential, but can be an important addition locally if based on food waste and by-products.
- c. *The need to move to a circular economy*, which among others raises concerns on the loss of exhaustible stocks of phosphate and other minerals by human consumption and on the importance to upcycle food waste into feed or food.
- d. *Income effects of food system policies that affect the standard of living of consumers*, where compensation will be sought by (national) measures in social security, income taxes or minimum wages.
- e. *Income effects of food system policies that affect the standard of living of farmers or workers in the food chain*, where mitigation will be sought by transitional payments for an optimal utilisation of the labour factor in the economy, or compensated for farmers by direct support and (national) measures in social security or income taxes.
- f. *The possibility to reward farmers with a fair income for public ecosystem services in relation to land and water management*, e.g. in the Common Agricultural Policy.
- g. *The rapidly increasing possibilities based on digitalisation for effective policy instruments* to measure or estimate environmental effects of production, calculate their cost, certify the production units, label the products and inform buyers.

- h. *The major differences in environmental conditions for agriculture* between European regions in terms of natural conditions (soil characteristics, water system) as well as proximity to cities and use of farming technologies. This means that the sustainability of a production process and measures to improve it, have to be judged in the local context - but on the other hand there is also a need to prevent actors in the food chain from creating an unfair competitive advantage in the single market at the expense of public values in sustainability. Besides environmental performance, sustainability also includes ethical aspects such as animal welfare and (migrant) labour conditions.
- i. *The role of the food environment in nudging the consumer into sustainable consumption.* This means that effective food system policy should not only address food and the way it is manufactured, but also the context in which it is marketed and sold.

For more details, see: <https://eeac.eu/wp-content/uploads/2022/10/Towards-a-sustainable-food-system--An-EEAC-Network-Position-Paper-PV.pdf>

In conclusion: in the past 75 years the actors in the European Food System were very successful in creating a first class system that has a global reputation for good, safe food and drinks. Input companies like in seed or specialised machinery, food processors and some retailers are acting at a global level with important brands. This has been created under a modernisation paradigm after the second world war with a clear common vision of governments and industry. When economies stagnated in the 1970s, a new, more liberal paradigm created new opportunities in global trade. It seems that also this paradigm comes now to an end under geopolitical changes and large groups in (rural) society that are unhappy with some of the unintended outcomes of this liberal period. Given climate change the industry and governments have to find a new common paradigm that helps people to face the new challenges. The future reputation of European food and drinks, especially in export markets, will depend on a reputation of being safe, healthy and sustainable. Like the Red Queen in Alice in Wonderland, the food system in the broadest sense, including banks, software companies, consultancies and governments, should keep running to stay in place. Leadership is needed, that the Strategic Dialogue can show.

Krijn Poppe

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