White Paper

A new strategic course for the CAP

Contents

Glossary

EQA	Europe Quality Aid
EC	European Commission
FAO	Food and Agriculture Organization of the United Nations
IMF	International Monetary Fund
AMS	Aggregate Measurement of Support
OECD	Organization for Economic Cooperation and Development
WTO	World Trade Organization
WHO	World Health Organization
UN	United Nations
FADN	Farm Accountancy Data Network
CAP	Common Agricultural Policy
CCP	Counter-Cyclical Payments
EP	Equilibrium Price
FP	Floor Price
CP	Ceiling Price
DSTE	Domestic Support with Trade-distorting Effects
SGPAA	Global Support to Agricultural and Food Production
	Soutiens Globaux à la Production Agricole et à l'Alimentation
PRT	Public Regulation Threshold
FST	Financial Solidarity Threshold
TAFTA	Trans-Atlantic Free Trade Agreement
EU	European Union

Summary

1. Momagri's position on the CAP reform

Has the negotiation on the 2014-2020 Common Agricultural Policy (CAP) just finished that multiple income crises in different productions confirmed the CAP's difficulties in achieving one of its most important objectives: guaranteeing the market and income stability. Negotiated in a favorable price period, the reversal in agricultural commodity international markets has demonstrated that unlike most of the other countries' agricultural policies, the CAP is not adapted to secure the competitiveness and the sustainability of the European agriculture. It is now high time to give a new strategic course to the European agricultural policy.

In effect, it is no longer acceptable to keep on justifying the dismantling of European crisis management mechanisms:

- on the basis of the WTO rules which do not include food security and are circumvented by main agricultural countries,
- on the belief on stable trends of agricultural prices without considering their volatility in forecasting models,
- on the idea that greening is the only approach to transform the CAP whereas securing farmers is an essential prerequisite for better production practices.

This is a fundamental political fallacy which, by ignoring the structural volatility of agricultural markets and agricultural crises, fuels Euro-skepticism on a daily basis.

In fact, the European agricultural policy no longer has sufficient tools to intervene in case of market instability despite a large number of mechanisms in its "tool box". Confronted to negative consequences of agricultural markets' excessive volatility, policy responses cannot just focus on limiting those effects by trying to make farms more "resilient". It must, like other agricultural powerhouses, also prevent and directly act to curb price movements that go way beyond the scope of supply-demand adjustment. The implementation of the voluntary milk production reduction support in 2016 has indeed shown the efficiency of such a curing approach rather than those which consist in paying for the damage. However, it is obvious by reading the Commission's communication on the post-2020 CAP that this type of support remains taboo.

In this respect, Momagri recalls that not only agricultural market volatility is structural but also extreme price movements tend to be amplified, due in particular to the growing financialization of agricultural markets. Farmland reserves and productivity gaps are such that the scenario of a trend of higher agricultural prices resulting from an insatiable demand fueled by the prospect of "nine billion mouths to feed in 2050" is not credible.

On the contrary, the 2007-2014 period of relatively high prices we just experienced have stimulated unprecedented investment in agriculture throughout the world. Land recently farmed, new equipment to increase farming labor productivity might boost production far beyond consumption growth, and lead the agriculture in the world, where governments have failed to react, to a long and painful overproduction crisis.

The agricultural production is characterized by two principal aspects. First, its cost production structure is similar to that of a heavy industry. Second, producers are multiple and highly dispersed, which prevent them from individually profiting from a price increase just by reducing their production. The supply-side answer of the agriculture sector is therefore extremely asymmetric to price evolution. When prices go up, the production expands rapidly; but when prices go down, the latter cannot shrink equally as fast. It is not a matter of "market signal" perception because farmers on their own have no interest in compressing their output when prices are decreasing. This is the reason why agricultural prices do not move regularly and around the level of production costs but display asymmetric cycles marked by "brief peaks and large troughs".

In such context, the inability to assume the Doha Round failure and to draw its conclusions to design the foundations of a new multilateral governance system for agricultural policies, is indeed instructive. For lack of a better coordination of agricultural policies that would help emerge genuine international cooperation on market stabilization, the instability of international prices will inevitably be synonymous to trade openness reduction. As what happens in the international commodity trade has proved, it is stability that allows increasing trade, not the reverse.

With the latest CAP reform, and even more with the milk crisis induced by the quota removal and the release of the European dairy productive potential without any safety net (the EU is the top world producer of dairy products), the European Union continues its tragic course like a headless duck. The sugar price drop following the end of European sugar quotas has effectively confirmed this fact.

At the same time, the United States, Brazil, China, India, Russia and many other nations have learned from the 2007/2008 food crisis, and strengthened their support programs to prevent their farmers from "sinking into the red" in times of international agricultural price collapses. There, agriculture and food production are considered as strategic assets, while in the Old Continent it would be "modern" to let a vital sector of our economy at the mercy of climate events and demand-driven adjustments, that are all the more painful as not being facilitated in an orderly fashion.

Paradoxically, the crisis currently occurring in the European Union might put forth a new CAP able to effectively fight the scourge of volatility and further safeguard its agricultural sector. This CAP should be the one which puts agriculture in the best conditions in order to face the many challenges of the 21st century––food and population challenges, climate change, dwindling fossil fuels and preservation of natural resources, etc.

At stake is the EU added value of the CAP to intervene when markets fail and to have the adequate budget leeway to implement a policy that prevents and manages crises.

All major agricultural powerhouses have designed their agricultural policies in order to cope with or tackle price volatility, except the European Union. The bloc is now the only one to pursue the logic of decoupling which, by definition, has no "counter-cyclical effect" or stabilizing factor on farm incomes, since it means granting subsidies without any consideration of production type or price level.

In addition, decoupled subsidies can be referred to as unwarranted rents. Those payments eventually impair competitiveness by increasing production costs (over-investment and increasingly costly production factors, rent-seeking by downstream). They also enmesh European farmers in a rationale of buying social peace with adverse consequences on the profession's image and attractiveness, even though European production will continue to weigh in international balance.

Yet it is indeed when markets are collapsing that farmers need support. This is the motivation of counter-cyclical measures that enable budgetary resource deployment to mitigate the "cycle" effects and increase support when low prices so require.

This is the reason why Momagri calls for urgent thought about a revision of the CAP which integrates crisis prevention and management mechanisms as well as a new budget approach based on price-dependent support.

It is as such crucial that the CAP has the adequate economic and budgetary flexibility for:
- ensuring a more stable income to farmers, and thus giving them better visibility in the future,
- improving the competitiveness of agricultural and agri-food transformation sectors that are significant job providers,
- meeting Europe's strategic challenges in terms of food security and development of the biomass sector in the context of climate change and exhaustion of fossil resources,
- while benefiting European consumers both quantitatively and qualitatively.

2. Founding principles of the Momagri proposal

A. Assumptions and choices

In line with the founding principles of the CAP established by the Treaty of Rome (1957), the Momagri proposal is based on the acknowledgement that agriculture is a strategic and specific activity that must protect its farmers, meet consumer needs and ensure the competitiveness of agribusinesses.

Below are the requirements that the alternative CAP project proposed by Momagri must satisfy:

- Implementing regulation mechanisms providing farmers with adequate visibility and fair compensation for their productions,
- Improving the functioning of European agricultural markets by correcting market failures and encouraging farmers to set up effective producers' organizations,
- Promoting European production in terms of quantity and quality to enhance food security,
- Ensuring better prevention and management of risks, especially the economic risks confronting farmers,
- Further safeguarding the food chain functioning to help farmers, consumers and intermediary operators achieve true social and environmental progress,
- Enhancing the CAP budget effectiveness and recovering a genuine "community added-value",
- Filling the current gap between the CAP and the agricultural policies conducted by the world major economic and agricultural powerhouses.

Analyzing the risks confronting farmers reveals that, while a great portion of production risks can be dealt with by approaches based on risk pooling and insurance, economic or market risks are inherently systemic (affecting all farmers at the same time). These latter require public intervention, not only to limit their negative impacts on farmers but also to curb the costs of agricultural price volatility which hurt the whole economy.

The development of revenue or margin insurances is restricted by the systemic nature of market risks. Proposing such instruments forces insurers to cover themselves by transferring the risks to futures markets. Revenue insurances are thus based on prices that cannot differ from prevailing quotations. In this way, if markets are depressed, the coverage will be quite limited.

Another type of private risk management tools often advanced since the 2013 reform is the economic pooling fund, also called "income stabilization instrument". Just like other tools of this kind, this instrument is only efficient when prices fluctuate regularly around the level of production costs but not when prices follow cycles with "brief peaks and large troughs". Therefore, even with a lower striking threshold corresponding to 20% loss under the Omnibus rules, the presence of troughs might prevent the disbursement due to the lack of sufficient variations of income which is already too low and too stable.

In particular, the implementation of economic pooling funds raises several institutional and political questions. Which producer organizations could be strong enough to handle these funds? Could we justify the exclusion of benefit of such public support from the farmers who are not able to contribute in the less bad years? Is this the expansion of the renationalization of the CAP, while the good functioning of the interior market is guaranteed the most at the European level? Does the implementation of such funds in crisis period by pushing them to mobilize money on financial markets not correspond to the creation of an agricultural version of American "subprimes", a kind of agricultural crisis securitization?

Defied by this structural instability and the numerous imperfections of agricultural markets, public intervention is therefore justified and the promotion of private risk management tools as

substitutes of this public intervention is only a dilatory strategy. For Momagri, combining counter-cyclical direct support––that vary according to prices––with crisis management measures to adapt supply to demand is the most effective and efficient solution for the CAP.

Among the crisis management measures, giving more flexibility to biofuel policies serves as an important lever supplementing the classical intervention measures based on public stockpiling. Such type of measure has already been implemented in Brazil and partially in the United States. It is one of the means to stabilize key agricultural commodity markets in wide enough price ranges to enable adjustments. Reconsidering the instruments to promote first-generation biofuel consumption and agricultural policies as a whole seems to be an indispensable step to be aware of their market stabilizing role and allow the prioritization of food usage within a renewed global governance.

In this white paper entitled "A New Strategic Course for the CAP", we develop a completed application model of a counter-cyclical support system for grain, oilseed/protein crop and milk production at the European level –– the Momagri-CAP. Beyond the familiarization with the terms and ideas related to such a system, the model constructed here allows to fully consider the consequences in terms of budget control and efficiency as well as effectiveness to support farming incomes and compliance with WTO rules.

While it is built on the principles operational in the United States with the Price Loss Coverage (PLC) for grains and oilseed/protein crops, the counter-cyclical payment system developed here presents the unique feature to be extended to the milk sector. Other sectors could potentially be involved, such as meat and sugar. However, counter-cyclical subsidies seem to fit more with agricultural commodities whose prices fluctuate with international trade. And some production chains have more to obtain from collective organization-based facilities (cooperatives and inter-professional organizations) and support to modernization through investment support notably. In addition, extending the Momagri-CAP principles must also take into account the current or future support forms: the large amount of coupled payments, the compensatory allowance for permanent natural handicaps and possibly support for pastures in return for the carbon capture must already be included.

Lastly, before presenting the various components of counter-cyclical support system in the Momagri-CAP, we should indicate that most of the parameters of the scheme are calculated based on historical references, and not on current annual data to be collected from beneficiaries. It is the case for base acreages, yields and prices. The aim is to avoid that payments interfere in farmers' behaviors. We can thus prevent the adverse effects that could be generated by subsidy optimization strategies. Farmers will in this way continue their crop rotations and marketing choices according to actual market opportunities.

Another advantage of resorting to historical references is the avoidance of a cumbersome administrative collection system, speeding up subsidy disbursements. It also enables to keep the system under control, and thus prevents risks of budget slippages due to increased acreages or yields.

B. Operational framework of the Momagri-CAP

The Momagri-CAP functions on the basis of an equilibrium price (EP) serving as the central marker of the regulation system. A price tunnel ① is to be defined around the EP, where there would no longer be any subsidy paid to farmers.

Below the floor price (FP), a system of counter-cyclical payment ③ would be initiated. This support is reinforced below a public regulation threshold (PRT) by public stockpiling schemes ④ limited to 4% of annual production, and other measures to stimulate outlets (biofuel production) or to induce production reduction (like the milk reduction support).

Symmetrically, beyond a financial solidarity threshold (FST) a direct tax on financial transactions ⑥ would be in place to avert excessive speculation, and public inventories would be progressively released ⑤.

A payment of €75/hectare––the Europe quality aid (EQA) ② would be paid to farmers. It is designed to offset farmers' required efforts towards environmental and land management issues.

The following diagram depicts the various components of the Momagri-CAP.
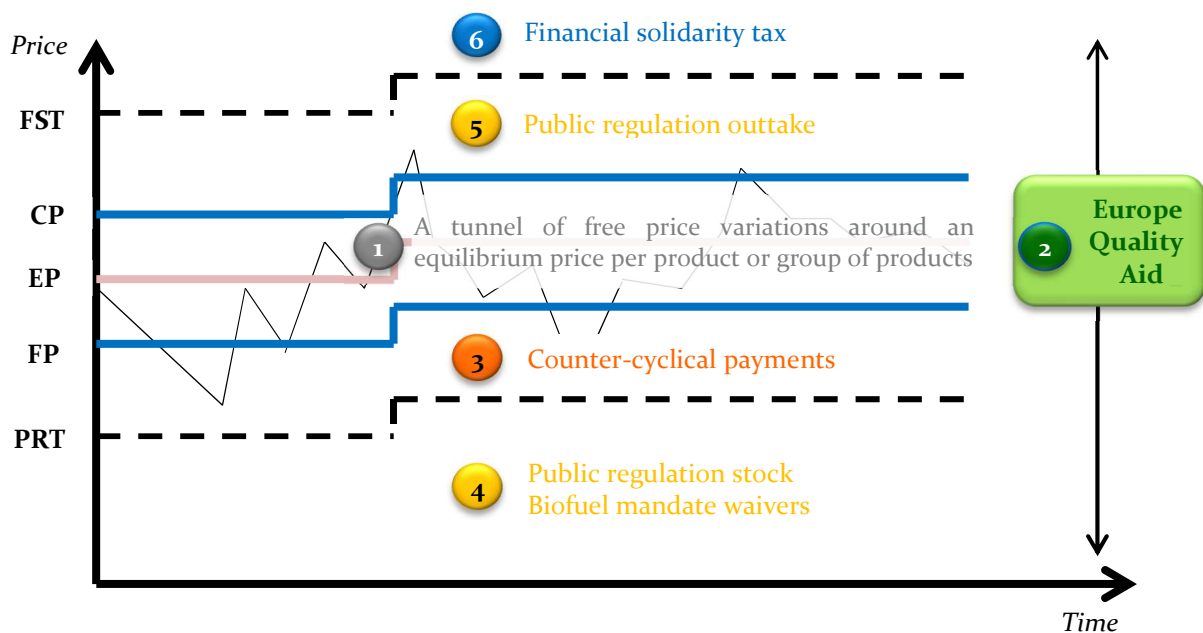
> ➢ **A tunnel of free price variation around an equilibrium price (EP)**

For each product, an equilibrium price (EP) corresponding to the average cost price is recorded based on production cost data collected in the EU by the European Farm Accountancy Data Network. This equilibrium price is the central element of the system, being reviewable

depending on important cost changes. It is the same for every Member state of the European Union.

A tunnel of free price variation, where prices fluctuate without any public intervention, is determined around the equilibrium price.

For the grain, oilseed/protein crop and milk sectors, the average cost price was calculated by weighting the annual average cost price in producing Member States by their share of volume produced in the European Union total production over the 2006-2013 period (sources FADN and European Commission).

By convention, the equilibrium price is equal to the average annual cost price. The floor and ceiling prices are estimated in relation to the average cost price dispersion across Member States as follows: Floor price = Equilibrium price - 1σ and Ceiling price = Equilibrium price + 1σ, where σ denotes standard deviation. So for the grain sector, CP=€235/t, EP=€215/t, FP=€195/t, to be compared with the wheat benchmark price of €202/t in the United States' PLC system.

Monitoring market prices and equilibrium prices will be the responsibility of the management committee. Equilibrium prices can be adjusted when their evolution exceeds a percentage to be pre-established by the Council of Ministers.

➢ **The Europe Quality Aid (EQA), a flat-rate subsidy per hectare**

The Europe Quality Aid (EQA) is a subsidy designed to offset the economic impact of costs induced by the European agricultural model –– quality, sanitary and environmental requirements. It has been set on €75/hectare.

➢ **Disbursements of counter-cyclical payments and regulation stockpiling**

When prices are outside the tunnel and below its bottom, farmers receive the counter-cyclical payments. Calculated on the basis of the gap between the market price observed in a defined period and the floor price (lower limit of the tunnel), this support will be available for almost all production (90%).

In the case where prices decline to a second limit set by the EU as the public regulation threshold, public regulation purchases will be made and demand-supply equilibrating measures -- like expansion of biofuel market, production reduction measures, etc. -- will be activated. Amounting up to 4% of annual production (regulation stocks), they are complementary to a permanent strategic stock for food security representing 2% of the annual production.

In this way, the complementarity between budgetary and market regulation measures will be exploited for better effectiveness of public fund and a true added value on the European level. The use of multi-annual budget envelop will remain under control thanks to the interior market management through stock holding and/or release or production reduction.

➢ **The financial solidarity tax**

When prices are outside the tunnel and beyond the financial solidarity threshold (FST) set by the EU, a variable solidarity tax will be introduced on agricultural commodity financial derivatives transactions. The receipts from this financial solidarity tax will finance the reserve fund for crisis management.

The budget management complies with European Treaties and financial rule

The CAP annual budgets (1st Pillar) may vary from year to year, following income and market regulation needs, within the multi-annual limit prefixed by the financial prospects. An annual reserve fund will as such ensure the complementary financial resource when the rectified budget is approved in case of worsening conditions. The European rules have already allowed to go beyond the budget annuality principle concerning the CAP Pillar 1. The application of countercyclical payments within our proposal does not require any modification of Treaties and budget rules.

Consequently, the actual budget consumption logic would be changed. By calling for varying national contributions in line with needs, it will be unnecessary to rely on a multi-annual budget whose credits are transferred from one year to another. A virtuous dialogue between the Commission and the Budget authority could instead be established to achieve better public expenditure effectiveness by a good policy-mix between budget compensation and market re-equilibrating measures, for a true added value all over the EU.

3. Impact on budget and incomes, and WTO compliance of the Momagri-CAP

A. Assumptions on key parameters

Budget simulations were conducted for the 2011-2020 period. The budget assumed for the simulation model below comes from the 1st pillar direct payments allocated to European farms producing grains, oilseeds/protein crops and milk, representing about 61% of the Pillar 1 total direct payments in 2014. All other subsidies (including the coupled support and Pillar 2) remain identical in this budget model.

For each commodity, 2015-2020 price change assumptions came from simulation results of the Momagri model. Equilibrium prices (EP) were calculated based on the European FADN data.

Grain price assumptions, €/t

- Momagri grain price
- Ceiling price = €235/t
- Equilibrium price = €215/t
- Floor price = €195/t
- PRT = €135/t
- FST = €250/t
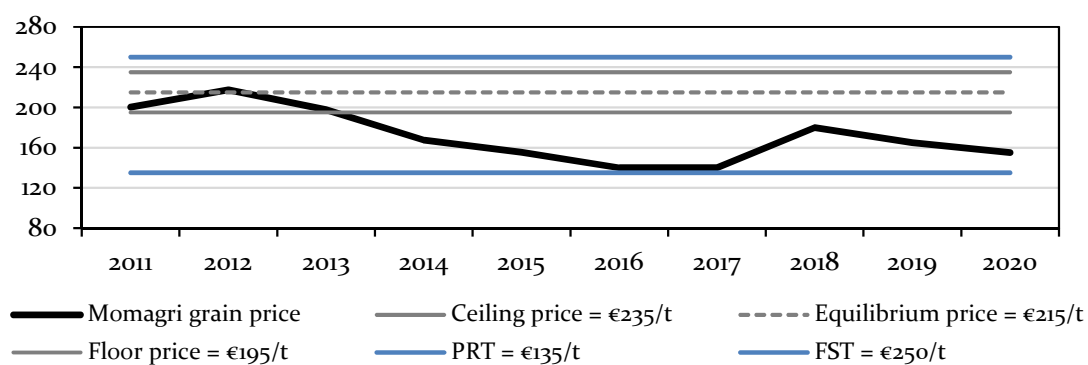
Source: Momagri

Oilseed/protein crop price assumptions, €/t

- Momagri oilseed price
- Ceiling price = €460/t
- Equilibrium price = €425/t
- Floor price = €390/t
- PRT = €270/t
- FST = €500/t
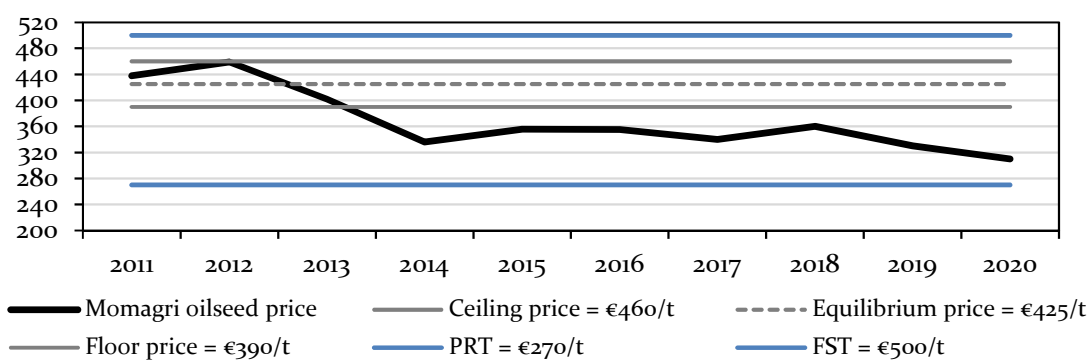
Source: Momagri

Milk price assumptions, €/t

- Momagri milk price
- Ceiling price = €370/t
- Equilibrium price = €350/t
- Floor price = €330/t
- PRT = €260/t
- FST = €440/t
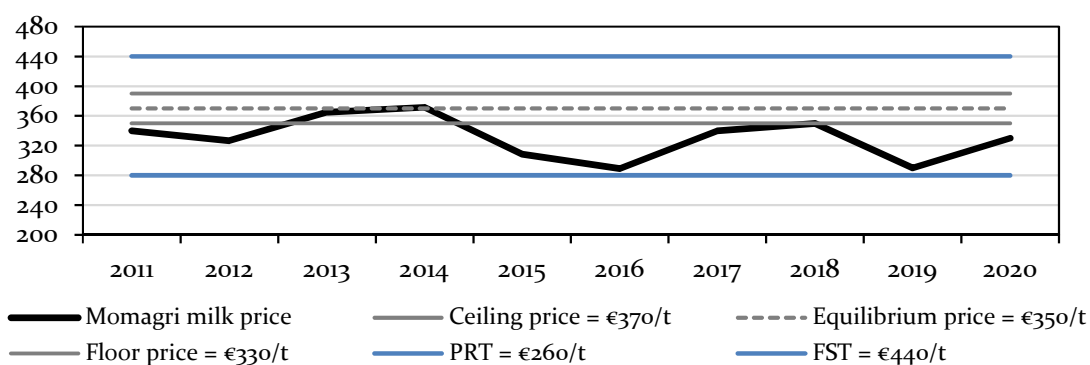
Source: Momagri

B. Budget implications and impact on incomes

➤ **Significant budget savings**

For the 2011-2015 period, the Momagri-CAP budget costs would have been lower than actual expenditures by about €4.7 billion on average per year, or 8.2% of the CAP budget. Under the presented price assumptions, a small budget deficit of €0.26 billion would be obtained over the period of 2017-2020, or an annual €60 million. On the whole, savings are close to €28 billion between 2011 and 2020.

Budget comparison CAP vs. Momagri-CAP, 2011-2020, in € billion
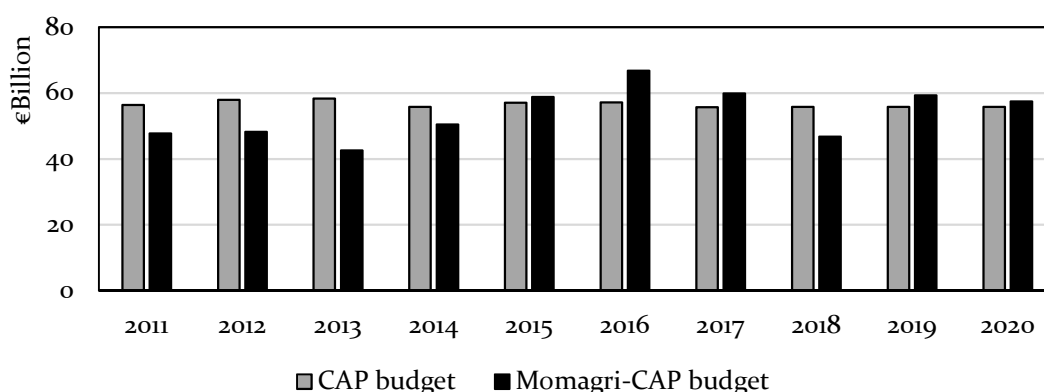
Average annual CAP budget: €56.6 billion (stable)
Average annual Momagri-CAP budget: €53.8 billion (flexible)

Average annual budget impacts for:
2011-2020: +€2.8 billion (+€28 billion over 10 years)
2017-2020: -€0.06 billion (-€0.26 billion over 4 years)

Cumulative budget gap between CAP and Momagri-CAP, 2011-2020, in € billion
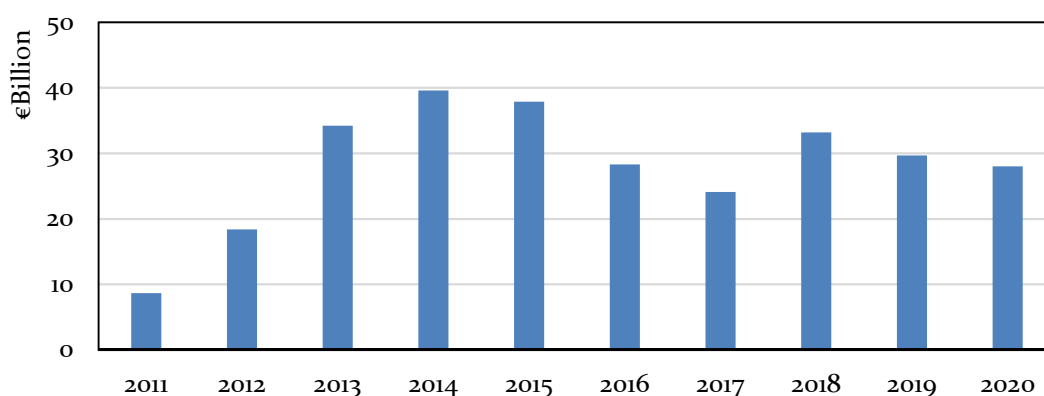
Source: Momagri

> ➢ **More stable turnover**

Based on the preceding hypotheses, economic simulations were conducted to measure the impact of the CAP and the Momagri-CAP proposals on unitary revenue for the grain, oilseed/protein crop and milk sectors. They enable assessing and comparing the Momagri-CAP outcomes to the results in usual scenario, in terms of average revenue and its volatility for the 2011-2020 period.

Comparison of grain revenue per ton, CAP vs. Momagri-CAP
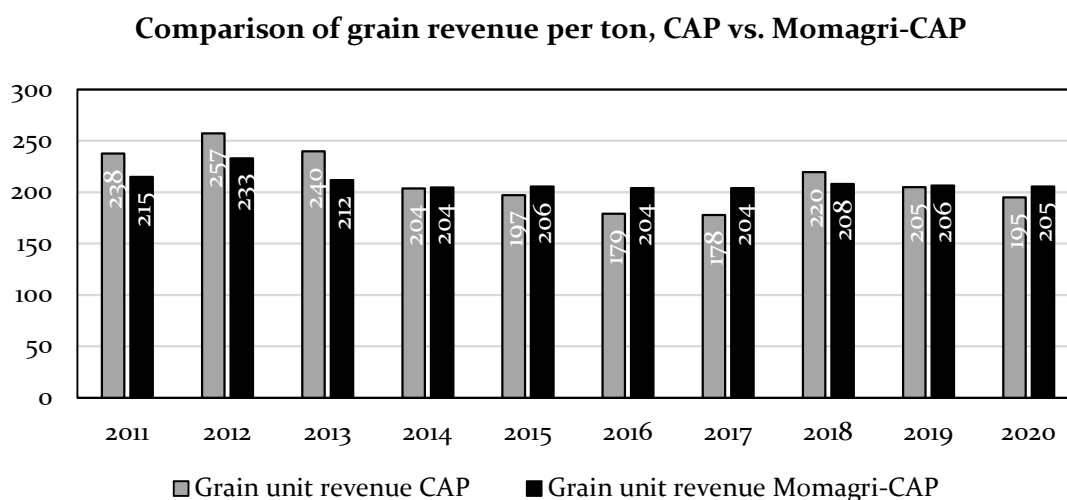
Source: Momagri

Under the indicated assumptions, it appears that between 2011 and 2020 with the current CAP, the average unit revenue of European grain farmers should total €211/t, with a minimum level of €178/t in 2017 and a maximum of €257/t in 2012.

Within the Momagri-CAP proposal, the average unit revenue for a European grain farmer would be €210/t, with a minimum of €204/t (2014 and 2016) and a maximum of €233/t (2012).

The results obtained for oilseeds/protein crops and milk are in a similar range for grains. They show that adopting the Momagri-CAP proposal helps stabilize turnover to a level close to the one observed with the current CAP.

> ➢ **A better economic effectiveness to support incomes**

More efficient, the CAP budget also becomes more effective to support incomes: the Momagri-CAP can smooth out impacts of price volatility on incomes by limiting the scope of income variations.

Based on accounting data from 600 farms specializing in arable crops in Eastern France (Marne) and 2,300 dairy farms operating in the Western France, we were able to compute average production costs and build typical farms. Under the price assumptions indicated above, we

obtain the annual farm net income per ton of milk (before taxes, without own factors remuneration) for a typical dairy farm working on 77 hectares, of which 16 hectares for cash crops, and counting 59 lactating dairy cows (See chart below). The average yield is 6,957 liters per milk cow, and 7.2t/hectare for wheat. For each year, the amount of the current CAP payments is indicated in the blue box on the left, and on the right in green is the amount of the Momagri-CAP payments. The farm net income including support is shown in the yellow boxes.

Estimation of the farm net income for a typical dairy farm in Western France, in €/tons of milk
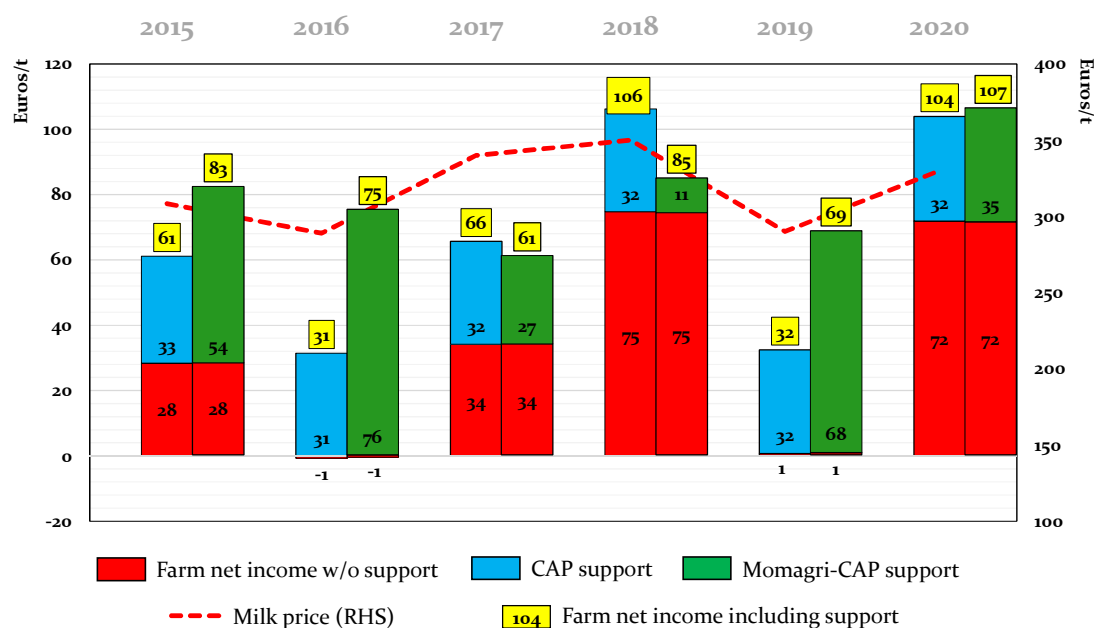
Source: FDSEA51, Momagri

It appears that with a milk price below €280/t, the farm net income without support becomes negative, i.e. farmers cannot pay their own factors of production (land, labor and capital) without subsidies. Thanks to the Momagri-CAP, the farm net income would be stabilized around €80/t in a relatively narrow band, with prices assumed not to exceed the floor price of €350/t. On average, the farm net income is higher to that of the current CAP.

In general, counter-cyclical subsidies allow to smooth out income fluctuations induced by agricultural price volatility.

2015-2020	CAP	Momagri-CAP
Average farm net income (€/t)	67	80
Minimum farm net income (€/t)	31	62

16

C. Compliance of the Momagri-CAP with the WTO rules

The WTO-compliance of the Momagri-CAP proposal was assessed for the 2011-2020 period regarding the WTO classification of domestic support, the prevailing limits for the EU-27, before the entry of Croatia, on the so-called distorting support (assigned to the blue and amber boxes), as well as the latest notifications provided by the EU-27.

Compliance of the Momagri-CAP
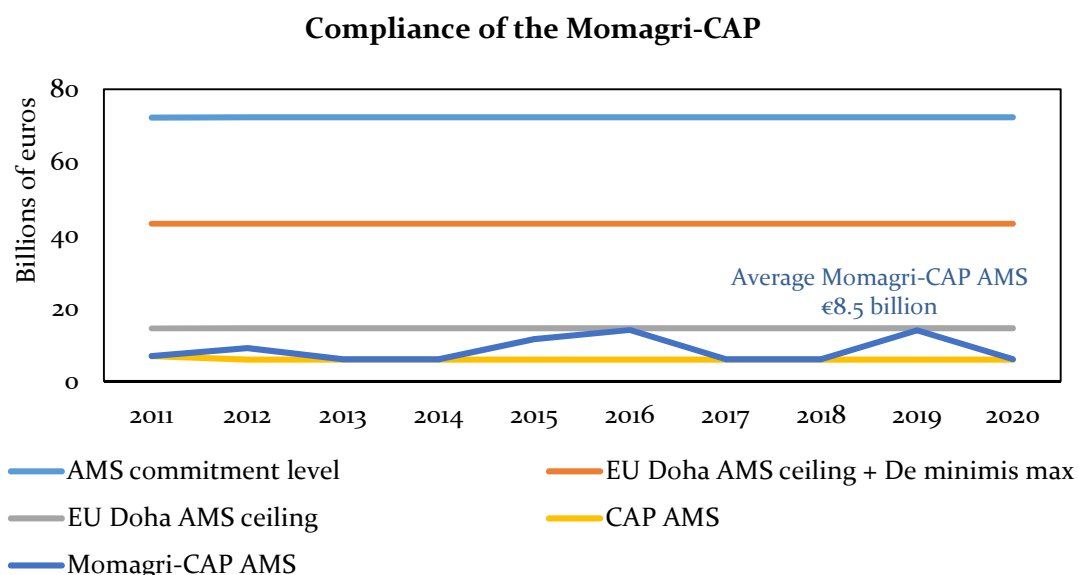
Source: Momagri

Considering that the Europe Quality Aid is classified in the green box[1] and counter-cyclical payments as well as public regulation stockpiling/outtake operations in the amber box[2], it is obvious that not only the Momagri-CAP project is WTO-compliant but significant leeway would also persist. Optimizing the *de minimis* clause and the high commitment level notified for the Aggregate Measurement of Support (AMS) offers in fact significant latitude.

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[1] Including non-distorting support, the green box is allowed without any limits.

[2] The amber box includes support considered as distorting, being limited at €39.9 billion. Yet, a part of counter-cyclical payments could be assigned to the blue box if the concerned production is lower than the threshold of 85% of the basic production level.

In sum, thanks to a counter-cyclical approach and crisis management tools, the Momagri-PAC allows:

- Lastingly stabilizing farmers' incomes and turnovers at levels that are close to the reported or projected average with the current CAP, in a smooth manner and with a minimum guarantee close to the equilibrium price,

- Significantly curbing the CAP budget through a crisis management-based regulatory framework,

- Limiting excessive upward and downward price fluctuations, since the proposed regulation mechanisms will stimulate price convergence towards the free price fluctuation tunnel, and thus towards the equilibrium price,

- Improving the effectiveness of EU public spending while preserving the role of agriculture, considered as a crucial strategic asset to deal with the 21st century challenges.

Part I
International Strategic Context

1. Agriculture at the heart of the 21st century global strategies

The Global Development Report published by the World Bank in 2008 presented agriculture as the pillar of economic development and the key to the future of our planet:

"The overriding objectives for the 21st century––eliminating hunger and poverty, protecting the environment, ensuring security and managing world health––will not be reached without agriculture."

This report appears as a signal since its publication just preceded the 2007/2008 food crisis. Nine years later, the agricultural outlook seems to be brighter. For the fourth consecutive year, world grain production is exceeding the level of 2.5 billion tons in 2017. This increase in volumes–– close to 25% in 10 years––comes with stock rebuilding, and thus price easing, so strong that it now raised concerns about a worldwide overproduction.

The 2016 reversal of the diminishing trend in the number of people suffering from hunger[3] confirms the fact. There are several factors which can affect the world food security. High but also low agricultural price levels could both be detrimental to the rural and agricultural population. Food security cannot therefore be limited to agricultural production availability since the production accessibility and stability are important as well.

The factors cited to explain the 2007-2012 high agricultural price period are indeed well known. They are for instance: population growth and above all the "nutritional transition" in emerging countries; the slowdown of productivity gains linked to the Green revolution; the still high level of waste in the production chain; the rising scarcity of fossil resources––oil, potash and phosphorus; the development of non-food uses that expand agricultural production outlets; and lastly the climate change effects.

For some observers however, these six factors do not seem to be enough to usher a new era of high agricultural prices, breaking with the long-term trend that, since the 1860s, has seen the value of agricultural output constantly lowered compared to other products due to important productivity gain observed in the agricultural sector.

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[3] See FAO, IFAD, UNICEF, WFP and WHO, 2017, "The State of Food Security and Nutrition in the World 2017. Building resilience for peace and food security", Rome, Italy. Available on http://www.fao.org/3/a-I7695e.pdf

Contrarily, this new era of high agricultural prices takes the form of an illusion, whose main collateral risk would results in concluding the ineffectiveness of stabilizing agricultural policies and renewed global agricultural governance. Two essential parameters in the world food security equation should indeed not be forgotten: the important reserves of uncultivated arable land and the considerable reserves of productivity shown by actual yield gaps.

In fact, about 200 to 500 million hectares in Africa, South America and Russia notably can be transformed for agricultural uses without damaging the primary forests. In addition, the per-hectare productivity gap between manual cultivation without inputs and farming profiting from technical progress goes from one to ten, or even from one to twenty. While climate and soil conditions provide a partial explanation, yields in the poorest countries should double, or even triple, in the next twenty years thanks to targeted investments and input addition.

Furthermore, the structural instability of agricultural markets that are left to their own resources remains unchanged. Demand inelasticity, supply short-term rigidity and the poor price transmission along the value chain have always meant, among other factors, that small gaps between production and consumption can lead to price variations that are quite far from normal. In 2008, a 1% gap brought about a 50% price boom.

This is all the more true since the 2007-2012 high price period––with sometimes abnormally high prices––that we recently experienced has stimulated unprecedented investment in agriculture throughout the world. Land recently farmed, new equipment to increase farm labor productivity, and newly established animal husbandry might indeed increase production far beyond consumption growth, and lead world agriculture in an overproduction crisis caused by such overcapacity.

Consequently, we are facing a double paradox that includes:

- A world agriculture with adequate reserves to potentially feed nine billion people––the FAO estimates that global output should grow by 30% to 70% by 2050––or even more, but is unable to eradicate hunger.

- An increasingly spreading instability in international markets that we will be unable, in the short-term, to determine if it validates or not the end of agricultural prices' decreasing trend.

In fact, and more than ever in history, everything will depend on the agricultural policies implemented by the major producing countries, their trade choices and their ability to renew a global governance for agricultural policies and trade. On the latter, the bilateral agreements–– such as the TAFTA/TTIP or the CETA with Canada and the stalemate (or even the clinical death) of the WTO's Doha Round––respectively seem like a headlong rush and a persistent failure that are calling for a growing awareness. After 30 years during which the role of stabilizing and sustainable agriculture policies has been gradually diminished under a too rigid acceptance of liberal theories, a blind belief in industrialization and the emergence of service sector as the sum

and substance of economic development, we have now reached a crucial time in strategic reorientation.

We shall see later that the world's major powerhouses have adopted this approach, while Europe is persevering in options that are more and more disconnected from reality.

Here are the fundamental factors to be considered:

Factor No.1

The population growth, which will bring mankind to nine billion people by 2050 (eight billion by 2030), mostly in African and Asian developing countries.

To this regard, it should be recalled that the world only counted one billion people in 1900, three billion in 1950 and seven billion in 2013. Europe totals 500 million people and benefits from an exceptional agricultural and agro-food potential. It must be preserved and strengthened through a twofold action of market regulation and innovation stimulation. Given their geographic proximity and common history, European countries have a specific role to play in the southern shore of the Mediterranean Sea and more generally in Africa, where population growth is the strongest and potential economic development is the most dynamic in the 21st century.

Factor No.2

The advent of global economic powerhouses, with a considerable productive, financial and political potential––China, India, Brazil, Indonesia, Russia, Iran and Mexico––not to mention the regional clusters that will get stronger in the coming years.

Most of them gave priority, in their development plans, to food security––even food sovereignty––and objectives of market share gains for both agricultural commodities and agribusinesses. This led to policies clearly oriented to support farmers' incomes and/or offset market instability through administered prices, income-coupled subsidies, counter-cyclical payments, insurance schemes, as well as "strategic" trade management or the financing of security stocks––a key WTO stumbling block supported by India, the G33 leader. The whole package of agricultural support policies is thus implemented. What a stark contrast with Europe which is taking the opposite path!

Factor No.3

The continued existence of people in food distress coexisting with the beneficiaries of vibrant economic growth in emerging countries, generating increasing food supply tensions.

According to FAO estimates, 815 million people were suffering from hunger in 2016, or 11% of the world population. The Millennium Goal to halve the number of people suffering from hunger between 1990 and 2015 has not been reached in spite of remarkable progress at the end of the period. In the low agricultural price context, the increase in number of undernourished people in 2016 shows that the issue remains unsolved. Fighting hunger also requires considering farmers

from the poorest nations, for whom low agricultural prices and the lack of agricultural policy represent dramatic poverty traps.

Factor No.4

An inadequate use of land particularly in countries with a rapidly growing population but for different reasons:

>   *- An under-utilization of available land that is not cultivated due to the population extreme poverty and low investments in production and infrastructures,*

>   *- A limited access to farmland of local communities, especially within the land grabbing process*

In spite of significant potentials, there is very little increase in cultivated land areas. It only grew by 4.5% between 1980 and 2005, while the world population increased by 45% in the same period.

Population growth without simultaneous economic development in rural areas results in rural exodus without alternative opportunities in terms of jobs. This contributes to the formation of poverty bubbles around third world cities, which, far from providing substitute activities, become huge no man's land and wretched districts populated by prospective migrants.

Factor No.5

A growing concern for environmental protection and biodiversity that leads to initiatives sometimes contradictory and the absence of the transition direction which weaken the production systems.

This is the debate on greening of the CAP which will lead to outcomes contrary to expected results. Without the ability to economically secure farmers, the supplementary constraints will be seen as unfair since they dampen the EU competitiveness against partners that do not have the same level of environmental standards.

The attempts to reduce the CAP to an environmental policy for farmland thus might weaken the agricultural sector and create greater transition inertia. How is it possible for farmers to run the risks of change while they have already had to struggle for their business survival? In contrast, the challenges from the resource and natural environment protection as well as the fight against climate change require more integrated approaches which take the trajectory and the economic sustainability of production systems fully into account.

Factor No.6

Arable land has become a new strategic challenge, as pointed out in a report published by the World Bank in 2010:

>   *"The scope and often the speculative aspect of land transactions reported recently caught everybody by surprise. [...] As a result, acquisitions are often made at the expense of local*

communities, especially those who are the most vulnerable, without providing them with any adequate compensations."

In fact, international purchases of land have significantly increased since the 2007/2008 food crisis, as a number of countries and investment funds found it necessary to guarantee a secure supply for the future, and acquire a powerful impetus for speculative operations. The latest data provided by Landmatrix[4] indicates that the trend would concern about 49 million hectares and no less than 1,410 transactions. The application of voluntary directives on land tenure systems represents a real challenge of regulation for agriculture and world stability.

Factor No.7

The financialization process in commodity markets recorded since the early 2000s is the cause of speculation that dampen agricultural markets. Resulting from the growing permeability between the financial world and agricultural markets, and the considerable weight and mobility of the financial resources at stake, this phenomenon contributes to amplify the structural instability of agricultural markets.

The role of financial speculators in agricultural price instability is now recognized, as outlined in a note by the Special Rapporteur on the Right to Food[5] in 2010. In the United States, the 2010 Dodd-Frank Act marked the end of the deregulation process initiated in the 1980s by calling for a stronger supervision and a greater transparency of derivatives markets.

Similarly, during its 2011 Cannes Summit, the G20 adopted the principle of limiting the maximum position of a given operator in these markets. In Europe, this proposal was registered in the review of the European directive on financial instrument markets (MIFID2) adopted in April 2014, with the essential part coming into effect from January 2018.

Factor No. 8

Agriculture as determining factor of the fragility or power of nations

The 2007-2008 food riots have reminded us of the extent to which agricultural and food issues are primordial for governments' policy stability and at the center of geopolitical stakes. This is highlighted by the impacts of export embargo application which may not engender severe shortfalls in supply but rather intensive inflation in countries affected by the sanction. Agricultural and food policies are among the most important vehicles to guarantee the economic and political stability of every nation. Indeed, no government can stay passive against food security threats, as formulated Winston Churchill: "Three meals separate the civilization from chaos". Furthermore, the recent diplomatic crisis between Qatar and Saudi Arabia has made it clear again that food weapon is a crucial means to exert pressure.

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[4] http://landmatrix.org/en/

[5] Olivier de Schutter, "Food Commodities Speculation and Food Price Crises. Regulation to Reduce the Risks of Price Volatility", Briefing Note by the Special Rapporteur on the Right to Food, September 2010.

Agricultural and food issues thus logically occupy a prominent place in international discussions in various official arenas, such as the G8/G20, the Rio Summit and the UN organizations in general. Yet, everything unfolds as if the inability to recognize the Doha Round failure in its liberalization project holds up any progress toward the renewal of a new agricultural governance truly based on cooperation, so that we can continue to get the benefits of controlled trade openness. We have no choice but note that the degree of cooperation between nations remains limited on an issue considered by many countries as strategic and relevant to their national sovereignty.

We only need to list the negotiations for the free-trade agreements between Europe and several major partners, such as Canada or the United States. Europe is in fact committed to these negotiations without any strategy for itself and for the world but an unrealistic and minimal GDP gain, at the cost of a potential abandonment of its last customs protection in agriculture and a possible questioning regarding its non-tariff choices. This shows once again that, in Europe, agriculture is no longer considered a strategic sector, while this rapid review of fundamental factors to be accounted for clearly reflects the contrary.

2. Europe is going against the trend

The 2007/2008 food crisis has doubtlessly raised awareness again on strategic dimensions of agriculture and food. But considering the relevant interests, the "business as usual" rationale is still dominating in Europe.

In fact, we are experiencing the last jolts of the deep changes that marked the 1980s. Between the fall of communism, the triumph of liberalism and the certainty that multilateralism will be the best defense against neo-colonialism, a paradox concept of international cooperation was born. It is that of unregulated trade openness that was supposed to spontaneously promote economic development in developing countries.

The arrangement between Americans and Europeans which serves as WTO agricultural discipline basis aimed to stop non-cooperative policies by forbidding the measures used in certain countries to export their domestic disequilibrium to international markets. Unfortunately, this compromise has written off the stabilizing role of markets which the US had known how to take advantage of from the 1930s and the 1980s for grains. This is because the ideological foundation of the settlement come from the belief that free markets naturally possess stabilizing power. As a result, WTO rules prevent free rider strategies by minimizing the use of political measures which destabilize international markets, but they do not either allow to design cooperation between States to maintain any stability for international trade.

The major criticisms against the CAP came from agents who consider, without any further thought, that rich nations must dismantle their production support in order to allow poorer countries to develop. Nevertheless, it is stabilizing policies that these countries are most in need of. In reality, each movement has greatly exploited the other, but none of them anticipated the

issues returning into consideration after the 2007/2008 food crisis. The international community certainly did not prepare for the situation, and ten years has passed but it is still too difficult to launch an updated version of multilateralism. In the meantime, it continues to focus on unfruitful negotiations and the WTO ministerial meeting in Buenos Aires in December 2017 ended without any progress compared to the previous ones. In fact, the compartmentalization of each international organization prevents dealing with problems in a transversal manner, and the preeminence taken by the WTO has "encysted" them on ideological positions supported by technocratic barriers. This is also the case for the fight against climate change which is in an even harder position to escape from the primacy of international trade rules.

The fact that the Doha Round was labeled as the development round nevertheless compels key nations to adopt a very prudent attitude regarding a negotiation failure that is yet almost inevitable. No country wants, in the eyes of its public opinion, to be responsible for a definitive standoff. If an increasing number of voices are being heard to underscore the dangers of "*laisser-faire*" in agricultural issues, many negotiators keep exerting pressure to sell, one last time, the Doha Round conclusion on agriculture as the solution to all evils.

Common sense realities have even been rejected, such as the strategic importance of minimal food security through public stock management. This type of intervention has been strongly defended by India and G33 countries, pleading their right to assure food security for their population. Against the rethinking of the foundation of the WTO rules on agriculture, Europe might bear the full brunt of late reconsideration of international trade's actual bases. Its international credibility to promote cooperation and multilateralism is particularly threatened. In any case, if we do not act, the formula for failure is in place. Its advent is caused by a collective myopia fueled by the influence of ideologies and a guilty disregard from a wide majority of political leaders towards agricultural issues.

This is all the more detrimental since the radically new economic, political and strategic context pleads for a new European Union strategy in agricultural issues, as it is implemented by the world's major economic and agricultural powerhouses, such as the United States, China and Brazil. Independently of a profound shift in European policy based on a strategy that remains to be designed, it is thus urgent to initiate a new international cooperation on agriculture and food.

Today, this cooperation is quite inadequate since the international organizations involved in this major issue are many, but none of them has a federating function at the policy level. Among the FAO, the WTO, the World Bank, the IMF, the OECD, the UNPD, the WHO and many others, the global post-WWII institutional framework still prevails, at a time when the world has never been as multipolar with the forceful rise of big emergent countries.

It lacks a forum for dialog, prevention and management of crises that could anticipate their occurrences and implement an effective international cooperation. Price volatility, speculation and the determining factors we outlined above all require that a global Food Security Council—such as the United Nations Security Council—be created in the next ten years. The G20 decisions on agriculture in 2011 only represent a first step in that direction, which must be quickly surpassed before exit strategies and increase competition between nations could be concretized.

a. Priority to policies to secure production in key agricultural powerhouses

Except in Europe, agriculture has been playing a key role in governmental priorities due to the combination of determining factors:

- Beyond the turmoil and recession it generated in most areas of the world, the 2008 financial and economic crisis not only revealed the inability of markets to self-regulate, but more importantly the dangers of economic *laisser-faire* in financialized markets, such as agricultural markets.

- The repeated food crises that have occurred since 2008 in several regions of the world and the overrun of the critical threshold of one billion people worldwide suffering from hunger in 2009 have reminded all developed and developing nations of agriculture strategic significance and supply security in agricultural and food commodities, as for energy commodities.

- The debt crisis affecting most nations in the world is placing agriculture first among ailing economic sectors, and requires improving the added value of public intervention, as evidenced by the United States' decisions to improve its Farm Bill. Such effort has still not been made in Europe, where people have thought only of budget cuts at the expense of the search for new and more effective forms of support adapted to the specific nature of agriculture.

- The issues linked to climate change, fossil fuel exhaustion and more generally sustainable development are restoring agriculture to a strategic place in the design of solutions against these problems and the transition construction of productive systems.

The world in which these concerns are taking shape has totally changed compared to that prevailing at the end of WWII, and where the first *modern* agricultural policies were initiated–– the Farm Bill in the United States or the Common Agricultural Policy (CAP) in Europe. We now have more complexity, more market actors, more interaction, more uncertainty, more risks but also more opportunities for the countries that will know how to come up with the resources, given the demographic, economic, food and non-food challenges of the 21st century.

A long-term efficient management of agricultural policy tools to restrict the damaging effects of agricultural price hyper-volatility has thus become the crucial condition for the performance and competitiveness of farms, irrespective of the regions involved. The failure of the WTO successive negotiations on agriculture can be partly explained by the very low degree of initial consensus on the definition, perimeter and impact on trade of agricultural public intervention of each country. Meanwhile, most part of the failure can find its explanation in agriculture strategic scope which Member States are not willing to sacrifice on the altar of economic and trade justifications.

Agricultural issues cannot be reduced to simple trade considerations driven by applying the theory of comparative advantages. The security of supply, maintaining political land social

balance in addition to the growing significance of climate change are as many reasons that give agriculture a specific status that is often considered by heads of states as directly relevant to national security.

In such context, it is crucial to identify and compare the strategies carried out by the world's major economic and agricultural countries to recognize preferable development trends, allocated means and implemented support procedures. Such an analysis is vital to have a better idea of tomorrow's key agricultural powerhouses and anticipate the development dynamics to best position the ongoing debate regarding the CAP evolution.

The SGPAA (*Global Support to Agricultural and Food Production*) indicator designed by Momagri sheds an interesting light on the issue. It assesses the reality of direct and indirect support actually provided to agriculture and food by major nations, thanks to the creation of an appropriate classification. All public support expenditures allocated by the United States, Brazil and China have increased since 2008, at a speed significantly higher than the rates of population growth: +154% for China, +55% for Brazil and +47% for the United States. Only the European Union is posting expenditures that declined by 18% between 2008 and 2015.

Per-capita SGPAA, 2008-2015, in US$
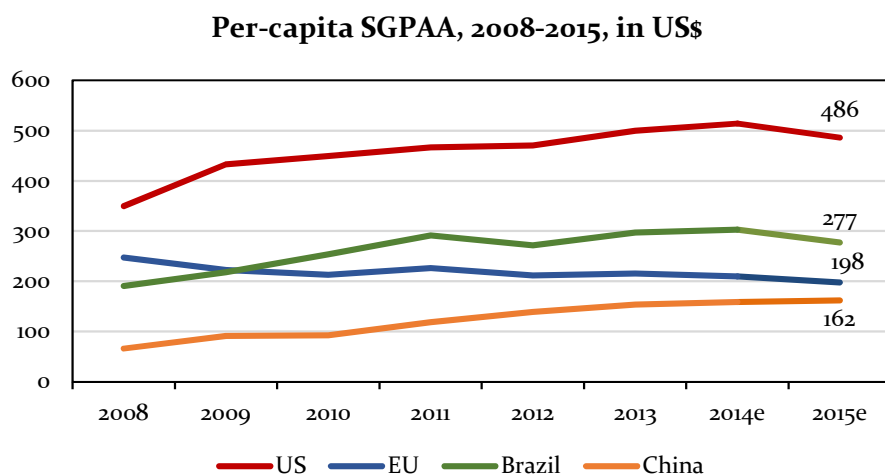
Source: Momagri

The United States
A double system of agricultural production security and strong food policy

Between 2008 and 2015, US public support rose by $50 billion to $156 billion from $106 billion. This increase in support is mostly explained by the expansion of domestic food assistance, market reorganization and the development of new activities via supporting biofuel production notably. A safety net guarantees farmers' incomes and/or margins, thanks to counter-cyclical payments and subsidized insurance systems. The last reformed Farm Bill of 2014 has boosted these support programs and eliminated all types of decoupled support. Per-capita public support equals to $486 in 2015, a 39% increase compared to the 2008 figure. Compared to the total value of agricultural output, it accounts for 40%.

Brazil
A proactive policy to support national production and
promote the demand for food and non-food products

Between 2008 and 2015, total Brazilian support to agriculture increased by 55% to US$56 billion from US$36 billion. This increase is essentially explained by higher support to biofuels, market interventions through auctions and investment subsidies via the *Programa de Fortalecimento da Agriculture Familiar (PRONAF)* dedicated to family farming financing. Per-capita public support amounts to US$277 in 2015, a 44% increase over the 2008 value. Total support represents 31% of the total agricultural production value.

China
An interventionist policy to secure economic and rural balance

Between 2008 and 2015, public support increased by 154% to US$224 billion from US$88 billion. This upsurge is mainly due to raising production-coupled subsidies, support to agricultural productivity, and infrastructures and rural housing. One should note that the implementation of domestic price support for most field crops (wheat and rice) represents one of the pillars of public support to agriculture. Compared to the population size, public support totals US$162, a 145% increase compared to what observed in 2008. In proportion to the total agricultural output value, it accounts for 23% in 2014.

European Union
A gradual generalization of decoupling subsidies with counter-productive impacts

Estimated at US$100 billion in 2015[6], European public support within the PAC or national policies records an apparent decline of 18.7% since 2008. In fact, some subsidies have been widely cut since 2008, particularly due to the diminution of the agricultural budget and the transfer of funding from national sphere to European level. These reductions have mostly been made to favor decoupled payments and "green payments" even though coupled support seems somewhat to come back from 2015. Per-capita public support equals to US$198 in 2015, a 20% drop over the 2008 level. Public support accounts for 21% of the total agricultural production value.

The overall evolution of public support allocated to agriculture reflects the economic and strategic importance it carries for the United States, Brazil and China. Its increases are continuous during the period considered at a speed higher than the rate of population growth, expressing these countries' strategy and will to stimulate domestic demand through assistance to the most vulnerable people and biofuels production.

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[6] CAP budget + budget of Member States

**Evolution of per-capita public support to agriculture and food
(in % and US$) between 2008 and 2015**

| Per capita support 2015 | $162 | $272 | $486 | $198 |
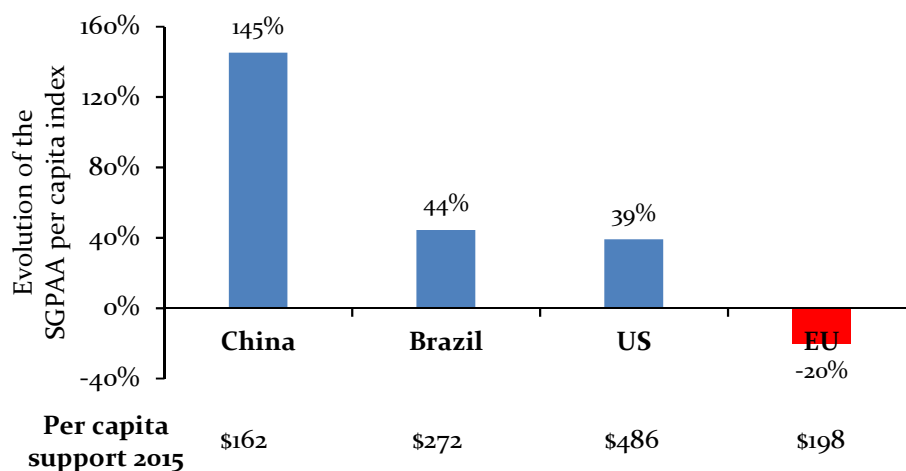
The growing trend of support in emerging powerhouses––Brazil and China––deserves to be underscored. While the Brazilian per-capita support amounted to $189 in 2012 against $207 in the EU, it has largely exceeded the European level in 2015. On the other side, if support growth continues in the recent pace, the per-capita public support to agriculture and food in China could reach the same level as that of the European Union as early as 2017, while the living standard in purchasing power parity is three times smaller in China.

Beyond these global changes, the analysis of support provisions and favored development lines can show us interesting and useful trends in the future debates on Common Agricultural Policy reform.

b. *The new Farm Bill*

The American agricultural policy––referred to as the Farm Bill––is a clear demonstration that agriculture plays a strategic role in the United States. Adopted on February 7, 2014, the new Farm Bill is the successor of the American agricultural policies initiated in the 1930s, which recognize that, if left on their own, agricultural markets cannot ensure sustainable agricultural development and food security.

Primarily focused on production and farms' economic health, the Farm Bill has, for almost a century, been responding to the chronic market instability and the damaging effects of climate hazards. The reason for this is simple: Market and production risks bring about irreversible consequences to the production potential. It is true that producers subjected to severe and recurring price volatility cannot develop their activities, or even have to stop their production. Similarly, through the combination of diversified mechanisms, the revenues of American farmers––especially grain producers––are supported and stabilized around reference prices set by law.

The new Farm Bill also confirms the American pragmatism: If a mechanism is no longer pertinent, it is discarded. This is what happened to decoupled direct support in favor of a shift toward systems guaranteeing a certain level of income or price (depending on support choice), i.e. support coupled to production and markets. As another incongruity for the Europeans, the $956 billion budget authorized for the next ten years offers important flexibility since it can be overspent if needs are. We are indeed very far from the European budget practices, which set a multi-annual package that cannot be exceeded!

Apart from programs involving domestic food aid and support for biofuels that secure the outlet for a portion of American agricultural production, and thus ensure a form of regulation, US legislators focus on risk coverage through Title I and Title XI. This way, what is broadly called an insurance program––close to 70% of budget expenditures apart from domestic food assistance––is becoming the cornerstone of the support system.

The term covers a complex reality, which combines counter-cyclical payments and insurance policies. The first kind of support provides coverage against price risks, while the second also protects against climate hazards. Sometimes opposed by certain observers, the two forms of public intervention are complementary. In fact, the development of insurance schemes is the result of a strong commitment from public authorities (average premium subsidies of 60%, premium definition by a federal agency, public reassurance, etc.). We have observed in recent years, however, the Federal government's willingness to reduce the funding of revenue insurance. This is due to the limited efficiency of this instrument in supporting agricultural revenues in durable low prices and the insurers' margins considered as excessive. In 2016, over a $5 billion budget, only $300 million are estimated to be the net claims (claims minus insurance premia paid by farmers). Around $4.7 billion stayed therefore in the hands of insurers[7].

Moreover, like insurance schemes, the choice to participate in different countercyclical measures has become more and more a matter of farmers themselves.

The key titles of the Farm Bill

Close to 99% of public support is allocated to the four following Titles[8]:

  - Title I "Commodity Programs" include the free insurance safety nets that are known as "Marketing Loans", "Price Loss Coverage (PLC)", "Agricultural Risk Coverage (county ARC and individual ARC)". Their budget allocation totals over $44 billion.

  - Title II "Conservation", with a $57 billion budget for environmental stewardship, bearing a reduction in the number of programs to 13 from 23 and a 1% budget cut.

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[7] For more detail, see http://www.momagri.org/UK/focus-on-issues/Futures-markets-and-income-insurances-are-not-substitutes-for-public-regulations-2-3-_1912.html

[8] The 2014 Farm Bill includes 12 Titles.

- Title IV "Nutrition" maintains close to 80% of the total budget with $756 billion (a $8.6 billion cut). Emblematic program, the Supplemental Nutrition Assistance Program (SNAP) is much more than food assistance. It is also a plan to ease market sales, since food purchases by Americans involve over 90% of the national production.

- Title XI "Crop Insurance" with an allocation of $89 billion, supplements the Title I that protects farmers from market instability and input price volatility. The Supplemental Coverage Option (SCO) and the Stacked Income Protection Plan (STAX) are among the new insurance products whose premiums are subsidized.

The Farm Bill main programs against market risks for grains and milk

1- The Marketing Assistance Loan Program represents the basic safety net for most field crops. Set at $108/t for wheat and $77/t for corn, farmers are guaranteed to get these prices, especially through the counter-cyclical subsidies that are called loan deficiency payments. Above this safety net, grain farmers can choose between two types of counter-cyclical programs––the PLC and the ARC.

2- The Price Loss Coverage (PLC) grants subsidies to cover the difference between market price and reference price. The latter thus serves as a floor price. The latest Farm Bill has significantly increased reference prices, for instant +32% in wheat price to reach $202/t. The following table resume the reference price for principal products:

PLC program reference prices, $/t

Corn	146	Barley	227
Soyabean	309	Oats	139
Wheat	202	Peanut	535
Rice	309	Sunflowerseed	444
Sorghum	156		

Payments are made on 85% of the referenced production volumes, and referenced acreages and yields are set on the basis of historical records. In addition, the 2014 Farm Bill offers the possibility to update these references.

3- The Agriculture Risk Coverage (ARC) also falls in the category of counter-cyclical support. Unlike the PLC, payments are made to offset a drop in turnover but only partially: Subsidies are capped at 10% of referenced revenues. The Olympic average for the past five years is used as reference at the individual or county level. If market prices are lower than the reference ones, the PLC reference quotations will be used to compute the revenue.

4- Revenue insurance plans involve different types, depending on what is taken as reference triggering the protection. Variables for consideration are individual crop revenue (Revenue Protection), county's yield (Area Risk Protection), or actual revenue of the whole farm (Whole Farm Revenue Protection). The first two programs are the most developed. With the payment of a subsidized premium at about 60%, farmers can cover 50 to 85% of revenues based on a price

equivalent to the maximum between forward prices at the time of sowing and the forward price at time of harvest.

Between PLC, ARC and revenue insurance programs, the performance of insurance coverage depends on multi-annual price variations. If the PLC is not affected in cases of declining prices, the advantage of ARC is progressively reduced as the average revenue declines and due to the 10% of referenced revenue threshold, while the revenue insurance program will provide no relief in cases of depressed markets over several years.

5 – Regarding milk, the latest Farm Bill introduced the Dairy Producer Margin Protection Program (DPMPP), a counter-cyclical program that is triggered according to changes in the theoretical gross margin of dairy farmers, computed as the difference between the selling price and the cost of a fodder ration. Access to this program is voluntary: For $100, each farmer can get coverage for a minimum $80 per ton of milk in theoretical gross margin, and for an approximate $23 per ton, coverage can reach $160 per ton.

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Already endowed with vast competitive advantages––farm acreages, access to all forms of innovation and an adapted tax system––American agriculture seems to be well prepared to confront the intrinsic volatility of international markets and negotiate a free-trade agreement with Europe.

c.   *The reinforcement of Chinese agricultural policy*

By reinforcing its agricultural policy, the Middle Empire has been recalling into question the major part of economic development theories. These theories always consider the primary sector a hindrance to development that can be overcome by pushing agricultural prices down so as to transfer the available labor force to other sectors and reduce labor costs, which could be beneficial for a later industrialization. Meanwhile, China has proven the opposite by showing that its economic development has also been based on a strong agricultural and food policy to guarantee its food security and socio-economic equilibria between rural and urban areas.

That is what the evolution of support policy for rice and wheat has approved. The support prices effective in China are reproduced in the table in the next page.

As can be seen in the figure which follows the table, wheat support price has gradually been raised, hedging the domestic market against both the 2007 peak and the international price drop since 2014. The support prices average around $360/t for wheat and more than $400/t for different types of rice. The corn policy registered a reform in 2016: domestic price is reduced to

around $240/t in order to slightly curtail output and stock while a direct payment is installed in certain areas[9] to offset this cut.

Support prices in China for principal grains, $/t

USD/t	Rice			Wheat	Corn
	Early Indica	Mid to late Indica	Japonica		
2013/2014	420	430	478	357	355 - 362
2014/2015	430	442	496	367	355 - 362
2015/2016	435	445	500	372	314
2016/2017	404	420	471	360	n.a.

Wheat support and market prices in China, CNY/t
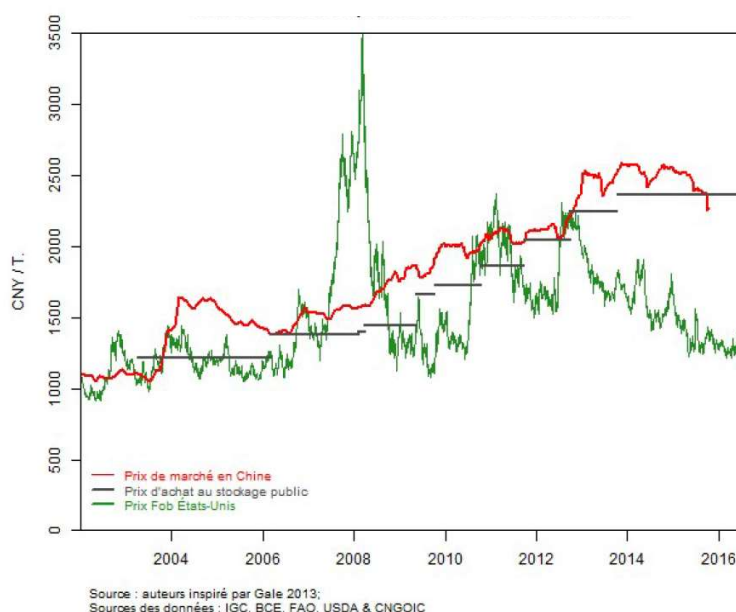
Source : Courleux F. and Depeyrot J.N. (2017)[10]

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[9] See this article http://www.momagri.org/UK/focus-on-issues/China-s-corn-policy-reform-Adjustment-or-dismantling-_1799.html

[10] F. Courleux and J.-N. Depeyrot « *La Chine, le nouveau stockeur en dernier ressort après les Etats-Unis* », in G. Allaire, B. Daviron, « *Transformations agricoles et agroalimentaires : Entre écologie et capitalisme* », Editions Quae, « *Synthèses* », 2017, p.81-99.

d. *Europe is now alone to favor decoupled support*

Comparing the various agricultural policies implemented in the four countries examined and their evolution since 2008 shows sharp differences, in terms of both the public authorities' approach to support production chains and their allocation procedures.

The United States, Brazil and China all have support and regulation mechanisms for agricultural production and income through production-coupled subsidies (adjustable according to international prices for some of them), or direct market interventions on supply and demand. Moreover, there is indirect support to promote the sale of national agricultural production, such as stimulating insolvent demand with public domestic food assistance or biofuels production. Classified in the amber category according to the WTO nomenclature, production-coupled support is growing rapidly in Brazil and China, and remains one of the pillars of the American agricultural policy with counter-cyclical coupled payments, whose economic and budgetary effectiveness in volatile markets no longer requires any validation.

The European Union is therefore the only entity to base its agricultural policy on support decoupled from production with environmental constraints--classified in the WTO green box-- in line with the WTO recommendations. The European Union agricultural strategy thus widely differs from those implemented by other major economic and agricultural powerhouses. Consequently, it leaves the European agriculture to suffer from price volatility, a major risk against which no appropriate instruments have been proposed by the EU.

Comparison of decoupled payments' share in global support in 2015
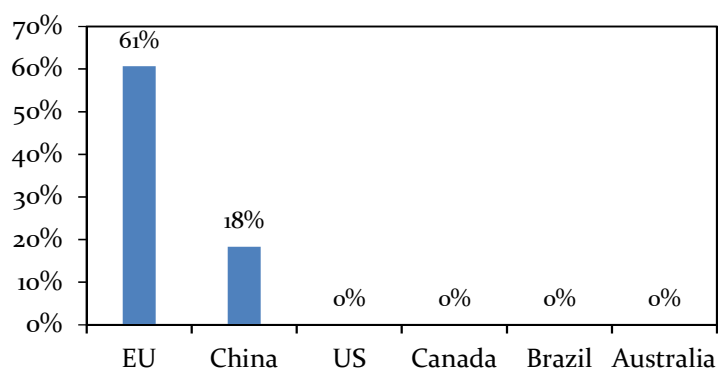
Source: Momagri

3. A major risk to be contained: Agricultural price volatility

a. *Albeit structural, agricultural price volatility is increasing*

To implement the economic policy best adapted to agriculture, it is crucial to identify the risks to which the sector is exposed. Until recently, most international experts and decision makers considered that agricultural price volatility was caused by the sole existence of exogenous or natural hazards, such as epizootic diseases or climate conditions.

Yet, these risks, which are by definition independent from market agents' behaviors, should be mitigated by the liberalization of international agricultural trade. The latter acts as a risk-pooling agent at the global level, as a climate event cannot affect all regions in the world simultaneously and abruptly. However, while trade liberalization has been going on for several decades, the volatility of agricultural commodity prices has not declined, quite the contrary.

The graph below depicts the evolution of wheat price volatility since 1704 measured in number of standard deviation. It should be noted that the frequency and magnitude of volatility regularly increased since the early 2000s.

Evolution of monthly wheat price volatility since 1704
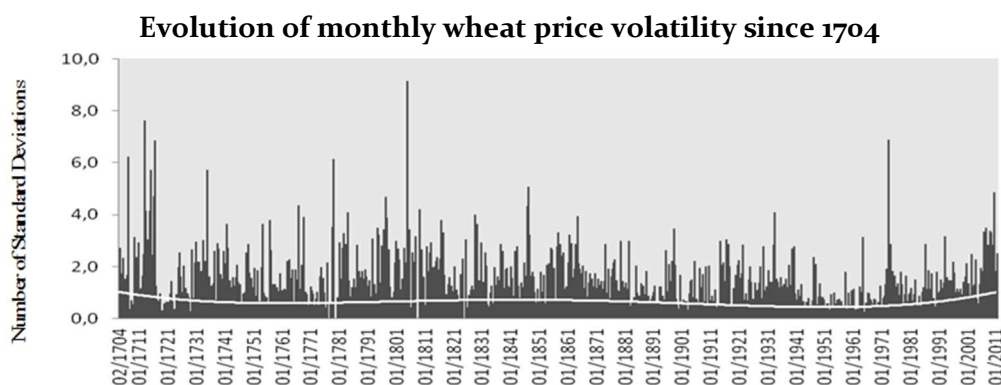
Source: Philadelphia and Chicago exchanges, Calculation: Bertrand Munier - Momagri

This graph shows that agricultural price volatility is historical and structural, and the risks confronting agricultural markets are multiple. Factors that explain price volatility––climate and epizootic diseases for instance––do not in effect come from outside of the agricultural markets but represent an intrinsic component of price volatility.

Picking up the distinction made by J.M. Boussard, these risks can be classified as endogenous, as opposed to exogenous risks. They relate to market agents' expectation errors, mimetic events as well as, to some extent, the existence of irrecoverable fixed costs that restrict the adjustment ability of supply to prices.

The key problem stays in the fact that such instability sources are seldom or never modeled, neither assessed nor precisely quantified by commonly used models at the international level–– OECD, World Bank, FAPRI, etc. The result is a misunderstanding of the market mechanisms at work to effectively explain the causes of volatility.

The following figure shows evidence of highly chaotic evolution of wheat price over the period 1990-2016 (black line). Still, the ten-year price projections have always been systematically linear and stable (colored lines).

Momagri thus strives to integrate the characteristics that underlie price variability in a projection model––the Momagri model––to provide the authorities in charge of agricultural policies with a more realistic decision-support tool. The Momagri economic model is designed to simulate agricultural price volatility in world markets by modeling various exogenous and

endogenous factors of risks to which these markets are exposed. It evaluates the impact of various economic policies on price volatility, particularly that of total or partial liberalization of agricultural markets[11].

Regardless of the tested scenarios, the results are irrefutable: Unregulated trade liberalization (total or partial) goes hand in hand with an increase in the volatility of agricultural commodity prices, contrary to the linear and steadily rising projections released by the World Bank and the OECD.

Projections of prices disconnected from reality
The example of wheat international prices ($/t) from the Aglink model (OECD)
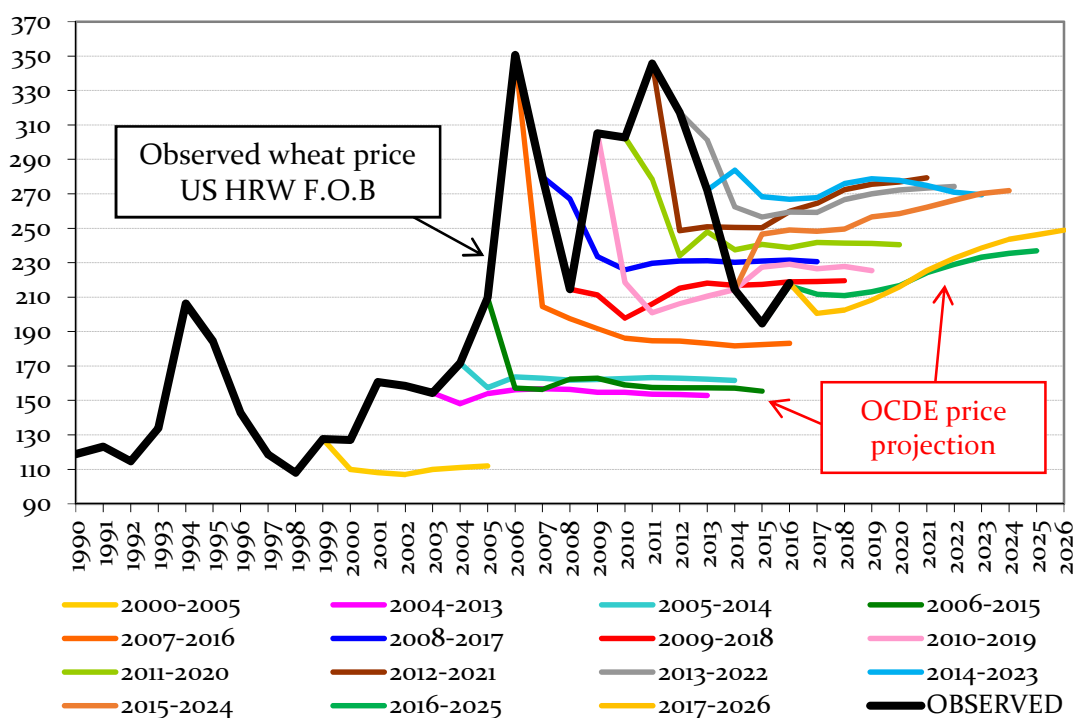
Source: OECD, IGC
Formatting: French Ministry of Agriculture, CEP

b. *Volatility has intensified with the financialization of agricultural markets*

Since the early 2000s, agricultural markets has registered a financialization process characterized by:

1) An increase in trade volumes and open positions in futures markets. For instance, open positions on major commodities at the Chicago Board of Trade multiplied by the factor three between 2003 and 2010. In 2008, across worldwide agricultural commodity

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[11] For a complete presentation of the model, see Munier, B., 2010. "Boundedly rational exuberance on commodity markets". Risk and Decision Analysis, 2(1), pp 33-50

markets, the annual volume of transactions of wheat and maize equals respectively 8 and 15 times the global production in 2010.

2) In addition to regulated marketplaces, OTC transactions have been expanding outside of any prudential framework at the expense of transparence and protection against counterparty risks.

3) Among various types of futures market users, the share of commercial operators is declining––they hold less than 25% of open positions. While the presence of institutional investors is needed for liquidity purposes, their dominance in terms of open positions and especially volumes disrupts price formation, since their decisions are more motivated by considerations that are unrelated to the fundamentals of agricultural markets.

4) A new group of investors appeared in the mid-2000s: The index funds. Contrary to other speculators, they basically take long positions to profit from rising prices. These funds are used as diversification strategies against inflation impacts on investment portfolios. Account on their own for up to 30% of open long positions, they amplify the hikes of price.

5) Since the end of the 1990s (Enron scandal), electronic trading has upset price formation and allowed the influx of new trading techniques, such as high frequency trading.

6) Futures markets have become the price reference for major agricultural commodities due to the absence of spot markets. All market actors must take these price changes observed in reference markets as given.

7) The supervisory framework deregulation observed since the 1990s in the United States––home to the most active marketplaces––partially explains these changes. The regulation of agricultural commodity futures markets was built in the 1930s in response to observed shortcomings, and did drastically curb the use of options and also impose restrictions on the number of positions held by an operator (position limits).

The first graph in the following page represents evolution of prices (in red) and open positions on the Chicago corn futures market since 1998. Open positions are broken down by types of parties involved. Commercial operators are shown in orange, and index funds in green (these two categories were not separated before 2006). Open positions reached 2.5 million in 2010, from 500,000 contracts in the early 2000s.

Consequently, the continuous financialization of agricultural markets has led to a fundamental change: Agricultural products are now considered as a group of financial assets like any others. Given the small size of agricultural commodity market capitalization, such connection to the financial sector cannot but increase the volatility of agricultural markets, which are already structurally unstable. The financialization of agricultural markets also results in growing

correlation between commodity prices and other financial assets exhibited in the second graph below by the Standard & Poor's 500 Index.

Evolution of open long positions on corn contracts at the Chicago Board of Trade
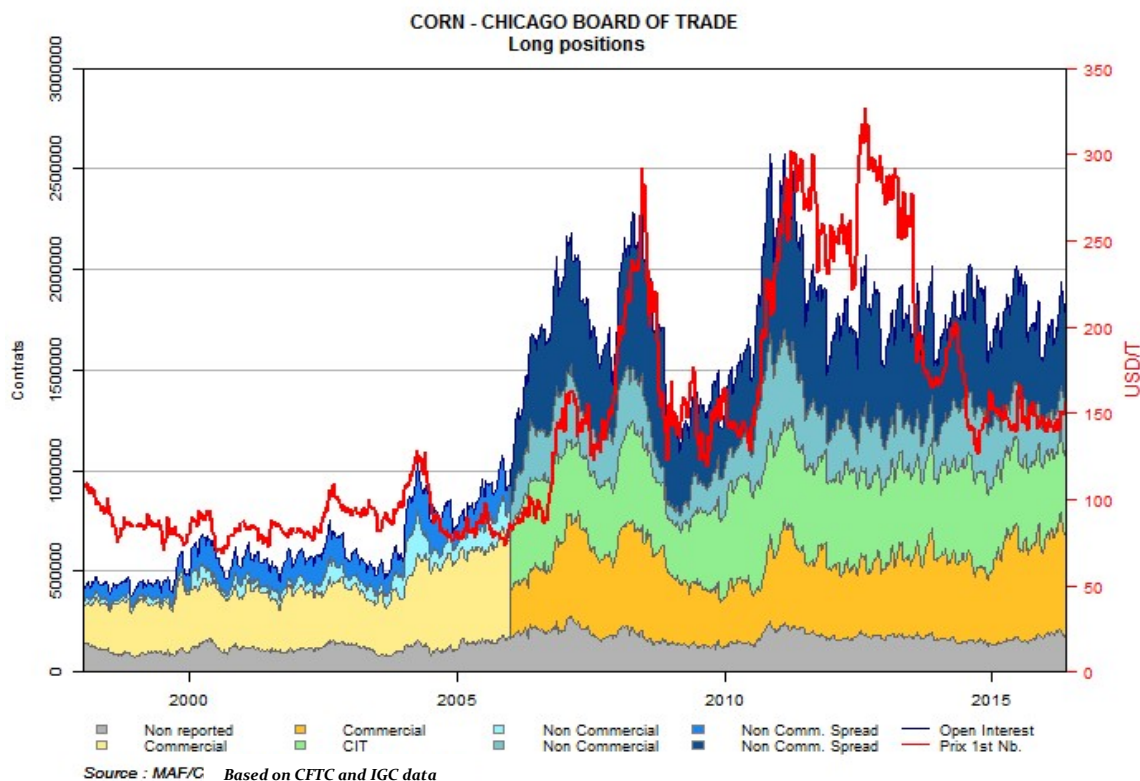
**Evolution of price correlations
between different types of commodities and financial assets**

Source: Ohana et al., 2012.
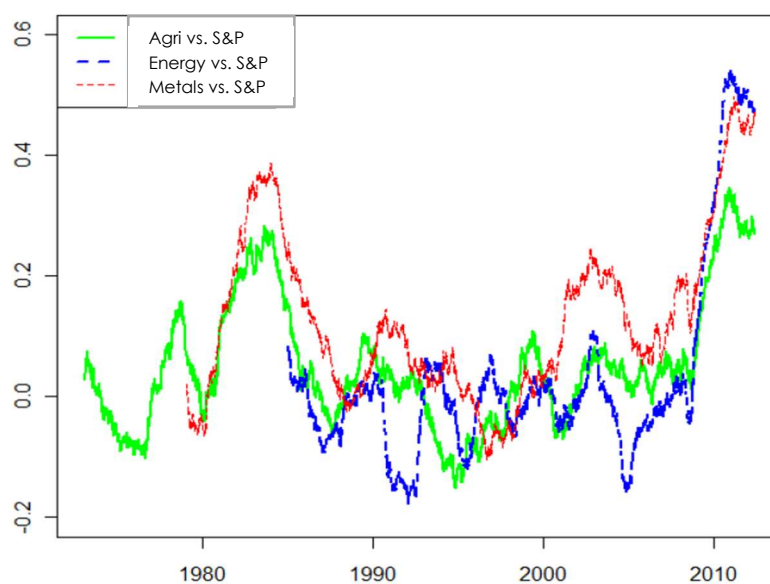
Lastly, while the financialization of agricultural markets cannot run counter to market fundamentals – demand-supply equilibrium, it could engender a hyper-sensitivity in price formation and growing market instability. The possibility to use necessary vehicles to smooth out the supply adjustment to demand is thus required to avoid excessive variations in agricultural prices and incomes. Under these conditions, futures markets will still be useful instruments for real economy by offering optimization solutions to sectoral functioning. It is therefore important to reinforce the financial market supervision so as to improve price formation, enhance transparency and reduce counterparty risks. In the United States, the 2010 Dodd-Frank Act is a step in that direction by strengthening the prerogatives of the financial regulator––the Commodities Futures Trading Commission. In Europe, the Barnier directives, whose application measures are not totally implemented yet, will enable the Old continent to partially catch up with the United States.

c. _Unregulated trade openness aggravates the situation_

Trade openness is a stabilizing factor of agricultural prices to the extent that climate conditions offset one another at the global level. This is an application of the law of large numbers. There is in some ways a large-scale pooling of risks. Unfortunately, there exist other destabilizing factors of agricultural markets––the endogenous risks––that tend to be reinforced in cases of unregulated trade openness.

As a result, agricultural markets fail to deliver the equilibrium price, as conceived in the law of supply and demand. This equilibrium price must correspond to the marginal production cost, i.e. the production cost of the least competitive producer but necessary to meet demand. In these circumstances, international markets are showing a trend of alternating periods of depression, when prices are close to costs in countries with the most effective producers, with (shorter) periods of tensions on prices, when production systems and reserves have been destabilized by periods of depression.

Agricultural prices do not therefore vary regularly around their equilibrium level which is the marginal production cost but follow cycles characterized by "brief peaks and large troughs". Imagine after a food insecurity period, high prices stimulate the production recovery—new investment, new sewing areas—which will then drive prices down. However, face to low prices, farmers have no intention to trim their production. This is the asymmetric answer of supply to price: supply reacts strongly to high prices but significantly less to low ones.

It is a fundamental characteristic of agriculture economics. Farmers do not cut their output in low price not because they are autist against market signals, but due to the fact that they do not have any interest in doing so. The reason for this lies in the association of two principal particularities. On the one side, farmers are numerous and so dispersed that it is not possible for them to see impacts of their own price setting. On the other side, their production cost structure is similar to that of a heavy industry since it would be better to continue to reduce fix costs by producing at technical optimum. Besides, farmers' ability to tolerate weak compensation from production factors mobilized also explains the feeble reactivity of supply to low price.

The combination of these features is also the basis to justify public intervention in agriculture. Agricultural policies are carried out to facilitate supply-demand adjustments and protect economic agents against erratic movements of agricultural prices. While population growth is an undeniable fact, it does not call into question the erratic functioning of agricultural markets, where a slight surplus can sink prices below production costs for a vast majority of producers, and so long as the adjustment is not accompanied by the public authorities.

Furthermore, when prices do not fluctuate regularly around the production cost level, insurance schemes, futures markets or poolig funds are only instruments of little efficiency to help farmers. Market risk is by nature systemic, i.e. it affects all producers at the same time. Thus, market risk cannot be hedged by mutualisation. Insurance against economic risks can be proposed when insurers themselves could be covered on futures markets. Nevertheless, the coverage might not be different from observed price: if price is durably low and stable, coverage level will be also low and no claims can be paid. Similarly, the number of price peaks are so small that pooling funds can hardly collect sufficient contribution from farmers. These tools should not be wiped out but they must be associated with public instruments to become truly useful.

Agricultural markets are consequently not as efficient as characterized in the market general equilibrium blueprint where supply-demand adjustments are realized through price. These economic analyses are not new but have been studied during at least three centuries as the history of economic thoughts reminds us[12]. They were regarded as mainstream all over the world until the end of the 1980s, including in the US where the Farm Problem theory authors were nominated advisers to agriculture minister at that time. Let's act so that the parenthesis of the agricultural market efficiency doctrine, still prevailing in Europe, were closed as fast as possible.

Following almost a decade of high prices, the prospect of seeing agricultural markets engulfed in an overproduction crisis must trigger a better governance and coordination of agricultural and regional policies, so that we could continue to benefit from the partial stabilizing agent represented by trade openness.

It is therefore vital that Europe, proponent of a multipolar world, turn its back on the choices made in early 1990s and reconsider the decoupling principle that it is the only one to pursue. This is even crucial for the survival of the Union. By still believing in an international trade conception dated in the 1990s, the EU will become a political dwarf on the international stage. And by still reckoning on auto-regulating and efficient markets, it will continue to show off its incapability to manage agricultural crises and secure the farm transition, which will breed growing resentment towards the European construction.

Unfortunately, according to the Commission communication on the CAP reform perspectives for the 2021-2027 period, presented by Commissioner Hogan, it is obvious that the European Union is continuing its tragic course.

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[12] See Boussard, J.M., 2017, *Les prix agricoles*, « Nouveau dialogue sur le commerce des bleds », L'harmattan.

Part II
Reshaping the CAP for 2020:
The Momagri-CAP project

1. The 2014-2020 CAP misses the point

The Summit of Heads of States and Government on December 19, 2013 of the 27 nations ended on a lackluster note regarding the Multi-annual Financial Framework:

- €960 billion (2011 value) for commitment appropriations (CA), or 1% of the EU GNI.
- €908,4 billion for payment appropriations, or slightly less than €130 billion a year.

This decision reflects a 3.4% drop compared to the 2007-2013 period, or €34 billion in CA. The CAP records the largest cut, since the CA package is reduced to €373.4 billion from €420.6 billion over the 2007-2013 period, equivalent to a 12.6% decline. Structural funds, for their part, decrease by €30 billion, or -8.5%. All other European policies increase by €44 billion, or a 20% upsurge, including mainly those for economic growth and competitiveness (+37.4%). Admittedly, this agreement is only the window dressing of a contingency compromise.

The absence of political willingness to significantly increase the EU budget, which is already as small as 1% of annual European products, has created so strong impacts because at the same time the intervention fields at European level are about to be expanded. Hence, this budgetary compromise does not provoke any inspiration since it is coupled with the absence of the rethinking of the current agricultural policy orientation. The latter has chosen to buy social peace by granting per-hectare support to, badly or partially, offset the effects of the market deregulation that it has carried out. As regulation always costs less than loss relief, it is convenient to imagine that the desire to redeploy such a tenuous budget should be realized through a reconsideration of the market deregulation approach. However, this is not the case. Europe has banned itself both from protecting its domestic market and from self-equipping with means to counterbalance the consequences of international market chaos on the most vulnerable part—the agricultural production. What a contrary to the other big countries which conduct ambitious agricultural policies!

Following the April 2010 public forum on the future of the CAP initiated by Commissioner Dacian Ciolos that tended to revive the debate on the status of agriculture, the Commission set out three key challenges for the CAP reform:
- Food security,
- Territorial balance,

- Environmental protection and climate change.

It also stated precise objectives in order the address these challenges:
- Contributing to agricultural incomes and curbing income variations,
- Improving the agriculture competitiveness,
- Compensating the regions subjected to specific natural constraints,
- Guaranteeing the implementation of sustainable production practices,
- Promoting environmental-friendly growth through innovation,
- Pursuing climate change mitigation actions,
- Supporting employment and preserving the social fabric.

While such goals seemed quite pertinent, the instruments suggested during the negotiation do not allow reaching them. This is in particular because no solution is proposed to resolve the problem, albeit central, of the structural volatility of agricultural commodity prices. Without mechanisms to regulate price instability, which has devastating effects for farmers and agribusinesses, the above-mentioned objectives will not be fulfilled.

The convergence of a portion of direct support between new and older Member States was an expected political gesture. To make sure that this convergence is fair, its application should take into account the specific features concerning production conditions and discrepancies in social and monetary systems.

The posted objective of greening 30% of support in the 1st Pillar to maintain the agricultural budget is a dangerous illusion that might endorse the rhetoric of those advocating a restructuring of the CAP into a policy reduced to the sole environmental component.

At a time when Europe's competitors are striving to increase their production, this measure raises the double issue of its impact on the reduction of European agricultural production and the competitiveness of European farmers. In addition, when all market actors are demanding a simplification of the CAP, there is a considerable risk of increasing the procedure burden and bureaucracy. One only has to see the difficulties and complexities of the decision making process at national level to have an image of a "disconnected" policy which is inefficient to really accompany the transitions of the agricultural production systems.

Yet it will be necessary in the future to admit that farmers are the first to be involved in environmental protection, and that they have undertaken significant efforts to lessen the impact of their practices on the environment for more than two decades. Without farmers, who will take care of our land? Land conservation is thus primarily done through greater economic safety for farmers. How is it possible for farmers to take the risks of practice changes to be more environmentally friendly when their own farm survival is threatened? The reinforcement of environmental requirements towards agriculture is not compatible with the agricultural policy deregulation.

An annual reserve of €430 million[13] for crisis management seems quite paltry already, but up to now, it has never been used while several crises have shown up. Supposed to serve as a safety net activated in case of strong market disturbances, it can only play this role if it is built on efficient crisis prevention and management tools. Yet, public intervention possibilities have been reduced again: suppression for durum wheat and sorghum, optional for beef, barley and maize, maintained at very low levels for common wheat, butter and milk powder.

Under the pressure of events, in this case the explosion of the milk powder intervention upper limit, the Commission has accepted to reconsider its works as soon as 2016 to solve the milk sector crisis. By applying Art. 219 of the OCM regulation, it was possible for the Commission to implement a voluntary support for milk production reduction. This unprecedented measure was much congratulated since it succeeded in curbing output and thwarting processors' strategies, even if according to some people this measure should have been more efficient if it had been activated sooner as the accumulation of a huge stock of milk powder could have been avoided.

In spite of this success, the Commission does not seem to be open for a rethinking of its risk and crisis management strategies. Private risk management tools (insurance, futures markets, pooling funds) have always been promoted while it has been well demonstrated that while these tools are efficient if prices vary regularly around the production cost level, it is not the case if prices follow cycles with "brief peaks and large troughs". The second conception of market functioning is however closer to what observed in the reality.

Obviously, unless there is a strong recovery of agricultural prices following a severe climate incident or intense geopolitical tensions, it is difficult to see how the current European compromise, based on decoupled support and private risk management tools with quite moderate efficient, can resist against the multiplication of crises in the continental agricultural sectors.

2. The CAP in a strategic dead end

a. *The end of a dismantling process*

The latest reform of the CAP, which covers the 2014-2020 period, is the product of a process started in the early 1990s––the decoupling of public support to agriculture. Originally based on fixed or slightly variable guaranteed prices, which were on average higher than international ones, the pre-1993 CAP allowed for adjusting domestic supply and demand through the use of various instruments, such as variable customs duties, public stockpiling measures (intervention purchases), supply controlling procedures and export subsidies.

Following the 1993 introduction of direct support and its progressive decoupling until its conversion in payment entitlements independent from production, the successive reforms of

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[13] Constant Euros

the CAP gradually dismantle regulation tools and increasingly expose European farmers to international markets. Decoupled direct support, firstly linked to historical references then to farm acreage, are supposed to support farmers' income while having no impact on production and thus on trade (non-distorting in the WTO sense).

By doing so, the European Union abandons it responsibility to stabilize agricultural markets, an objective that nevertheless figures in Article 39 of the Treaty on the Functioning of the European Union (TFEU). It also prefers to buy farmers' social consent by granting them decoupled subsidies, thus calling on them to follow "market signals", no matter which fluctuations they are subjected to. As a result, intervention stocks, export restitutions and production quotas are disappearing. The multiplication of quotas on duty-free imports handicaps even more a weakening custom protection (cf. the free trade agreements under negotiation).

The instigators of decoupling have already written the next phase of reforms since early 1990s under the name of "bond scheme"[14] scenario––the elimination of subsidies through the conversion of payment entitlements into fixed term Treasury Bonds. Direct income subsidies would then be removed as they become useless thanks to adjustment by markets that are free of all distortions created by public policies. In this vision of the world where markets are perfect, only subsidies enabling untradeable public good compensation—environmental protection, land conservation, social policy—can be justified.

Unfortunately, the reality of agricultural prices is there to remind us that agricultural markets are characterized with several failures that prevent them to be as efficient as they are wished to be. And the "bond scheme" scenario ran up against a fact that profoundly questions its rationale. It is now time to construct a new political project to replace a reform program aborted due to its collision with the reality. It took the Americans 6 years to reconsider the decoupling and less than two decades to completely cancel it out. In Europe, the decoupling logic was first carried out 25 years ago, how long would it take to realize the necessity of a rethinking of the current CAP corner stone?

b. *Major drawbacks*

The CAP reform does not resolve the strategic issues facing European agriculture. The post-2013 does not take any measure of the changes in other countries' political agenda after the 2007/08 food crisis and its repetition in 2010 and 2012. Consequently, we continue to weaken ourselves in front of giants with global agricultural ambitions like the US, Brazil, Russia, China and India. The attitude of the US against multilateralism or bilateralism must make us less naive, just like their agricultural policies which are more interventionist than ours in many dimensions. Many European farmers would like to receive the same advantages to those on the other side of the Atlantic.

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[14] Tangermann, S., 1991, *A bond scheme for supporting farm incomes*, in "The changing role of the common agricultural policy: the future of farming in Europe", Marsh, Green, Kearney, Mahe, Tangerman and Tarditi eds., pp. 93-101.

Given the strategic characteristic of the sector, we need to seriously review the founding principles of the CAP, and select effective public intervention measures to correct market failures and change the production systems by repairing the shortcomings that make the CAP inoperative or even dangerous.

Here are the main topics in question:

- Price instability and the crises it generates on major markets are not sufficiently taken into account;

- The decoupling of direct subsidies is wasteful in case of high prices which is referred to as the disengagement of public authorities;

- Prioritizing environmental and social objectives makes it impossible to reach these objectives without ensuring economic safety for farmers and removes Europe from the group of the world political powerhouses;

- The CAP is becoming a costly administrative structure that deals less and less with agriculture and is decreasingly common, which will deeply influence the European agricultural model.

b.1. Price instability and crisis management are not taken into account

The CAP totally ignores price instability while it is one of the structural components of agricultural markets. The resulting volatility has been heightened for the past decade, simultaneously with the withdrawal of public direct intervention in Europe and the development of excessive speculation on financial markets fueled by considerable movements of capital.

But excessive price fluctuations are extremely detrimental not only to farmers but to the economy as a whole. For some countries, agricultural policies still represent the means to fight inflationist pressures. Even in developed economies, the consequences of agricultural price volatility should not be neglected. The damage of market instability should be compared to the costs of stabilization policies to rationalize the snap judgments that are too often heard regarding these latter.

The observed price variations are going far beyond the "natural" adjustment of supply and demand. International prices may be lower than production costs for most farmers, and hamper an entire sector, since supply is particularly rigid in short-term for scattered producers that are able to sustain low remunerations for their work and capital. Conversely, abnormally high prices will result in inappropriate production choices for years to come, maintaining or even intensifying the instability which itself is the root of increasingly destabilizing speculation. Consequently, farmers are progressively losing their visibility, distorting their investment options and the integration of technical advancement.

If the first period of the CAP did promote production development and yield increase to that extent, it was just because it gave producers long-term visibility that enables them to modernize themselves and improve their productivity. In the end, consumers and the entire food chain

benefited from this policy of agricultural price stabilization which results in fact in progressive fall of agricultural prices. By dismantling this system for reasons primarily related to budget costs and more opening to competition, we have opened up the Pandora Box of devastating effects of price instability.

Worse even, European experts and political leaders thought as if markets were purely and perfectly competitive, and therefore had to be freed from any regulatory intervention to be able to express the price signals that mechanically lead to supply and demand adjustment. No other country in the world has engaged in such a denial of reality and scarified as many anti-crisis mechanisms.

In short, the European Union is totally exposed to price volatility. It is now urgent to offset this flaw through adequate mechanisms, especially with counter-cyclical payments, i.e. payments that vary according to the situation and is activated when prices are lower than a reference one. This is all the more critical since most of the EU budget is dedicated to decoupled subsidies whose economic utility is as low as it becomes costly.

b.2. Decoupling direct support ignores economic reality and conveys a disengagement of public authorities.

The 2013 reform is the continuation of the previous ones and confirms the respect of the support decoupling principle. While SPSs were eliminated at the end 2014 to be replaced by the new "basic payment schemes" (or BPSs), "greening payments" and "redistributive payments" for adhering countries, these types of support continue to follow the same principles and remain disconnected to production and even the markets.

Nevertheless, we could see a non-negligible breach be opened during the negotiation regarding the coupled support. In fact, while the latter had been about to disappear along the successive reforms, the final compromise of the 2013 reform resulted in the possibility of Member States to use up to 15% of their Pillar 1 envelop to finance sectors in difficulty or environmentally friendly. Consequently, we see that 20 Member States (with Scotland in addition) chose to use their entire allowed threshold to recouple a part of subsidies[15]. Should it be the beginning of the challenging of the decoupling? The share of Pillar 1 dedicated to decoupled support remains however important even though it has decreased to 81.6% in 2016 from 88% in 2014[16].

Initiated as early as 1993, the decoupling of subsidies was effectively implemented in 2003 and completed by the 2009 "Health Report". It is now in contradiction with the principles behind the creation of the CAP (Article 39 of the Treaty), i.e. the need to stabilize markets to guarantee the sustainability of production capabilities and supplies, as well as reasonable and stable prices for consumers. This CAP evolution totally ignores the upheaval in agricultural markets recorded since the early 2000s. On one side, farmers are more and more exposed to price instability, and on the other, the decoupling of subsidies leads to nonsense and waste. How to justify decoupled

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[15] http://www.momagri.org/UK/focus-on-issues/Application-of-the-2014-CAP-the-renewed-appeal-of-coupled-support_1936.html

[16] See http://ec.europa.eu/budget/biblio/documents/index_fr.cfm

payments when prices are high? Contrarily, what use is granting these subsidies when prices are low and when it is not enough to cover production costs for most European farmers?

Decoupling has become synonymous with the irresponsibility of European public authorities. By denying market realities, they have designed a disconnected, costly and ineffective system, distorted policy choices by introducing environmental and social objectives that contradict the economic imperatives increasingly confronting farmers. We can see the paradox here which is that most of the CAP budget is distributed without any connection to the agricultural price situation. It is then agriculture that has to adapt itself to markets but not the CAP!

There is also another paradox in advocating "market orientation" in agriculture, and at the same time installing a rent system. Because decoupled support has indeed all the features of a rent, which beyond expressing a disparagement towards production (one can get the rent even for doing nothing!), also provokes adverse effects damaging the sector competitiveness. As a result, on the one hand, the rent can be more easily seized postproduction through the selling prices of agricultural products. On the other hand, it contributes to artificially raise the value of some production factors like land—especially the farm asset value—but also the other production inputs like equipment, materials, seeds, etc. In this way, decoupled support increases production costs, which is detrimental to the sector competitiveness and thus contrary to the initial objectives.

b.3. *Greening and convergence are not enough to found a European agricultural strategy*

The greening—as high as 30% of the first pillar budget, the convergence of direct support and the redistributive payment for the first hectares do not constitute the axes of a reform that aims to ensure the food security of 500 million Europeans. This is particularly the case given the fact that in order to feed the world population, agricultural production would increase by 70% in the next 30 years. It seems that we are the only ones not taking the extent of this figure. We prefer to focus on peripheral issues for lack of ambitious strategic objectives.

The debate on convergence and greening has also contributed in overshadowing the issue of agricultural price volatility that is nevertheless at the center of policies in other major producing nations. The European Union departs from its trading partners as it no longer has specific measures adapted to the risks confronting farmers. So even if the prevailing talk insists on the fact that the European agricultural budget has been saved, it is nothing but an illusion. It is declining in constant prices, and its implementation will be constrained by both greening and convergence procedures. Let's not forget that, in the same time, our competitors are boosting their agricultural budgets and making use of counter-cyclical payments.

The greening of the CAP arises from the approach that wants to dissociate marketable production––which must be compensated only by the market––from production with environmental amenities––which can be financed solely by public authorities. In practice, this distinction is inoperative to design effective public policies, since these two types of production cannot be separated as they result from the same choices made by farmers. Liberalizing markets on the one hand and maintaining armies of controllers to "internalize the externalities" on the

other hand make no sense. The agro-environmental policy conducted since 20 years is a failure since, by ideology, we have not desired to be pro-active in the evolution and transition of the production systems.

Consequently, by handing marketable production over to the sole determination of supply and demand, we are building systems that pursue unreachable environmental and social objectives, since farmers cannot forgo the profitability of their agricultural production. On the one side, farmers are called to diminish their production cost to improve their competitiveness vis-à-vis competitors that do not have the same standards. On the other side, they are told to take risky actions by changing their practices which often results in extra costs hardly or not counterbalanced by public support. These instructions are inconsistent and explain the agro-environmental policy failure.

Eventually, by giving a growing prominence to environmental and social targets, the current CAP is losing. By not assuming its regulatory function concerning food production, the common policy abandons its fundamental purpose while averting its effectiveness in environmental and social issues by adopting an approach that dissociates the production of marketable goods from that of non-marketable products.

b.4. The CAP thus becomes a bureaucratic monument that undermines the European agricultural model.

The CAP is on a path of "becoming less and less common" due to the absence of common objectives in terms of food security, sectorial policy and integration strategy in a globalization that we suffer from more than we master. The re-nationalization of many decisions made in the name of subsidiarity cannot hide the CAP loss of direction. Because of the latitudes given to Member States in the subsidy convergence, the implementation of greening directives, the recourse of redistributive payments or compensations for natural drawbacks, not to mention allocation transfers between the first and second pillar, the CAP is now entirely relying on national choices. And in the future, if what Commissioner Hogan has said becomes true, a potential co-funding of Pillar 1 support would worsen even more these competition distortions between European farmers. While the CAP was conceived as one of the key components of the European project to reunite the regional population, does it just mean that the divergence of national applications of the CAP is the introduction of an opposing system for European farmers?

The CAP is on a path of "becoming more and more disconnected from agriculture" since it ineluctably leads to a transformation of the European agricultural model. In fact, farmers continue to leave the land as they can no longer earn a living from farming. The risk is that family farming is replaced by a financialized agriculture controlled by investment funds or agri-food multinational corporations. Food diversity and land management will be shattered without safeguarding Europe's food security and the competitiveness of agribusinesses that create employment.

The CAP inefficiency to resolve crises and stimulate the integration of environmental challenges undermines its credentials and de facto weakens its position in tradeoff debates. In other words, if the share of EU budget on agriculture regularly decreases, it is because the added value of the budget expenditure seems low in respect of the serious shortcomings of the CAP. The attempts towards greater re-nationalization as a sign of consensus building among Member States who are less and less satisfied of the CAP evolution will inevitably lead to the disappearance of the principal integrated common policy. Consequently, only by creating a new political ambition to the CAP that we can recover from an EU crisis that is reflected at first by the budgetary pressure that Member States put on the EU resources.

The CAP is at the center of the European construction. It will remain so or its failure will sign the collapse of the European construction. Fifty years of the Cap evolution have been marked by two major periods: 1962-1992 and 1992-2000. The first period is characterized by a policy which protects agriculture from market instability, favoring a strong production and yield increase but leading in some cases to an overproduction and huge budget costs for lack of safeguards. In the second period, inspired by a liberal or neo-liberal approach, the CAP took the stance exactly opposite to that of the previous one. It endorses the decoupling of support, the environmental priority and the all-market logic without any consideration of strategic and economic facts related to agricultural and food sectors as well as no willingness to correct the great number of agricultural market flaws.

It is high time to build a CAP which connects these two schools of thought. This CAP must also be able to give agriculture and the agri-food sector all the necessary instruments to protect them from market instability while favoring innovation and competitiveness in order to attain the common objectives in response to the 21st century strategic challenges. The environmental protection has its place among these objectives but it cannot become neither the starting point nor the ultimate goal of the agricultural policy. Without an economic safety net for farmers, all agri-environmental policies are doomed to failure.

This future development of the CAP could and must be realized by respecting the limits of the multi-annual financial packages. By improving the effectiveness of each euro allocated by the European public authority, its goal is to avoid all budgetary slippage risks, which is the principal critic against the CAP prior to 1992. We have thus to thoroughly understand the major shortcomings of the 2014-2020 CAP so as to set out the scope of propositions to redesign the CAP.

It is therefore urgent to establish the CAP on new bases and initiate an in-depth reform.

3. Foundations of the Momagri-CAP

a. *Principles*

Entirely in line with the founding principles of the CAP in The Treaty of Rome and with the changes of the global geo-strategic context, the Momagri proposal is structured around the three following observations:

- What this policy must take into account:

  - The markets, especially agricultural markets, do not self-regulate. The recent economic, financial and food crises have proved this reality again.

  - Price volatility is a structural component of agricultural markets. Beyond their exposure to climate events and epizootic diseases, they are impacted by the asymmetric response of supply to price variations and low demand-price elasticity.

  - The lack of a reliable global governance system results in unilateral decisions by some countries because of the non-existence of cooperation mechanisms to stabilize and ensure international trade.

  - The growing financialization of agricultural markets and speculation on major crops in the world since the 2000s intensify agricultural price volatility.

- The errors and deficiencies of the current CAP to be avoided:

  - It is based on a decoupling rationale that prevents the implementation of a strategy to develop agriculture activities adapted to the 21st century challenges.

  - It maintains costly, ineffective and increasingly divergent systems according to member states and types of production at the expense of mechanisms to fight price and income volatility.

  - Through various mechanisms, it encourages a progressive re-nationalization of the CAP, which pulls Europe away from consolidating an integrated and more strategic policy.

  - It creates a greater confusion between agricultural policy and environmental policy, which weakens one without developing the other.

- The imperatives to be met by the CAP alternative project proposed by Momagri:

  - Implementing regulation mechanisms to provide farmers with adequate visibility and fair remuneration for their production,

  - Improving the functioning of European agricultural markets by correcting market failures and favoring effective organization procedures of production chains.

  - Encouraging European production quantitatively and qualitatively to optimize food security.

  - Ensuring better prevention and management of various types of risks, in particular the market risks confronting farmers.

  - Securing agricultural producers' economic health as well as that of consumers and intermediaries, so that effective social and environmental progress is boosted.

- Optimizing the budgetary effectiveness of the CAP and recovering a true "EU added value".
- Filling the gap between the current CAP and the strategic orientations of agricultural policies conducted by the major world economic and agricultural powerhouses.

In this context, Momagri calls for another CAP. Our proposed policy is still based on two pillars, but the greater part of the first pillar budget currently allocated to basic payment schemes and to greening would be redeployed towards tools to manage agricultural markets and farmers' incomes according to a counter-cyclical rationale. In addition, a Europe "Quality Aid" of identical amount for all productions would be granted to farmers on the basis of cultivated hectares, as counterpart for higher European production standards. This project has been applied to the grain, oilseed/protein crop and dairy sectors.

b. *Tools tailored to the nature of risks*

To implement the above-mentioned principles, we must have an approach based on detailed risk characterization (nature, intensity, frequency and interdependence, etc.) so that we can define the level of responsibility to confront hazards––individual, collective entity and public authorities––and employ the appropriate tools.

Risk categorization is primarily based on the criterion of the independence of the hazard occurrence, i.e. the presence or not of a correlation between event occurrences in a population. When this correlation is high, a systemic risk is referred to, since all individuals are affected at the same time, whereas in the opposite case, it is an independent or individual risk. For the latter, risk pooling is possible. The risk is therefore insurable. This is the case for instance for car accidents or localized hailstorms in agriculture.

In general, we consider that production risks, whether linked to climate or sanitary conditions––disease outbreak and pest infestations among others––fall in the category of independent risks, even if droughts or epizootic diseases may very well affect vast areas. By contrast, market risks or price risks are intrinsically systemic since temporary upheavals affect all economic agents simultaneously.

In such case, pooling between producers is not possible, as strictly speaking market risks are not insurable. The way to obtain coverage against price risks then depends on the possibility to transfer the risk to financial markets, when futures contracts exist for the given product or for a similar product. Yet the main limit to risk transfers through futures markets is linked to the fact that the proposed coverage level relies on the prevailing price, which means that if prices are already low, coverage will not be interesting. Price risk transfers are only advantageous if one wants to profit from price variations.

The second significant criterion of risks relates to the intensity of events, and thus the amount of losses suffered by farmers. Schematically speaking, there are three distinct increasing levels–

–normal, manageable and catastrophic. The chart below represents this aspect on its vertical axis. By crossing the two proposed criteria to describe risks, we get a map of risks allowing the identification of the levels of responsibility linked to hazard management, as well as the pertinent tools to meet these challenges.

**Presentation of instruments to prevent and manage risks
according to their nature and the level of responsibility involved**
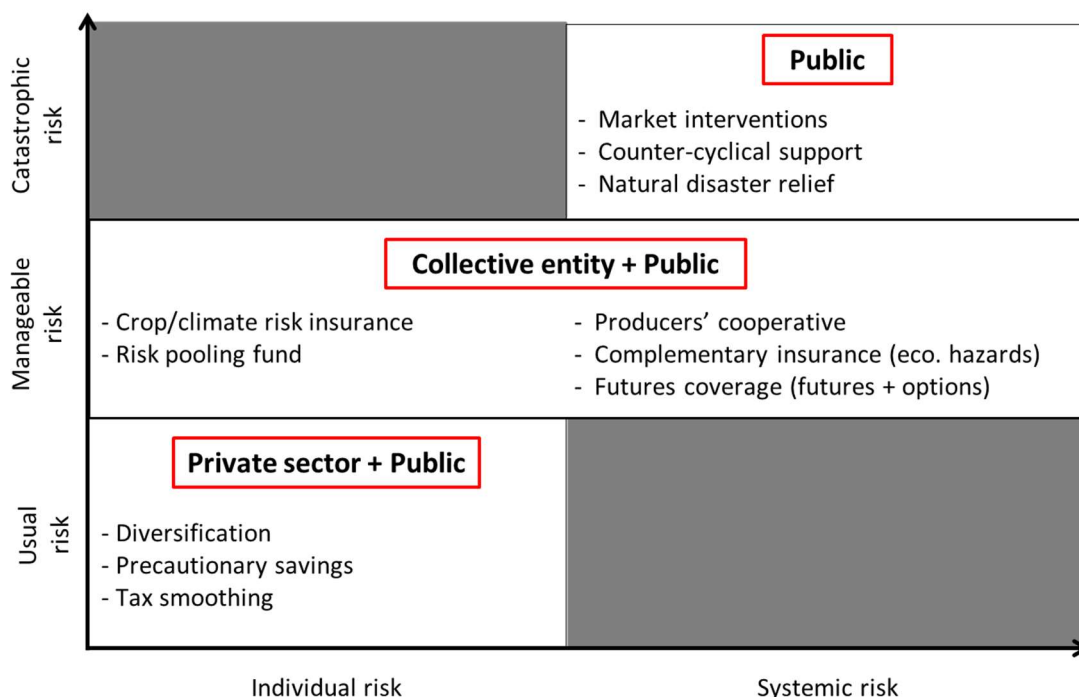
Usual risks are a matter of sound farming management. The diversification of productions or marketing channels, must answer to the saying "do not put all your eggs in one basket". Financial management must also integrate potential hazards. This implies pursuing a pertinent investment strategy, so that a cash flow cushion can be used, or precautionary reserves are built up (contingency deduction in France). Tax regulations must also assist farmers to manage usual risks by adapting direct debit procedures to account for the variability of economic results.

Manageable risks are too strong to be managed by farmers alone. Producers must then resort to solutions involving pooling between farmers. The main form of risk pooling is a matter of participating in a farming cooperative firm, since it allows securing the marketing of products, profiting from collective strategies to develop markets or even a simplified access to futures markets, among others.

Pooling funds and insurance contracts also belong to this category. As far as climate and health related risks are concerned, these tools are appropriate since the nature of these risks allows pooling. It is much less the case for market risks. While the latest CAP reform planned to finance such tools to promote their development, in the end no Member state opted for this type of

instruments in significant proportion to cover price risks, which shows their limitations in case of systemic risks. Being quite pro-active to this subject, Italy finally denied to implement an economic pooling fund. As told its minister, the country prefers countercyclical payments in the first Pillar[17].

Resorting to pooling funds to hedge against market risks presents many limits which affects its efficiency to secure producers. Firstly, prices do not fluctuate regularly around the production costs but follow cycles marked by "brief peaks and large troughs". As consequence, the years when prices are sufficiently high to fill in the fund is much fewer than those when the disbursement is demanded. Furthermore, even with a striking threshold reduced to 20% of losses as modified by the Omnibus rule after the agreement obtained within the October 2017 trialogue, the existence of cycle troughs could prevent the release of funds for lack of sufficient variations of income which is already too low and too stable at the troughs.

The development of insurance systems on farming revenue or gross margin is also limited by the systemic nature of market risks. Proposing such tools requires insurers to cover themselves by transferring the risks to futures markets. Insurance contracts on revenue are thus based on the reference price that cannot differ from prevailing quotations. That way, if markets are depressed, the proposed coverage will be quite limited. In the end, revenue insurance is not miracle tools, as some are claiming. Its advantage exists only in addition to other tools that cover important price declines (counter-cyclical support) and prevent markets to drown in overproduction (tools that balance supply with demand).

Beyond these technical issues, the setting up of economic pooling funds raises several institutional and political questions. The institutional strength of producer organizations, the only entities eligible to establish this kind of funds, is challenged. Besides, the potential crowding-out effects that have to suffer farmers unable to contribute in good years raise questions about the legitimacy of a type of support which could only be accessible to actors in less economic difficulties. The mobilization of public money for these funds in proportion with farmers' contribution could then be seen as sorts of privatization of access to public support which is hardly defendable. Moreover, while efficient crisis management needs an EU-level intervention—the only guarantor of the good functioning of the domestic market, economic pooling funds are often administered by national or regional entities which are incapable of using all the instruments necessary to ensure an efficient exit from crises. This corresponds therefore to a form of re-nationalization of the CAP and approves even more the EU withdrawal from crisis management.

Finally, the use of public money as the initial contribution to such funds and the loan interest payment makes us perplexed since in a prolonged period of low price, the only way to function the fund is through an appeal on capital markets. This seems equivalent to a producer subsidy which has to be reimbursed one day because of the creation of debt and the pledge of collaterals. We can see here the logic of the Juncker Plan which tends to raise funds through a vehicle

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[17] See http://www.momagri.org/UK/focus-on-issues/The-post-2020-CAP-Italy-pleads-in-favour-of-countercyclical-aid-to-Commissioner-Hogan_1874.html

composed partly of the European budget. This logic is certainly valid for other sectors but not for agriculture due to three reasons. First, the sector does not suffer from an underinvestment but an overproduction. Second, as markets are characterized by "briefs peaks and large troughs", how is it possible to reimburse loans if the crisis perpetuates? And third, the role of the EU-level intervention is to ensure the integration of the common market and thus to resolve market crises but not process to the securitization of any agriculture crisis that it may aim to make it last to reach the goals of the Juncker Plan deployment. It is high time to return to reason. Promoting economic pooling funds looks like a political and financial cavalry who tries to create "subprimes of agriculture". Which agricultural professional representatives could take the risk of going for such a dangerous gamble?

The development of insurance schemes on revenue or farm gross margin is also limited by the fact that market risks are systemic. Proposing these tools requires insurers to hedge themselves by transferring the risk to futures markets. As a result, revenue insurance is built on a referenced price which cannot be different from the prevailing one. As such, in depressed markets, the proposed coverage is not interesting. In the end, revenue insurance is not a miracle tool like some people suppose. Its advantage exists but only in complementarity with other instruments that protect against strong price decreases (like countercyclical payments) and with those which prevent a potential overproduction (such as tools to rebalance supply and demand).

Catastrophic risks require instruments under the responsibility of public authorities. In cases of major climate events, only the national solidarity can intervene, especially through public reinsurance and subsidies to offset the damages of natural calamities. For market risks resulting from the structural instability of agricultural markets, combining counter-cyclical subsidies–– that vary according to prices––and crisis management measures to encourage the adaptation of supply to demand seems to be the most effective and cost-saving solution. Among the crisis management measures, the milk voluntary production reduction support tested in 2016 is interesting and innovating experience. Instead of bringing assistance to producers to ease the crisis consequences, this kind of measure also allows direct actions to rebalance markets. Other measures to intelligently intervene on supply or demand that is worth trying is making non-food production more flexible in addition to the classical intervention measures based on public stockpiling.

Unlike the CAP decoupled subsidies, whose legitimacy and effectiveness in supporting incomes are declining as market price volatility develops and their value is captured by the economic environment of farmers, counter-cyclical subsidies must be the cornerstone of the next CAP to match the new economic context and rebuild a genuine strategy for one of the EU key policies. We will now develop the operational blueprint for the Momagri-CAP proposal based on counter-cyclical support.

c. *Operational blueprint*

A free variation price tunnel based on an equilibrium price (EP)[18]

For each product, an equilibrium price (EP) corresponding to the average production cost recorded in the EU is the central component of the system. It can be adjusted following a significant price variation. A free fluctuation tunnel, in which prices vary without any public intervention, is determined according to an evaluation procedure corresponding to market regulation requirements around this equilibrium price. By convention, the equilibrium price is equal to the average production cost[19], and the ceiling and floor prices are set according to the average dispersion (standard deviation) of production costs observed in Member states.

Payment of a flat rate "Europe Quality" aid (EQA) per hectare

The "Europe Quality" Aid is a subsidy to offset the costs incurred by the European agricultural model to meet the qualitative, sanitary and environmental requirements. It is assessed at €75 per hectare for all acreages.

Operational blueprint for the Momagri-CAP proposal
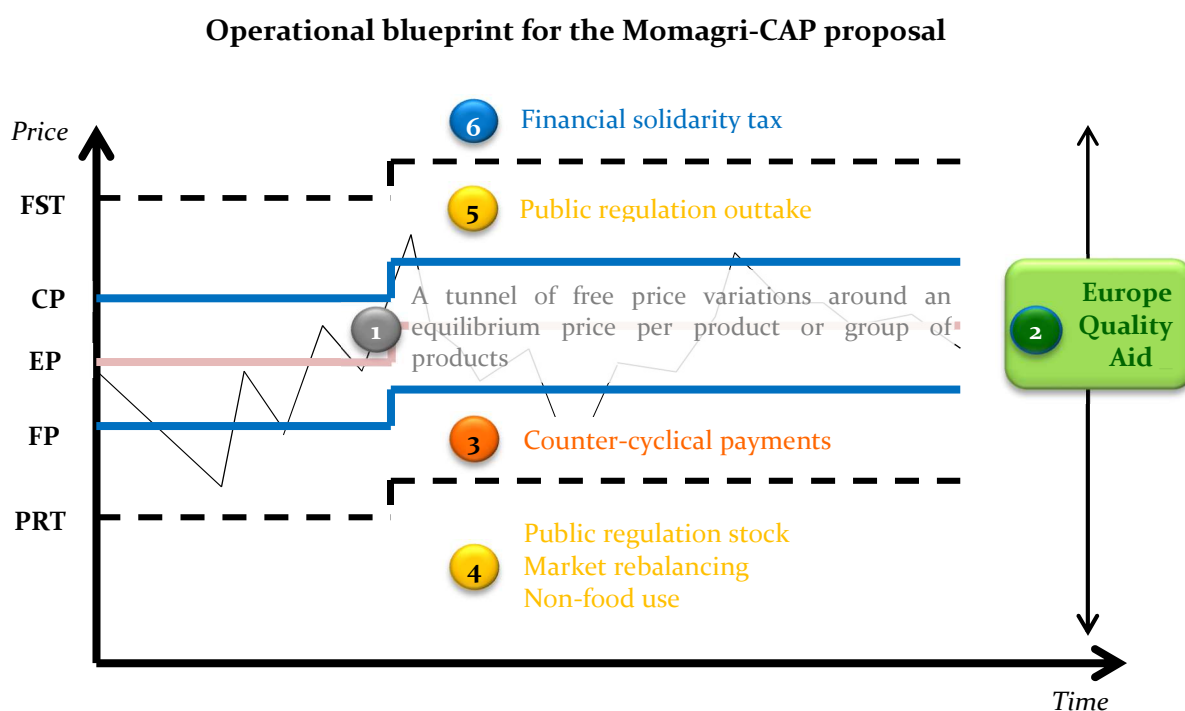
When prices are outside the tunnel and below the floor, producers receive counter-cyclical payments.

Calculated from the gap between the recorded market price and the floor price (lower limit of the tunnel), this subsidy will be available for almost the entire production (90%) based on the

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[18] The term "equilibrium" here is used in the sense of the required equilibrium between a fair compensation for farmers and an acceptable price for consumers.
[19] Based on a five-year rolling plan, except if the variation is higher than a threshold to be determined by the Council.

individual reference in terms of yields and acreages. If prices drop below a second threshold––the public regulation threshold––regulation measures including public regulation purchases will be initiated. They could amount up to 4% of annual output (regulation stocks), and represents a complement for the permanent strategic reserve for food security of 2% of annual output built up during the first year of the Momagi-CAP implementation.

Conversely, when prices are outside the tunnel above the ceiling

The EU will initiate public regulation outtake operations in managed proportions. Beyond a financial solidarity threshold set by the EU, a variable solidarity tax will be applied on financial transactions of derivatives of related products. The revenue from this financial solidarity tax will finance the contingency fund for crisis management.

4. Close examination of the Momagri-CAP mechanisms

The above-outlined blueprint calls for some scrutiny to better assess the innovative and effective characteristics of its principles.

From the outset, it must be pointed out that principal agricultural sectors can adopt the Momagri-CAP mechanisms. Yet, we chose to apply these mechanisms to only three major product groups––grains, oilseeds/protein crops and cow milk. These sectors share three common factors: being major beneficiaries of decoupled subsidies, strongly subjected to the volatility of international markets and able to be stockpiled (powder and butter for milk).

It appears that other sectors, such as vineyards or fruit and vegetables, can benefit more from the strengthening of current collective production management systems that are completed by investment support, rather than counter-cyclical subsidies. As regard meat sector, the situation seems to be less clear-cut, although progress could already be made through a better collective organization of production. For bovine and sheep meat, there is also the rationale of coupled support, which was backed in the latest reform, and the support to grassland and deprived areas that led us to not adapt the Momagri-CAP project to these commodities. As a general rule, all sectors subjected to market instability can find appropriate solutions to their particularities (see Part IV.5.b).

a. *Principle No.1: Creation of an equilibrium price per group of agricultural products*

The guiding principle is defining an equilibrium price for each group of agricultural products corresponding to a fair and stabilizing compensation for farmers, while remaining affordable for consumers. These prices would serve as benchmarks representing balanced markets in which production costs would be covered. An equilibrium price is defined for each group of interested products (grains, oilseeds/protein crops and milk) on the basis of the production cost recorded for every product of the group. Updating equilibrium prices would take into account variations in production costs and producers' improved performance.

Setting equilibrium prices will be the responsibility of the European Commission, in coordination with Member States via the management committee and Special Committee for Agriculture (SCA). In case of disagreement, there would be an arbitrage process (Coreper then Council of Ministers). The goal is to build a benchmark that takes into account the evolution of production factor costs in order to correct the fact that international trade prices only reflect sporadically the expected equilibrium.

Markets will operate freely without any intervention on spot markets, between the tunnel's ceiling threshold and the public regulation threshold, or between €235/t and €135/t for grains, thus representing a significant potential fluctuation margin.

Equilibrium prices will be defined by calculation conventions and a common nomenclature, so that the reference will be "traceable" and explainable. Just like any international convention, these calculations will be transparent and result from informed choices based on well-known databases like the Farm Accountancy Data Network (FADN) and within a specific EU decision-making body.

The equilibrium price selection for a given product will have to ensure the coverage of a large part of the production cost without becoming a support that implies price to go beyond the equilibrium level in case of efficient market. In fact, settling equilibrium prices too high and fluctuation margins of the tunnel too narrow would be difficult to plaid for. This project aims to ensure income stability for farmers to prevent crises without budgetary inflation, and an intervention mechanism in the form of budget reserve to prevent and rapidly manage crises.

b. *Principle No.2: Variation ranges free from any regulation*

A range of price variation around these equilibrium prices would be set to be free from any regulation since it involves a bearable variability for all economic actors. This range is established by convention at +/- 1 standard deviation of average production costs (over a five-year period) weighted by the major products of the EU Member States. If the agricultural product price is, for a period exceeding a minimal time, significantly lower than the range of price variation, counter-cyclical payments would be carried out.

The fluctuation margins determining the tunnel will be calculated following a double approach:

- The economic approach in which the sizing of the tunnel margins comes, at first glance, from the standard deviation of cost prices compared to the EU average. This is what we retained for the simulations concerning the grain, oilseed/protein crop and milk markets.

- The budgetary approach in which the average of intervention budgets should not exceed the multi-annual average of the financial outlook allocation to ensure the CAP strategic objectives.

The implementation procedures suppose that simulations were made from various assumptions of equilibrium and market prices to ensure that the system will be solid, even in a severe crisis.

c. *Principle No.3: Payment of a subsidy recognizing the societal role of farmers, the "Europe Quality" Aid*

The "Europe Quality" aid is a subsidy granted to all farmers to include the non-tradable role of land management, environmental preservation, respect of sanitary constraints and qualitative standards that contribute to European agriculture's high quality in every sense of the word.

Designed not as a constraint but the recognition of a major societal role, it becomes the positive outcome of greening practices, which is perceived as a sanction system in the current reform. Besides, by going from constraint to recognition, we move away from the bureaucratic dilemma caused by the shift to historical SPSs that only resulted in consolidating extremely contrasting situations in the Union.

As a consequence, the convergence objectives that shape a significant part of decisions in the recent CAP reform will no longer be required, since this "Europe Quality" aid will have a flat rate of €75/ha. The possible sanctions for not abiding to EU regulations will stem from controls and investigations conducted by the appropriate services. They are established following rules that are no longer related to whether a producer is fully eligible for EQA. Lastly, the EQA will be included in the green box, being a decoupled payment.

d. *Principle No.4: Counter-cyclical support*

To overcome the drawbacks of the current CAP, we have to start from a pragmatic basis that deals with the price instability-generated risks and provides farmers with enough visibility to make a decent living and investment.

This basis is primarily made of a counter-cyclical mechanism, completed by various instruments that are specific to each market. To prevent the fact that subsidy payment interferes farmers' behaviors, the Momagri-CAP is founded on a system of counter-cyclical subsidies based on historical references for surfaces and acreages. In this way, we avoid the adverse effects that could result from subsidy optimization strategies. Farmers will thus continue to make crop choices according to actual market opportunities.

Likewise, prices used to calculate subsidy amounts will not be set depending on prices at which farmers actually market their production, but rather on the basis of the referenced market's average quotation during sufficient time to cover a large part of the marketing period. This allows not interfering with usual marketing procedures. Resorting to historical references also presents two other advantages. It avoids the constitution of a cumbersome administrative system to collect yields and sale price data, speeding up subsidy disbursements. Furthermore, it enables keeping the system under control, and thus averts the risks of budget slippages due to increased acreages or yields.

Why counter-cyclical support?

Because it is cost-effective

The question of counter-cyclical payments concerns high or low price levels as much as their hyper-volatility. In such context, flexible support is much more cost-effective than flat rate decoupled payments to assist farmers in a difficult cyclical situation.

In fact, decoupled subsidies are not legitimate when prices are high, whereas often insufficient when prices are too low. During good years, they inflate incomes and lead to fiscal practices that ultimately strain production costs. And in general, these subsidies are picked up by downstream of production chains, and drawn back on farms' value, reducing their effectiveness.

Because it is efficient on budgetary grounds

Flexible subsidies are more budget-efficient over time compared to today's situation, if they are defined by floor and ceiling thresholds that limit their budget scope, while giving them a strong lever to rebalance incomes.

This is proved by the budget simulations we conducted (see below), and consolidated by the strategic directions taken by the United States with the 2014 Agricultural Act and other major agricultural powerhouses such as Brazil.

The adoption of countercyclical payments also allows to settle a virtuous circle for public expenditures by making the expenses at the EU level truly more responsible. This is not the case nowadays since the CAP Pillar 1 funds are spent every year … just to be spent. We need to get out of this bureaucratic logic of budget spending. The value-added for the EU as a whole will be nil and even negative within this principal budget item of the CAP, which is itself the major heading of the European budget (Feaga and Feader).

The proposed virtuous circle consists in making the Commission more responsible by allowing it to make use of two instruments: the budget transfer to farmers and crisis management tools. A dialogue will be established between Member states and the Commission to justify the use of each of these instruments in order to reach the income stabilization objective by respecting the multi-annual budget limit.

Because it is strategically needed

It is not possible for farmers to manage the specific risks confronting agricultural markets by themselves over time. Yet without any visibility, farmers cannot commit to a sustainable investment process, since the risks of market reversals are too high in the absence of effective safety nets.

This situation presents a real threat for the stability and competitiveness of European agriculture, all the more so since most of other major agricultural powerhouses possess means to protect themselves against international market volatility, through either market

mechanisms—custom tariff, stabilizing stock, etc.—or counter-cyclical and insurance instruments, or these two groups combined.

Moving in that direction will allow reversing today's prevailing rationale, which consists in stabilizing the agricultural budget at the cost of strong income volatility, and stabilizing instead farmers' incomes thanks to flexible budgets.

Because it is politically acceptable

The crises we are now experiencing must deeply alter the perception of European decision-makers regarding the CAP, whose primary objective is better managing price instability at the lowest cost. Yet, in our current hyper-volatility context, flat rate decoupled subsidies are largely unable to protect farmers from international price fluctuations. And since the CAP budget is now becoming increasingly restricted, decoupled subsidies could strongly decline because of their overwhelming share.

Accordingly, the implementation of an alternative and flexible system, which would safeguard comparable compensation levels for farmers while stabilizing their incomes over time at a lower overall cost, is an option that must spark a great deal of interest from European decision-makers.

Such a system could also be WTO-compliant for Europe, and remain in the authorized margins of the amber and blue boxes, as shown in the study on WTO-compliance in our proposal (see Part IV). These counter-cyclical payments can be made on up to 90% of each farmer's output. They will be paid to farmers and thus allow them to smooth out their yearly revenues over time.

e. *Principle No.5: The intervention thresholds*

Two intervention thresholds are created:

- A public regulation threshold that triggers market regulation measures, including a mechanism of public stockpiling in case of market prices below this threshold;

- A financial solidarity threshold when prices exceed the corresponding limit showing an increase in excessive speculation.

In the first case, public purchases at the threshold price are limited to 4% of annual production, which prevents the risks of budgetary slippage experienced in the first CAP while helping to stabilize markets. This intervention stock, limited to 4%, is additional to the 2%-of-production food security stock constituted at the implementation of the Momagri-CAP. In case of major crisis, the Council of Ministers can decide to exceed this 4% threshold under an international dialogue within the World Food Security Council. In addition, mechanisms acting on supply or demand––notably voluntary subsidies to reduce production and the transformation of agricultural products to biofuels––will supplement these stockpiling measures to bring prices back in the tunnel.

The budget cost of public regulation stockpiling is therefore capped by design. The simulations we conducted on the grain, oilseed/protein crop and milk markets demonstrate that if, during crisis years, the budget cost can be slightly higher than the observed average budget, over a multi-annual period the Momagri-CAP generate significant savings while ensuring equivalent and stabilized incomes for farmers.

In the second case, that is to say above a financial solidarity threshold set by the EU, a solidarity tax is applied to the transactions of derivatives. This financial transaction tax will reduce the liquidity during extreme bullish period. The receipt from this financial solidarity tax will finance the reserve fund to manage crises. New resources will then be gained by this plan, further improving the effectiveness of the new budget rules. In general, when market prices are near the equilibrium level or beyond, it will be possible for the EU to run public outtake operations, under managed proportions, to move price towards the equilibrium.

These operations might balance stock building purchases and do not generate any excessive stock accumulation over time. This risk will be all the more small that the growth of non-food industrial outlets will constitute sustainable solutions. This mechanism should be strong enough to rapidly bring prices back inside the tunnel by deterring market speculative behaviors. In emergency cases, when it comes to strengthen food aid or assist countries with ongoing good crises, the European Council will be able to make additional public outtake operations at prices below the equilibrium price, or even reverse the denaturalization measures.

f.　*Principle No.6: A tariff system*

In order to fully implement the governance principles designed by Momagri, trade conducted between major homogenous economic zones should be managed through a tariff system that level playing field depending on origin and destination zones. As long as trade prices are contained inside the variation-free price range, these direct debits would not be applied. Goods would therefore travel without any customs duty.

This could effectively open up markets without costly and distorting trade subsidies while maintaining the possibility for some countries––especially developing ones––to implement a system of locks at borders and develop their agriculture. This direct control at borders would give protection to farmers and indispensable financial means for investments. This is, to some extent, spreading the CAP principles to the rest of the world, within a totally new international cooperation that is adapted to world changes.

Regarding the specific case of the Momagri-CAP, the tax level should thus be based on the public regulation threshold, taking account of each nation's will to carry out the required counter-cyclical regulation mechanisms. In this way, we could avoid opportunist behaviors (free rider), and prompt each producing country's responsibility in stabilizing international trade within a worldwide coordination to exit crises.

<p style="text-align:center">***</p>

Applying the above-mentioned principles will give a new strategic course to the CAP, without entailing additional budget costs. Quite the contrary, the plan we propose to implement is stabilizing and leads to budget spending only in case of crisis.

We performed simulations whose results regarding three major agricultural sectors––grains, oilseeds/protein crops and milk––were analyzed. These findings are very encouraging and plead for an expansion to other sectors as long as their characteristics so allow. But the central and administrating feature of these three major sectors will create a regulation benchmark which might be enough on its own to return the CAP to a long-term strategic development path.

Stabilizing and strengthening the effectiveness of the measures undertaken in the first pillar will maximize the efficacy of the social and environmental measures currently included in the second pillar.

Part III
Budget simulation of the Momagri-CAP

1. General assumptions

Sectorial application scope of the Momagri-CAP proposal

Economic and budgetary impact studies of the Momagri-CAP were conducted on three sectors–
–grains, oilseeds/protein crops and milk.

The budget simulations covered the 2011-2020 years by taking into account the CAP reform and
the latest budgetary prospects of the Multi-Annual Financial Framework, adopted by the
Parliament and the Council. All budget data considered are effective payments for 2011-2016, and
forecasted numbers for the 2017-2020 period[20].

CAP budgets, in €billion, 2011-2020

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Budget	56,3	57,9	58,3	55,8	57,1	57,2	55,7	55,8	55,8	55,8

Source : EC (Budget and Multi-Annual Financial Framework)

Budget simulation methodology

The simulations were made by replacing interventions on the grain, oilseed/protein crop and
milk markets and the decoupled support allocated to these three commodities with the
Momagri-CAP expenditures, that is to say with the EQA (Europe Quality Aid), counter-cyclical
payments and public or regulation stockpiling costs. The decoupled support allocation was
carried out based on grain and oilseed/protein crop areas as well as other acreages of dairy farms.

Applying the Momagri-CAP principles hence generates budget modifications that only concern
the Titles 05 02 and 05 03 of the CAP budget, while budget expenditures of the other Titles[21]
remain unchanged.

Market interventions (Title 05 02), decoupled direct payments and other direct subsidies (Title
05 03) for the grain, oilseed/protein crop and milk sectors have thus been deducted from total

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[20] Payment appropriation for 2015 and payment budget for 2016
[21] Including the expenditures committed for rural development and Titles 05 05, 05 06, 05 07, 05 08, 05 09 et 05 AWBL-01

amounts, with the exception of export refunds. In 2014, the amount of support allocated to grain, oilseed/protein crop and dairy farms represents 61% of the total decoupled payments. For other sectors, all support is kept identical in this budget model.

A "Europe Quality" Aid (EQA) is introduced for these three sectors, regardless of market price levels. It is set at a flat rate of €75/hectare for all field crops (grains and oilseeds/protein crops) as well as fodder crops for dairy farms.

Counter-cyclical payments are made and public purchases for stockpiling are initiated depending on market price levels. The cost of public regulation through stockpiling/outtake operations is taken into account in the budget evaluations. This cost is added to that of the strategic food security stock building equivalent to 2% of the annual production constituted in the first year of the Momagri-CAP implementation. The cost of stock maintenance is estimated at an annual 5% of the stock value (cumulative stocks valued at the market price). At this stage, no new resources have been integrated in case of prices overrunning the financial solidarity threshold.

Setting equilibrium prices and the tunnel's floor and ceiling thresholds

The equilibrium price provides a useful benchmark to qualify market price levels. It is calculated on average cost prices according to the European Commission publications based on the data from the Farm Accountancy Data Network (FADN).

In this simulation, the equilibrium price is assessed by average cost prices recorded during the 2006-2010 period that precedes the first year of the simulation exercise. Between 2010 and 2013, cost prices changed very little and do not justify a modification of the equilibrium price.

The floor and ceiling thresholds corresponding to the limits from which price volatility is considered as excessive are determined based on a study of the fluctuation of cost prices over 2006-2010. They are set as follows:

- Floor price = equilibrium price + 1 standard deviation
- Ceiling price = equilibrium price – 1 standard deviation

For grain and oilseed/protein crops

Grain crops

We calculated average cost prices during the 2006-2010 period for the four major grain crops–– common wheat, durum wheat, corn and barley. These four crops represent on average 88% of the total EU-28 grain production. The measure of cost prices for the grain sector is the average of production costs for the four crops, weighted by their share of grain production. The following table sums up the parameters for the 2006-2010 period.

In accordance with the established rules, we can evaluate the floor and ceiling prices, as well as the equilibrium price for that period as follows:

- Equilibrium price = €215/t
- Floor price = €195/t
- Ceiling price = €235/t

Evaluation of EU-28 average cost prices, 2006-2010

Crop	Average cost price (€/t)	Standard deviation (€/t)
Common wheat	199	20
Durum wheat	358	33
Corn	206	23
Barley	235	19
Grains*	215	20

* Composite measure corresponding to the weighted average of 4 grain crops
Source: EC, FADN, Momagri

As mentioned above, changes in cost prices in the post-2010 years do not justify changing these parameters, since price costs are remaining close to those of previous years. In fact, between 2006 and 2013, average cost prices remained within the tunnel bound by the floor and ceiling thresholds for five out of eight years.

**Evolution of EU average cost prices for wheat and corn,
and evaluation of the equilibrium price and the floor and ceiling thresholds for grains,
2006-2013, €/t, farm-gate prices**

Sources: FADN, Momagri

Oilseed/protein crops

The analysis of European production costs for the oilseed/protein crop sector shows that the average cost prices for the 2010-2012 years was €425/t for a standard deviation of €35/t. This level is relatively advantageous for protein crops, which can be justified by the agronomic and economic interest to re-equalize the part of protein crops among the total oilseed and protein crop sown areas. Just like grain and according to the proposed definitions, we set the floor and ceiling prices as well as the equilibrium price for the entire simulation period:

- Equilibrium price = €425/t

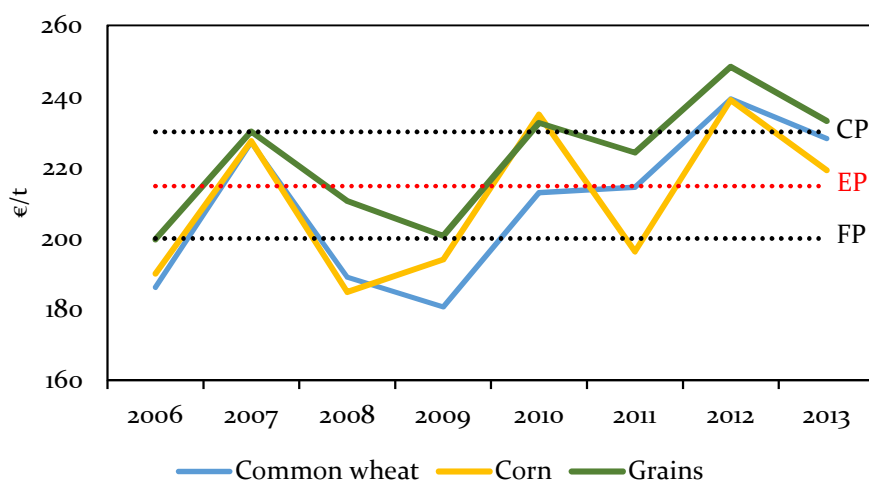- Floor price = €390/t

- Ceiling price = €460/t

For milk

An analysis of European production costs for the milk sector shows that the average cost price for the 2006-2010 period is €369/t with a standard deviation of €20/t. This leads to an equilibrium price and floor and ceiling prices as follows:

- Equilibrium price = €370/t

- Floor price = €350/t

- Ceiling price = €390/t

Cost prices for the dairy sector in the EU-28 have followed an upward trend since 2010. Yet, we have decided to not amend the equilibrium price or the tunnel, since the scope of the increase remains in acceptable limits (lower than 10% of the equilibrium price).

**Evolution of the average EU cost price and
the floor and ceiling prices for milk, in €/t**
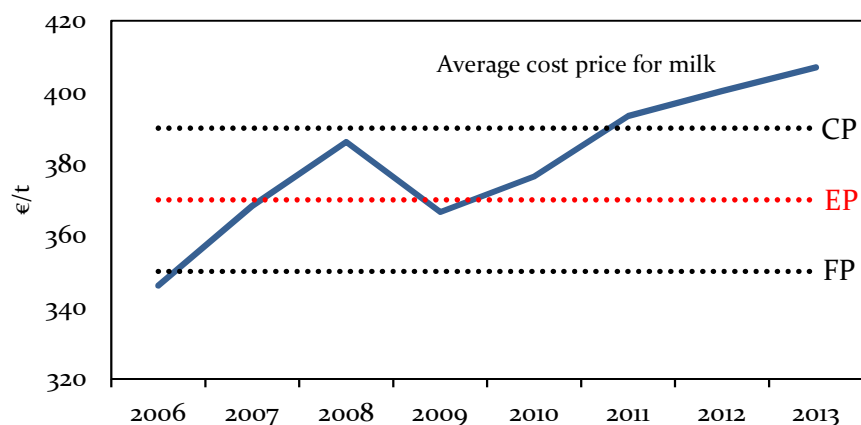
Sources: FADN, Momagri

Evolution in total EU cost prices shows that, for four out of eight years, cost prices were within the tunnel delimited by the floor and the ceiling thresholds. Total cost prices were above the floor prices during three of the eight years.

One of the specific features of the milk market is that milk cannot be stockpiled, contrary to processed dairy products—milk powder and butter, and that these two markets are quite different, because of their respective geographic coverage––local for the first and international for the second. It is thus essential that the reform proposal include, in its operational rationale, these two markets at their corresponding level:

- Milk collected at the farm for assessing counter-cyclical payments granted to farmers,

- Milk powder and butter for assessing the stocks qualified for public interventions.

Counter-cyclical payments will be triggered on the basis of farm-gate milk price. They will be paid to farmers when the price of milk collected at the farm will be lower than the floor price of the tunnel which is set by the management committee based on the calculation formula adopted by the Council. The application of counter-cyclical payments will be associated with measures to improve dairy market transparency as well as those to ensure better value-added sharing between the production and the transformation. This will help reduce the weight of butter and milk powder price evolution in the formation of price paid to milk producers. The American system of milk marketing can be an example of how to reach this objective. Like grain and oilseed/protein crop sectors, and so as not to encourage overproduction, a maximal production level eligible for counter-cyclical support will be defined by country and by agricultural holding, and the subsidy will involve 90% of this referenced production.

Public stockpiling will only concern milk powder and butter. It will become effective when market prices for milk powder and butter are lower than the public regulation threshold. A food security strategic reserve equivalent to 2% of produced volumes will be invested during the first year of the system implementation. The commercial regulation reserve will be limited to 4% of the annual output. Public outtake operations will only concern milk powder and butter. It will be effective when market prices for milk powder are above ceiling prices.

2. Assumptions retained for the grain sector

a. *Market prices*

The market prices used in the budget simulations for the 2011-2016 period are the annual average prices for common wheat delivered in Rouen (in €/t), from which €15/t is deducted for the average cost of transportation and stockpiling. The assumptions of wheat market prices projected for 2017-2020 were set based on the Momagri model[22] simulation results. They have been lowered compared to the previous version of this White Paper.

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[22] The Momagri model is a computable and sequential general equilibrium economic model. It includes a linear central equilibrium module and a risk module that models the various types of exogenous and endogenous risks confronting agricultural markets. Its key specific feature is agricultural price volatility modelling. For more information, please visit www.momagri.org.

The following graph shows the benchmark price (market price net of transportation costs)[23] as well as the Momagri-CAP intervention thresholds for 2011-2020 budget simulations in the grain sector. The equilibrium price (EP) is shown by a gray dotted line. The floor and ceiling thresholds are indicated in gray continuous lines. The public regulation threshold (PRT) is plotted in a continuous blue line, as is the financial solidarity threshold (FST).

Evolution of benchmark prices for grain in the simulations, €/t

Momagri grain price — Ceiling price = €235/t ----- Equilibrium price = €215/t
Floor price = €195/t — PRT = €135/t — FST = €250/t
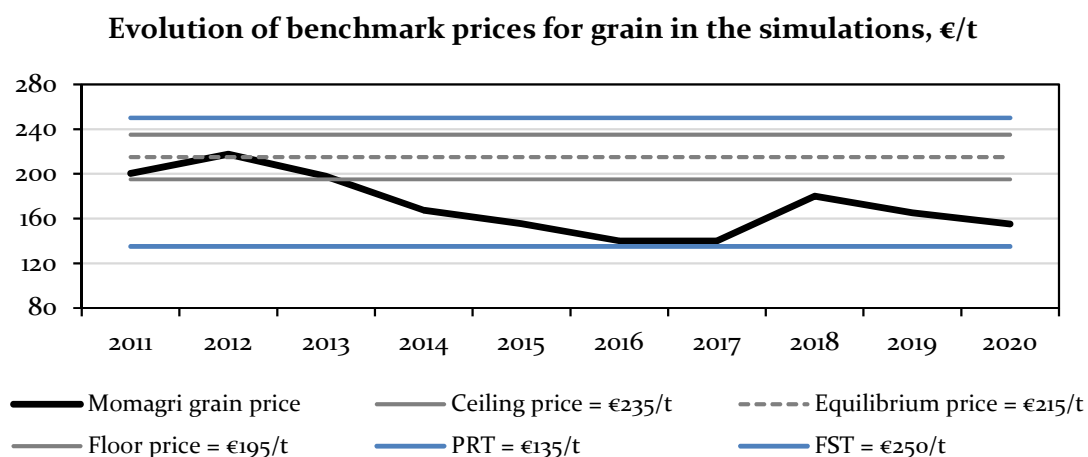
Source: Momagri

b. _Produced volumes and the activation of regulation mechanisms_

The counter-cyclical payment system will be set up on individual references based on historical output. For the budget forecast, the referenced volumes will be established on the average of the 2012, 2013 and 2014 years whose data are collected from Eurostat.

**Volumes of grains produced in the EU-28, in million tons,
Historical data for 2011-2014, projections for 2015-2020**

	2011	2012	2013	2014	2015-2020
Production	292	282	307	332	307 per year

Sources: EC, Momagri assumptions

Breakdown of volumes produced by price range

	< €140/t	€140-195/t	€195-235/t	>€235/t
Qualified for CCPs	90%	90%	0%	0%
Not-qualified for CCPs	6%	10%	100%	100%
Stockpiled	4%*	0%	0%	0%
Outtake from stockpiling	0%	0%	2%	2%

CCPs: Counter-cyclical payments
* Maximum threshold that can be exceeded upon Council's decision

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[23] By convention, in the following sections, prices are presented net farmers, i.e. market prices net of transportation costs.

The various regulation mechanisms considered are activated according to market price levels. The table above presents the qualification of produced volumes for each regulation mechanism that is proposed according to market price levels. The purchase and selling related to the regulation stock imply budget movements calculated based on market price of the given year. Considering the retained market price hypotheses, there is no stockpiling or stock release operation over the whole period. The only costs related to public stockpiling are those of food security stock building—equivalent to 2% of production—and its maintenance. We assume that a cost of 5% of stock value at market price is necessary to finance the stock management, including infrastructure and renewal (to avoid the stock decay) costs.

3. Assumptions retained for the oilseed/protein crop sector

a. *Market prices*

Budget simulations for the 2011-2016 period were conducted on the basis of annual average rapeseed prices recorded on the Hamburg quotation in €/t. The reference price to determine the amount of counter-cyclical payments and stockpiling costs equals to the average quoted price minus €15/t intended for the average transportation cost. For the 2017-2020 period, the benchmark price comes from the Momagri model results. Parameters retained for budget simulations for the 2011-2020 period are presented in the following graph.

Evolution of oilseed/protein crop benchmark prices for simulation purposes, €/t
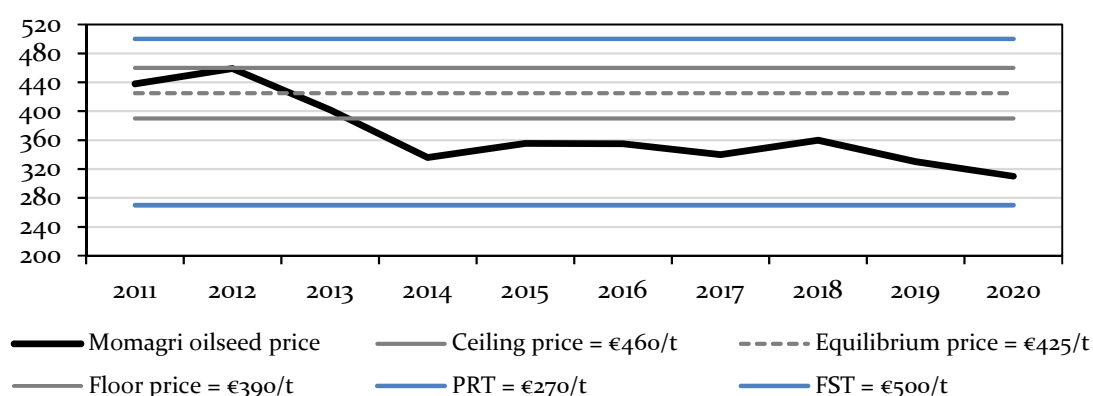
Source: Momagri

b. *Volumes produced and activation of regulation mechanisms*

For the 2011-2014 period, data on oilseed/protein crop production volumes are also obtained from Eurostat. By applying the same principle used for grain, the 2012-2014 average production serves as a reference volume for the budget simulation starting in 2015.

Oilseed/protein crop production volumes in the EU-28, in million tons
Historical data for 2011-2014, projections for 2015-2020

	2011	2012	2013	2014	2015-2020
Production	29.1	27.3	31.4	35.2	31.3 per year

Sources: EC, Momagri assumptions

Various regulation mechanisms are activated according to market price levels, and volumes vary in accordance with these two features. The following table presents the qualifying nature of oilseed/protein crop production by proposed regulation mechanism according to market prices. Like for grains, considering the retained market price hypotheses, the costs related to public stockpiling are only those of initial stock building and its maintenance. We assume a cost of 5% of stock value at market price to finance the stock management, including infrastructure and renewal (to avoid the stock decay) costs.

Breakdown of production volumes by price range

	< €250/t	€250-390/t	€390-460/t	>€460€/t
Qualified for CCPs	90%	90%	0%	0%
Not-qualified for CCPs	6%	10%	100%	100%
Stockpiled	4%*	0%	0%	0%
Outtake from stockpiling	0%	0%	2%	2%

CCPs: Counter-cyclical payments
* Maximum threshold that can be exceeded upon Council's decision

4. Assumptions retained for the milk sector

a. *Market prices*

The budget simulations for 2011-2016 were conducted on the basis of the EU weighted average farm-gate milk price (real fat content), in €/ton. Unlike the grain and oilseed/protein crop sectors, transportation costs were not taken into account, since the reference price is that of milk collected at the farm. The following graph displays the assumptions of market prices retained to establish budget simulations over the 2011-2020 period.

Evolution of benchmark milk prices for simulation purposes, €/t

- —— Momagri milk price
- —— Ceiling price = €370/t
- ----- Equilibrium price = €350/t
- —— Floor price = €330/t
- —— PRT = €260/t
- —— FST = €440/t

Source : EC, Momagri

b. *Volumes produced and activation of regulation mechanisms*

The EU-28 wholesale milk delivered volumes were collected from Eurostat database for the 2011-2014 period. The post-2014 budget simulation is made on the reference volumes based on the 2012-2014 average production.

Milk deliveries in the EU-28, in million tons
Historical data for 2011-2014, Projection for 2015-2020

	2011	2012	2013	2014	2015-2020
Volumes delivered	140	140	141	148	143 per year

Sources: EC, Momagri assumptions

Various regulation mechanisms are activated according to market price levels, and the qualified volumes vary according to these two features. The following chart presents the qualification of milk volumes for each regulation mechanism by market price ranges. Like for the other products, considering the retained market price hypotheses, the costs related to public stockpiling are only those of initial stock building (2%) and its maintenance. We assume a cost of 5% of stock value at market price to finance the stock management, including infrastructure and stock renewal costs.

Breakdown of milk volumes by price range

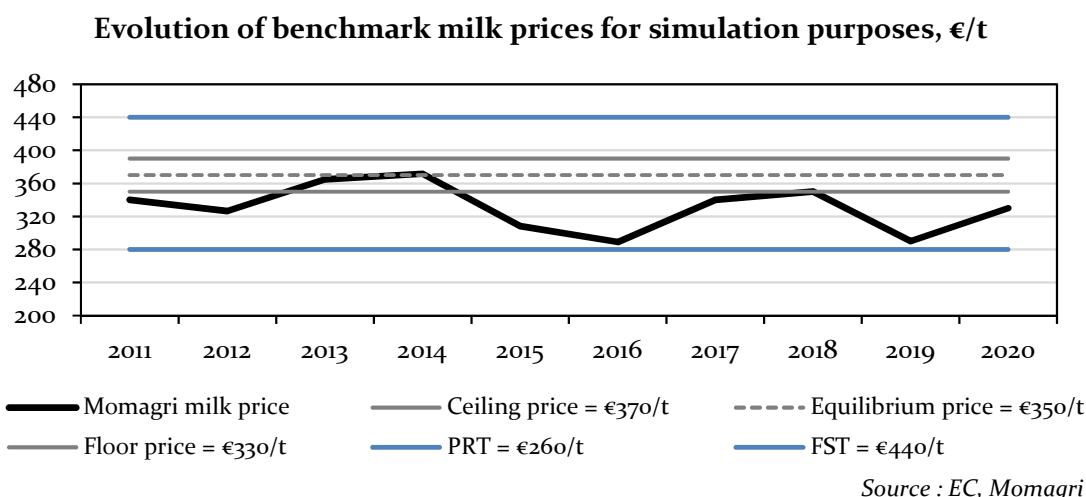|	< €280/t	€280-350/t	€350-390/t	>€390€/t
Qualified for CCPs	90%	90%	0%	0%
Not-qualified for CCPs	6%	10%	100%	100%
Stockpiled	4%*	0%	0%	0%
Outtake from stockpiling	0%	0%	2%	2%

CCPs: Counter-cyclical payments
* Maximum threshold that can be exceeded upon Council's decision

5. Budget simulations

Budget simulations are conducted in this section. They involve a ten-year period from 2011 to 2020. The budget simulations concern the impact of the Momagri-CAP on the whole EU agricultural budget, including the expenditures allocated to the grain, oilseed/protein crop and milk sectors. The values for the other sectors and the second pillar allocation are taken as given, without any modification compared to the current CAP.

We also carry out economic simulations regarding the impact of the CAP and Momagri-CAP proposals on the revenues and incomes of field crop and dairy farmers. Detailed in Part IV, these simulations are based on the same market assumptions than those retained for budget calculation. They do not aim to provide the average revenue/income that could be obtained by European producers in the future, but to compare, all things being equal, how field crop and milk farmers' revenue/income is formed in the framework of the CAP and Momagri-CAP respectively, especially in terms of average level and volatility.

a. *A better use of budget resources*

The following graph represents the budget impact of the Momagri-CAP principles in comparison with the budget forecast of the current CAP.

Comparison of annual budgets, CAP vs. Momagri-CAP, 2011-2020, in €billion
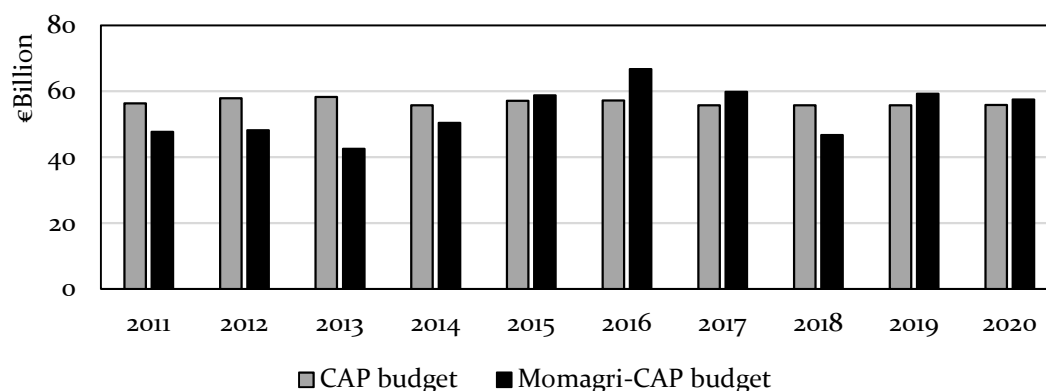

Sources: EC, Momagri

Average annual CAP budget: €56.6 billion (stable)
Average Momagri-CAP budget: €53.8 billion (flexible)

Average annual budget impact over:
2011-2020: +€2.8 billion (+€28 billion over 10 years)
2016-2020: -€0.06 billion (-€0.26 billion over 5 years)

Applying the principles of the Momagri-CAP over the 2011-2020 period would have saved €28 billion, or €2.8 billion annually, compared to the budgets that were actually allocated. Compared to the previous White Paper published in August 2016, there is a slight deterioration due to more pessimist price evolution assumed over 2016-2020 for the three concerned sectors. However, over a multi-annual period, the budget value-added is bigger and reflected notably by a net increase in minimum income and greater stability of average income (see Part IV). The average annual budget of the Momagri-CAP would be €53.8 billion, against €56.6 billion in the CAP–– equivalent to a 5% drop.

By considering solely the upcoming years, a modest annual deficit of €60 million would be observed between 2017 and 2020 because of a significant market price fall and the reduction of decoupled support over the period. On the other side, applying the Momagri-CAP principles would also lead to greater multi-annual budget flexibility. The Momagri-CAP budget could vary between €43 billion and €67 billion.

Consequently, the cumulative budget gap over the period is €28 billion, equivalent to a 5.9 fiscal month saving, or 5% of the total CAP budget over ten years (see graph below).

Cumulative budget gaps, CAP vs. Momagri-CAP, 2011-2020, in € billion

Source: Momagri
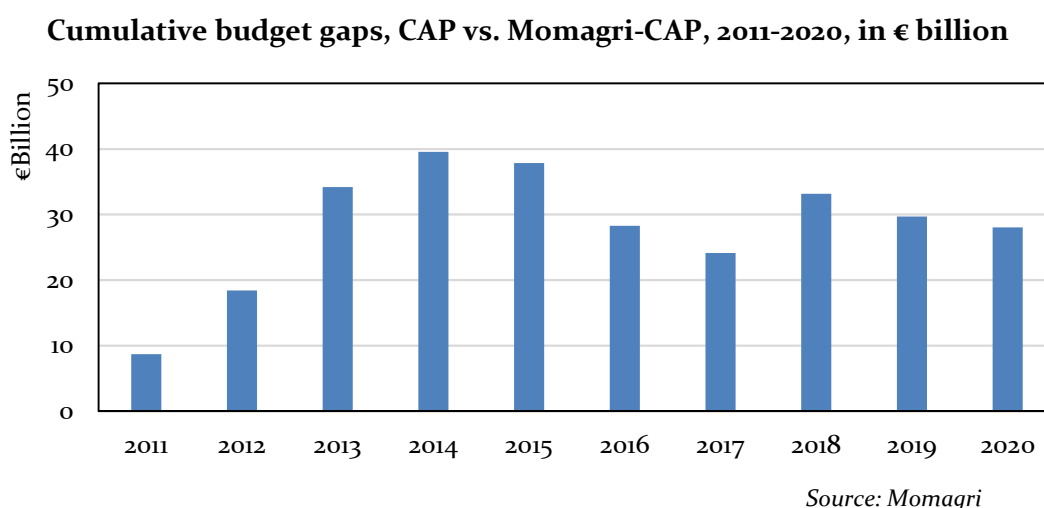
b. _An optimal management of the EU budget for better income regulation_

The budget variability is due to the introduction of new counter-cyclical regulation mechanisms. When prices are higher than, or equal to, the lower bound of the tunnel (€195/t for grains, €390/t for oilseeds/protein crops and €350/t for milk), the public expenditure is limited to the sole EQA applied on the related products. Yet, field crop and milk prices between 2011 and 2014 did reach levels that were close to, or higher than, these thresholds (€196/t on average for grains, €409/t for oilseeds/protein crops and €315/t for milk).

Not only cost-effective, the Momagri-CAP proposal is also efficient to regulate farmers' revenues and incomes when market conditions so require. In the framework of the current CAP, budgets are stable while farmers' revenue and income are volatile. Agricultural budgets are thus disconnected from the reality of agricultural markets, whose volatility, although structural, has

been rising in the past few years. The allocated public support is mainly decoupled, and unable to "aid" farmers in managing the price hyper-volatility to which they are confronted. These subsidies represent at most a price supplement whose level, being stable compared to unstable prices, is thus never appropriate to the situation. As a result, agricultural producers are subjected to price volatility, as shown by the volatility of their incomes, which is even higher than that of prices.

The rationale underlying the Momagri-CAP proposal focuses on an opposite view of the one prevailing today. In the framework of the Momagri-CAP proposal, budgets are flexible and farmers' revenues are stabilized, in contrast to what has happened with the current CAP.

The introduction of counter-cyclical coupled subsidies increases the CAP responsiveness to market reality. Furthermore, the non-systematic nature of counter-cyclical payments limits some of the most adverse effects of the current decoupled support which are unfortunately in line with an annual budget spending logic that brings no real value-added for the EU.

c. *An average revenue level stabilized to better support farmers' income and improve the sector competitiveness*

As one of the goals of the Momagri-CAP is maximizing the efficiency of European agricultural public expenditures in stabilizing farmers' revenue and income, economic simulations are conducted in addition to budget simulations. This aims to measure the potential impact of the Momagri-CAP on the earnings related to grain, oilseed/protein crop or milk production (see Part IV). The key interest of these simulations lies thus in the comparisons that can be made rather than the absolute values presented. These exercises reveal the pertinence of the Momagri-CAP compared to the current CAP in terms of regulation and economic compensation for an average producer of grains, oilseeds/protein crops and milk.

Better spending and more support is possible, provided that we are not hostile to any new ideas. In the framework of the current CAP with its decoupled subsidy rationale, farmers receive a relatively stable share of public support regardless of price levels.

In the Momagri-CAP proposal, public support is not only variable but also not systematic. It is paid only when market conditions so justify, i.e. when prices are too low to cover production costs. In this respect, one should keep in mind that this line of reasoning is one of the arguments that justified the Farm Bill in the United States and the abandonment of decoupled direct payments.

Two cases must then be differentiated:
- When prices are higher than the lower bound of the tunnel––floor price (case 1),
- When prices are lower than the floor price (case 2).

The first case is straightforward. The Momagri-CAP generates significant budget savings but brings out lower average revenues than the current CAP, because the amount of public subsidies is quite lower. In the second case, the situation is much more interesting for farmers. It is indeed when prices and farmers' margins are low that the economic and budget effectiveness of the Momagri-CAP becomes evident.

The counter-cyclical nature of subsidies allows to optimize budget resources through balanced and efficient management of public expenditures, as it is done in the United States. Contrary to decoupled and coupled subsidies that still prevail in the current CAP, counter-cyclical payments are not systematic, being applied only to a qualified percentage of production. They represent a support allowing farmers to smooth out their annual revenues.

By doing so, this system allows farmers:

- To manage market risks[24], which could not be financially feasible without counter-cyclical payments,

- To increase their visibility in a context of structurally unstable markets,

- Thus to improve their investments that drive competitiveness and future profitability.

Counter-cyclical payments therefore present a twofold benefit––an economical and budgetary advantage. They allow to smooth out farmers' revenues and offset the many imperfections and drawbacks of agricultural markets that can sustainably affect the economic stability of European farms. The budget expenditure of such a system is optimized, savings are generated when prices meet the expectations while contrarily more resources are available in crisis times.

Let's consider the example of a European grain producer and a €165/t Rouen delivered market price, i.e. €150/t paid to the farmer.

With the Momagri-CAP, he would have received:

- €150/t corresponding to the sale of his production at market price,

- €75/t as "Europe Quality" Aid on his whole production, or about €10/t for a 7.5t/hectare yield,

- €40.5/t in counter-cyclical payments corresponding to a €45/t subsidy[25] for 90% of his production,

- So a total sale price of €200.5/t.

With the current CAP, and based on a total average BPS of €40/t, he would have received €190/t. The 5.5% gap is in favor of the Momagri-CAP.

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[24] In the case when prices are not lower than the public regulation threshold.

[25] Equals to the difference between the floor price (€195/t) and market price (€150/t)

As a result, it is possible to achieve significant budget savings, while allowing farmers to maintain, and most importantly to stabilize their incomes through more budget flexibility and counter-cyclical payments. More detailed analyses by sector are given in Part IV, as well as the results obtained at farm level in France's department of the Marne and Western areas.

Part IV
Evaluation of the Momagri-CAP

1. WTO compliance

a. *WTO classification of domestic support*

In WTO general terminology, the domestic support to agriculture is classified in three categories, or boxes of different colors: amber, blue and green.

Amber box

According to the WTO, "all domestic support measures considered to distort production and trade (with some exceptions) fall into the Amber Box." Defined by the Article 6 on the Agreement on Agriculture (AoA) negotiated during the Uruguay Round, the amber box includes all domestic supports except those belonging to the blue and green boxes. These involve measures to support prices, or subsidies that are directly related to production quantities.

These supports are subject to limits and reduction commitments are expressed through a "Total Aggregate Measurement Support" (Total AMS), which gathers in one single figure all support for specified products as well as non-product-specific support (granted across the whole sector).

A minimal amount of support––or *"de minimis"*––is authorized:

- For each agricultural product, up to 5% (for developed countries[26]) of the production value of the given product;

- For the "non-product-specific" category, up to 5% of the value of the total agricultural production.

The rule applying to the "*de minimis*" clause is that of "all or nothing": If the amount of support is above the 5% threshold, even if it were only 0.1%, all concerned support is not qualified for the "*de minimis*" exclusion. All support classified in the amber box is then counted toward the country's total AMS. If, on the contrary, that amount is below the threshold, it is reduced to 0.

During negotiations, various proposals have been presented on the issue of how much further these subsidies must be reduced, and whether it is appropriate to set by-product ceilings rather than to maintain the current system of a "global", total and unique, ceiling. The AMS is defined in Article I and Appendices 3 and 4 in the AoA.

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[26] 10% for developing countries

Blue box

The blue box represents the intermediate category. It covers direct support that is coupled with a sort of production reduction. Any direct support normally amber can be classified in the blue box if it also requires farmers to limit their production.

The detailed method of admission in the blue box are set out in Paragraph 5 of Article 6 in the AoA. Direct payments under a production limiting program can be qualified for exemption in the blue box if they are:

- based on fixed areas and yields; or

- made on 85% or less of the base production level; or,

- if livestock payments, made on a fixed number of heads.

At present, no limits are placed on blue box spending. Some nations consider the blue category crucial for the distorting support curbing movement initiated since 1995. Others, on the contrary, want to set limits or reduction commitments, or even move these supports into the amber box.

Green box

Qualified in the green box, subsidies must not distort trade, or at most cause minimal distortion. The green category is defined in Appendix 2 of the AoA. Support classified in this box is not targeted at particular products, and generally represents a direct income support for farmers that are not related to current production levels or prices (decoupled payments). It can also take the form of environmental protection and rural development programs.

Green box subsidies are allowed without any limits. However, it must be financed by public funds and not by consumers through higher prices. During current negotiations, many countries have challenged the legitimacy of the green box, which, given the large amounts of payments or the nature of these subsidies, might cause significant distorting effects on trade (as in the case of decoupled income support).

b. *EU effective leeway*

Section I in Part IV of the EU Listing includes the commitments to cut domestic support expressed in terms of total AMS and annual final consolidated commitment levels. The current total AMS value of the non-exempt subsidies must not exceed the total AMS limit recorded in the Listing, and this neither for any given year of the implementation period nor afterward.

The EU's notified and commitment levels from 1995 to 2013 (the last notified year to the WTO) are presented in the following figure:

**Evolution of the EU maximal commitment level on
Total AMS, Current total AMS and OTDS[27],
in Ecu (1995-1999) and Euro (1999-2013) billion**
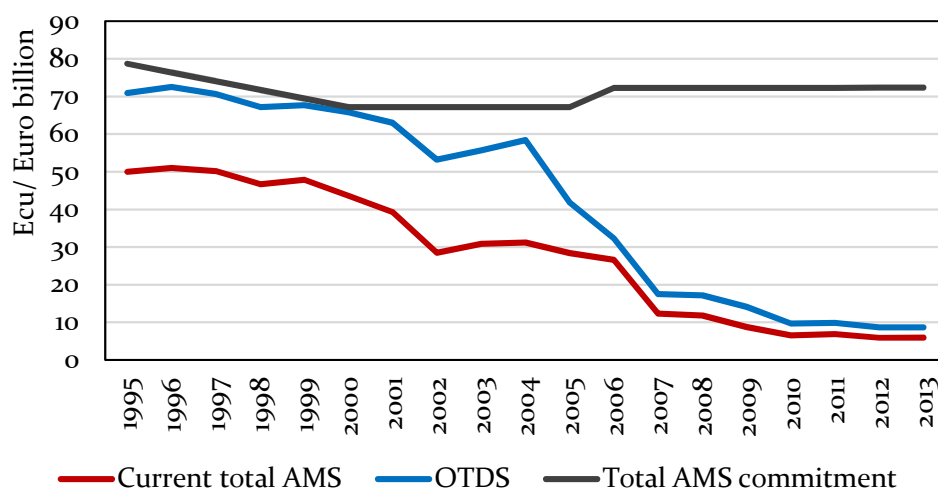
The total AMS commitment level is a maximum for the EU, which might be subjected to more restrictions following various negotiations and commitments. The negotiations started since 1995 on domestic support to agriculture aim to achieve "substantial reductions of the domestic support with trade distortions", through the establishment of limits and quantified reduction commitments for the OTDS (Overall Trade-Distorting Support) and each of its four components—the consolidated total AMS, the product- or non-product-specific *de minimis* levels, and the blue box.

For the time being, the various ministerial conferences within the Doha Round have hung up on the question of domestic support. Completely concerned by food security issues, a large part of developing or emerging countries have tried more to make their stockpiling policies recognized as lawful rather than to confine developed countries' AMS. In addition, the green box definition which allows to cover decoupled support is more and more criticized. How could we argue that these subsidies have no or little impact on production and trade while they represent around 50% of European farmers' income?

Support decoupling has indeed enabled Europe to considerably cut down its AMS. Boosted by this fact, the European Union has proposed an 80% reduction of its AMS over the maximal commitment level during the negotiations[28]. But without any agreement on the subject, it is merely a unilateral proposition of the EU and we still adhere to the initial AMS. Decoupling the subsidies to diminish the AMS should give the EU an "exchange money" in the negotiation. Nevertheless, it should be believed that this "exchange money" does not sound so interesting

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[27] The Overall Trade-Distorting Support (OTDS) is assessed by the sum of four elements: the consolidated final Total product-specific AMS, the authorized product-specific *de minimis* level (<5% of the agricultural production value by product), the authorized non-product-specific *de minimis* level (<5% of the value of the total agricultural production) and the blue box payments.

[28] Corresponding to an effective maximal AMS threshold of €14.4 billion for the EU over the 2007-2020 period.

and the other countries prefer to strengthen their policies than to play the "subsidy-laundering game". They do not care about converting their subsidies to decoupled ones to pass them inside the green box, and the EU remains the only entity that still relies its agricultural policy on this principle.

The following table summarizes the EU notifications to the WTO. It can be seen that applying the *de minimis* rule allows to wipe out a part of support normally in the amber box. With a current total AMS of €6 billion over a €72 billion limit, the EU leeway is huge which opens room for the use of support not categorized in the green box like countercyclical payments.

AMS, *de minimis* and amber box effective levels, EU, 2011-2013, in €billion

	2011	2012	2013
Current total AMS	6.9	5.9	6.0
Product-specific *de minimis*	0.3	1.0	1.1
Non-product-specific *de minimis*	0.7	0.8	0.9
Amber box total	7.9	7.7	8.0

Sources : WTO

c.   *WTO compliance of the Momagri-CAP proposal*

The support measures of the Momagri-CAP proposal can be classified into different categories in the following manner.

Support mechanisms Momagri-CAP	WTO category[1]
"Europe Quality" Aid	Green
Counter-cyclical payments	Amber (or Blue[2])
Regulation stockpiling	Amber
Food security stockpiling	Green

[1] *Under the Agreement on Agriculture*
[2] *Assumption retained for simulations: amber box*

The WTO distinguishes stockpiling for food security from the other types, notably those for market regulation. The paragraph 3 of Annex 2 of the Uruguay Round AoA specifies that to be considered as food security stock, the purchasing and selling prices must be market prices. It is the case here so we arrange the management costs of the food security stock in the green box. Meanwhile, with the assumed market prices, regulation stockpiling is not activated in this simulation.

In order to optimize the *de minimis* clause usage, we choose to label countercyclical payments for milk sector as product-specific support. In contrast, grain and oilseed/protein crop subsidies are counted in the non-product-specific category since countercyclical payments for grains involve several products indistinctly, so does support for oilseeds/protein crops.

Given the fact that the Momagri-CAP aims to convert a part of decoupled support to countercyclical one, the other CAP items being unchanged, we are adding this new amber-boxed support to the current CAP AMS in our WTO-compliance simulation exercise. The *de minimis* rule has to be applied on the total amount of these two components. Compiled in the table below are the AMS to be notified for the Momagri-CAP before the *de minimis* rule employment. We assume that the notifications related to the rest of the CAP for every product to stay constant over 2014-2020 from their 2013 level.

Amounts of product-specific, non-product-specific and current total AMS of the Momagri-CAP prior to *de minimis* exclusions, in €billion

Year	Product-specific AMS			Non-product-specific AMS			Current total AMS before *de minimis*
	Momagri-CAP	CAP		Momagri-CAP		CAP	
	Milk	Milk	Others	(Grains)	(Oilseeds/ Protein crops)		
	(A)	(B)	(C)	(E)	(F)	(G)	(H)
2011	1.3	0.2	7.0	0.0	0.0	0.7	9.1
2012	2.9	0.2	6.7	0.0	0.0	0.8	10.6
2013	0.0	0.2	6.8	0.0	0.0	0.9	8.0
2014e	0.0	0.2	6.8	8.3	1.7	0.9	17.9
2015e	5.4	0.2	6.8	10.9	1.0	0.9	25.2
2016e	7.9	0.2	6.8	15.2	1.0	0.9	32.0
2017e	1.3	0.2	6.8	15.2	1.4	0.9	25.9
2018e	0.0	0.2	6.8	4.1	0.3	0.9	12.4
2019e	7.7	0.2	6.8	8.3	0.6	0.9	24.6
2020e	2.6	0.2	6.8	11.1	1.1	0.9	22.7

Lecture note :
- *The milk AMS to consider is equal to, for each year, the sum of 2 columns (A) and (B)*
- *The non-product-specific AMS to consider is equal to, the sum of 3 columns (E), (F) and (G)*
- *The current total AMS (H) is the sum of all columns from (A) to (G)*
- *The column (C) amounts correspond to the sum of the product-specific AMS of all products but milk as notified to the WTO by the EU*

e : estimation. Source : WTO, Momagri calculations

In order to optimize the *de minimis* exclusion, let's consider the limits listed in the following table.

The product-specific and non-product-specific *de minimis* levels

	2011	2012	2013	2014-2020
Product-specific *de minimis* levels				
Milk	2.6	2,6	3.1	3.1 per year
Others*	7.0	6,0	8.4	8.4 per year
Total non-product-specific *de minimis*	18.5	18.7	19.0	19.0 per year

* Equivalent to the sum of de minimis for other products. Sources: WTO, Momagri calculations

The table below propose a synthetic view of the *de minimis* rule usage. This rule allows deleting all support whose amount is lower than the 5% threshold. As a result, the EU AMS would reach at most €14 billion in 2016 against €32 billion without applying the *de minimis* clause.

Details of the product-specific, non-product-specific and current total AMS calculations for the Momagri-CAP after *de minimis* exclusions, in €billion
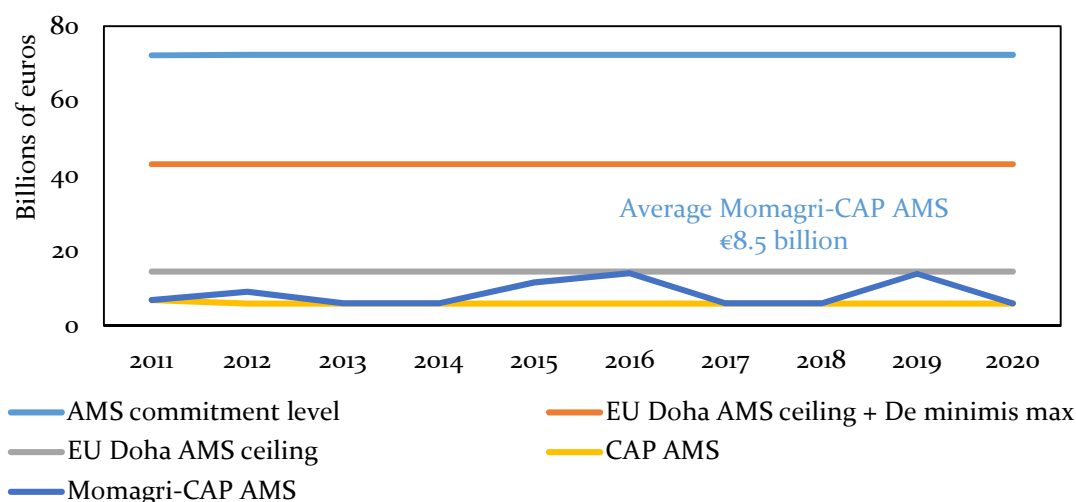
Year	Product-specific						Non-product-specific			MGS totale courante après *de minimis*
	AMS before *de minimis*		*De minimis*		AMS after *de minimis*		AMS before *de minimis*	*De minimis*	AMS after *de minimis*	
	Milk	Others	Milk	Others	Milk	Others				
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)
2011	1.5	7.0	2.6	9.6	0.0	6.9	0.7	18.5	0.0	6.9
2012	3.1	6.7	2.6	8.7	3.1	5.9	0.8	18.7	0.0	9.0
2013	0.2	6.8	3.1	8.4	0.0	6.0	0.9	19.0	0.0	6.0
2014[e]	0.2	6.8	3.1	8.4	0.0	6.0	10.9	19.0	0.0	6.0
2015[e]	5.5	6.8	3.1	8.4	5.5	6.0	12.8	19.0	0.0	11.5
2016[e]	8.0	6.8	3.1	8.4	8.0	6.0	17.1	19.0	0.0	14.0
2017[e]	1.5	6.8	3.1	8.4	0.0	6.0	17.6	19.0	0.0	6.0
2018[e]	0.2	6.8	3.1	8.4	0.0	6.0	5.4	19.0	0.0	6.0
2019[e]	7.9	6.8	3.1	8.4	7.9	6.0	9.8	19.0	0.0	13.9
2020[e]	2.8	6.8	3.1	8.4	0.0	6.0	13.1	19.0	0.0	6.0

Lecture note :
- *Column (I) is equivalent to the sum of columns (A) and (B) in the previous table. The values in this column are to be compared to those in column (III) by applying the* de minimis *rule to obtain column (V).*
- *The same principle applies to each product of the « Others » category in column (II), but to save place, we report here only the sum of individual amounts. See detailed notifications in the WTO documents.*
- *Column (VII) is equivalent to the sum of columns (E), (F) and (G) in the previous table. The values in this column are to be compared to those in column (VIII) by applying the* de minimis *rule to obtain column (IX).*
- *The current total AMS after* de minimis *(X) is the sum of columns (V), (VI) and (IX)*

e : estimation. Source : WTO, Momagri calculations

WTO-Compliance of the Momagri-CAP

Average Momagri-CAP AMS
€8.5 billion

- AMS commitment level
- EU Doha AMS ceiling + De minimis max
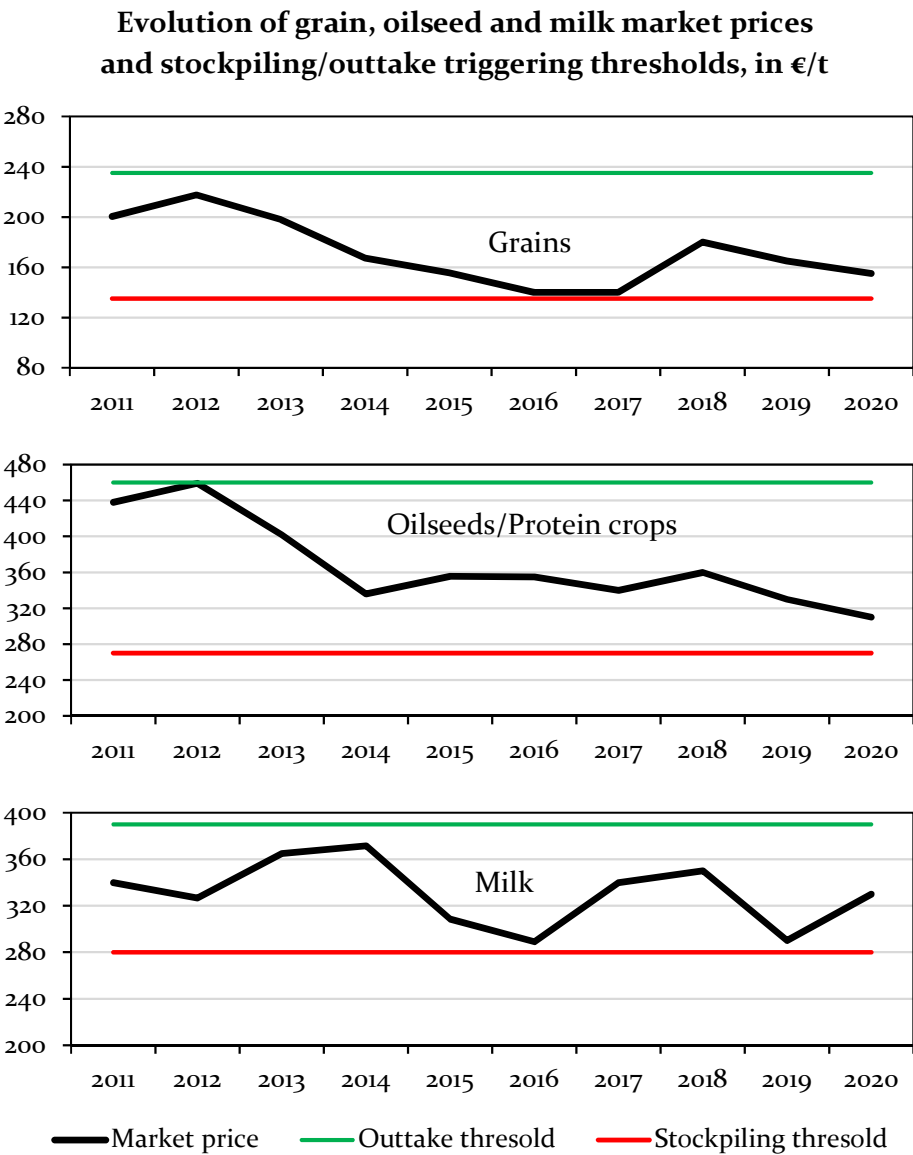- EU Doha AMS ceiling
- CAP AMS
- Momagri-CAP AMS

Sources: WTO, Momagri

In sum, it appears that after product- and non-product-specific *de minimis* application, the total support disbursed as countercyclical payments and public regulation stockpiling in addition to that of the current CAP is lower than not only the total AMS upper limit but also the EU unilaterally proposed threshold, for every year between 2011 and 2020. The graph immediately following reveals that the Momagri-CAP fully complies with the WTO's rules. This would be the case even when the EU proposal were passed although such an agreement seems unrealistic.

2. Impact on stocks

The Momagri-CAP proposal supposes that some initial stock for food security equivalent to 2% of production of each related product is built up, as well as 4%-limit public regulation stock. In the present simulation with the retained price assumption, the regulation stock is not activated over the whole period, as the following plots remind us.

**Evolution of grain, oilseed and milk market prices
and stockpiling/outtake triggering thresholds, in €/t**

Source: Momagri

Hence, only food security stock is set up at the beginning of the period. It is equal to 2% of the European production, or 5.6Mt of grains and 0.6Mt of oilseeds/protein crops.

For milk, we use the usual conversion coefficients to know the amount of milk stock in form of butter and/or skim milk powder (SMP). Thus, dairy stock counts 289,000 tons of SMP and 83,000 tons of butter.

The table below reports the building and management cost of the food security stock. A management cost equivalent to 5% of the production valued at market price is assumed to cover the infrastructure cost and that of stock circulation (purchase/selling) to avoid the stock decay.

Budget cost related to the food security stock, in €Million

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Coût de constitution	2 310	0	0	0	0	0	0	0	0	0
Coût de gestion	56	61	55	47	44	39	39	50	46	43
Coût total	2 366	61	55	47	44	39	39	50	46	43

Source : Momagri

3. Impact on farm revenues

Economic simulations have been conducted to study the impact of the Momagri-CAP on farm revenue. They are based on the same assumptions as those for budget simulations. They allow a comparison of average revenue within the current CAP and the Momagri-CAP, all things being equal. This assessment involves both the average amount and its volatility. In this task, the average revenue is computed per ton for grains and oilseeds/protein crops and per hectare for milk production. In fact, for the latter, we have to account for the fact that dairy farms also produce field crops which, all or partially, are used as animal feed.
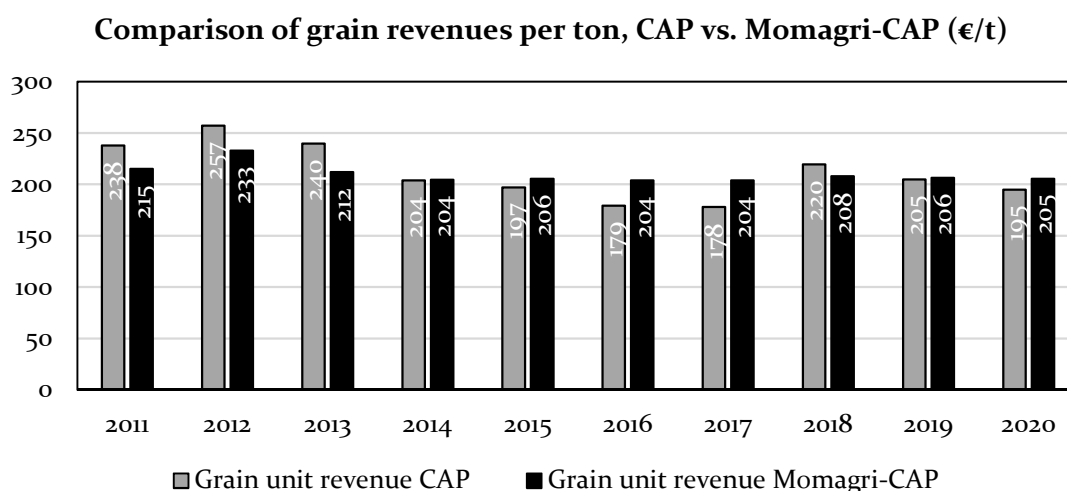
a. *Impact on average grain revenue*

Under the above-stated hypotheses, especially in terms of 2017-2020 price movements and acreage-based breakdown of decoupled payments, we tabulate an average per-ton revenue composed of product turnover (average yield times market price) and related subsidies.

It appears that between 2011 and 2020, within the current CAP, the average unit revenue (revenue per ton) should attain €211/t, with a minimum of €178/t in 2017 and a maximum of €257/t in 2012. Over the 2017-2020 period, the average revenue would be €199/t with the CAP.

Within the Momagri-CAP proposal, the average unit revenue would be €210/t for the 2011-2020 period, and €206/t for 2017-2020. The minimum would reach €204/t (2014 and 2016) and the maximum €233/t (2012).

The average unit revenue under the Momagri-CAP would therefore be slightly lower than that of the CAP (-0.7%) over 2011-2020 but higher (3.4%) over the last four years of the period, also much more stable with a minimum of €204/t against €178/t.

We do in this way measure how an agricultural budget built on the Momagri-CAP principles is more effective, both for farmers, who can stabilize their revenues while gaining better long-term visibility, and for European taxpayers, who can get more added value from budget resources.

Comparison of grain revenues per ton, CAP vs. Momagri-CAP (€/t)

Sources: EC, Momagri

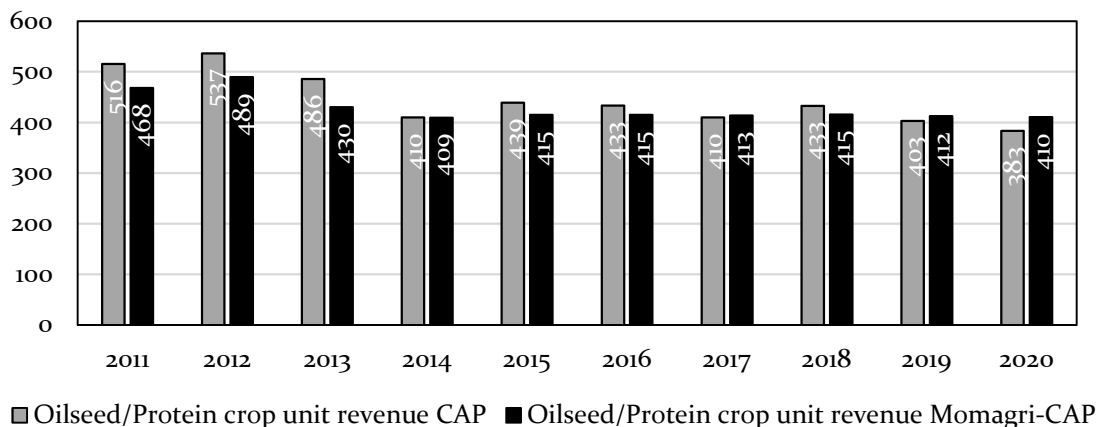### b. *Impact on average oilseed/protein crop revenue*

For the oilseed/protein crop sector, we process in the same fashion to compute the average per-ton revenue, being the sum of the production value (average yield times market price) and support payments. We then obtain a premise to compare the current CAP and what proposed by Momagri based on their effect on revenue.

For the 2011-2020 period and based on retained assumptions, the average unit revenue (revenue per ton of oilseeds/protein crops) would reach €445/t in the current CAP and €428/t in the Momagri-CAP proposal. This weaker performance of the Momagri-CAP can be explained by market prices that are in general higher than the countercyclical payment striking level.

Contrarily, like the grain sector, the turnover would also be much more stable with the Momagri-CAP than with the CAP. The CAP average unit oilseed/protein crop revenue could fluctuate between €383/t and €537/t around the mean of €445/t. Under the Momagri-CAP proposal, the average unit revenue could fluctuate over the range of €409/t and €489/t with an average value of €428/t.

During the upcoming years between 2017 and 2020, the average revenue in the Momagri-CAP would be 1.4% superior to that of the CAP (€413/t vs. €407/t).

Comparison of oilseed/protein crop unit revenues CAP vs. Momagri-CAP (€/t)

Bar chart data (Oilseed/Protein crop unit revenue CAP | Momagri-CAP):
- 2011: 516 | 468
- 2012: 537 | 489
- 2013: 486 | 430
- 2014: 410 | 409
- 2015: 439 | 415
- 2016: 433 | 415
- 2017: 410 | 413
- 2018: 432 | 415
- 2019: 403 | 412
- 2020: 383 | 410

☐ Oilseed/Protein crop unit revenue CAP   ■ Oilseed/Protein crop unit revenue Momagri-CAP

Sources: EC, Momagri

Farmers' turnover would therefore be more stable over this period within the Momagri-CAP proposal than in the current situation, with a far more attractive minimum level (€409/t vs. €383/t). The preceding graph compares the evolution of an oilseed/protein crop farmer's unit revenue.

### c. *Impact on a typical dairy farm's revenue*

Constructing an evaluation basis for our proposal through its impacts on dairy farms' revenue is more complicated since these farms have planted areas which are granted subsidies and partly marketed. An average European farm is formed based on Eurostat data (UAA=58ha, 51 dairy cows, 19.8% in cash crops). The changes after 2014 reform, notably the expansion of coupled support, are included. To ensure a sufficiently explicit comparison, revenues are reported per hectare.

The results are as following. For the years between 2011 and 2020, with the CAP, the average per-hectare revenue of a European dairy farm would reach €2192/ha, with a minimum of €1940/ha in 2016, and a maximum of €2397/ha in 2014. Under the Momagri-CAP proposal, the average unit turnover would be at a moderately lower amount of €2186/t, with a minimum of €2152/ha (2016), and a maximum of €2275/ha (2014).

The average unit revenue of a given dairy farm would thus have been slightly lower than what has been actually received (-0.3%) but the lower bound would have been 6% higher.

In addition, just like grain and oilseed sectors, turnover would also be much more stable with the Momagri-CAP than with the CAP. Adopting the Momagri-CAP proposal would then lead to a stabilization of farmers' revenue to a level very close to the one observed during this period.

Comparison of a dairy farm revenue per hectare, CAP vs. Momagri-CAP (€/ha)

Milk unit revenue CAP   ■Milk unit revenue Momagri-CAP
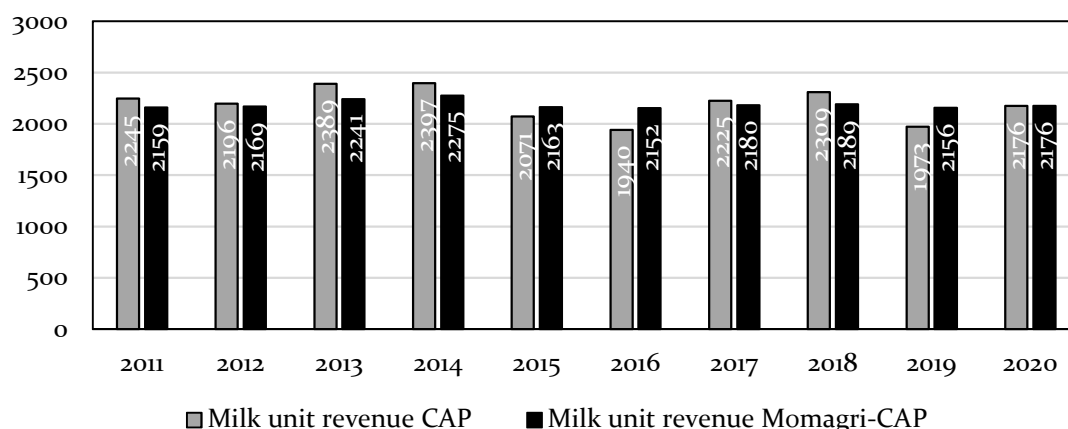
The main interest of these simulations consists in demonstrating the stabilizing effect of our CAP modification proposal on revenue. Average revenues are similar, sometimes moderately lower, but their volatility is considerably restricted. With countercyclical payments, farmers are better protected in case of economic situation deterioration. In the next section, we complete this approach on revenue by a study on farm income.

4. Impact on farm incomes

Beyond the impact on unit revenue, we also tested the applicability of the Momagri-CAP by using real farm accounting data in order to more precisely depict its impact on agricultural incomes. Several researches have been conducted with our partners, such as the Federation of Farmers' Unions in the department of the Marne (FDSEA 51) and a dairy farm management center located in France's Western region. These studies enable us to build typical farms with their net income, i.e. farm income before taxes and without own factors, input for our analyses.

Application to the French Marne department (field crops)

We develop below the key results obtained from the Marne sample of 600 farms specialized in field crops. With production costs slightly lower than average, the yields are 8.5t/ha for wheat, 8.8t/ha for corn and 3.4t/ha for rapeseed with an average usable agricultural area of 113 hectares. The average amount of decoupled payments per hectare in 2013 was €351, and may decline to €252 at the end of the period.

The simulation performed over the 2015-2020 period shows, on average, a higher farm net income for the Marne department under the Momagri-CAP proposal than what would be with the CAP. Over these years, the average net income per hectare would attain €335 with the Momagri-CAP, against €305 with the CAP, equivalent to a 10% increase. In addition, the minimum income level is almost two times higher with the Momagri-CAP compared to the CAP (€239/ha vs. €136/ha).

The graph below summarizes the simulation results. It is quite clear that the lower market prices, the more profitable the Momagri-CAP is in terms of current income, when compared with today's CAP.

Estimation of farm net income of a typical field crop farm, Marne department, €/ha
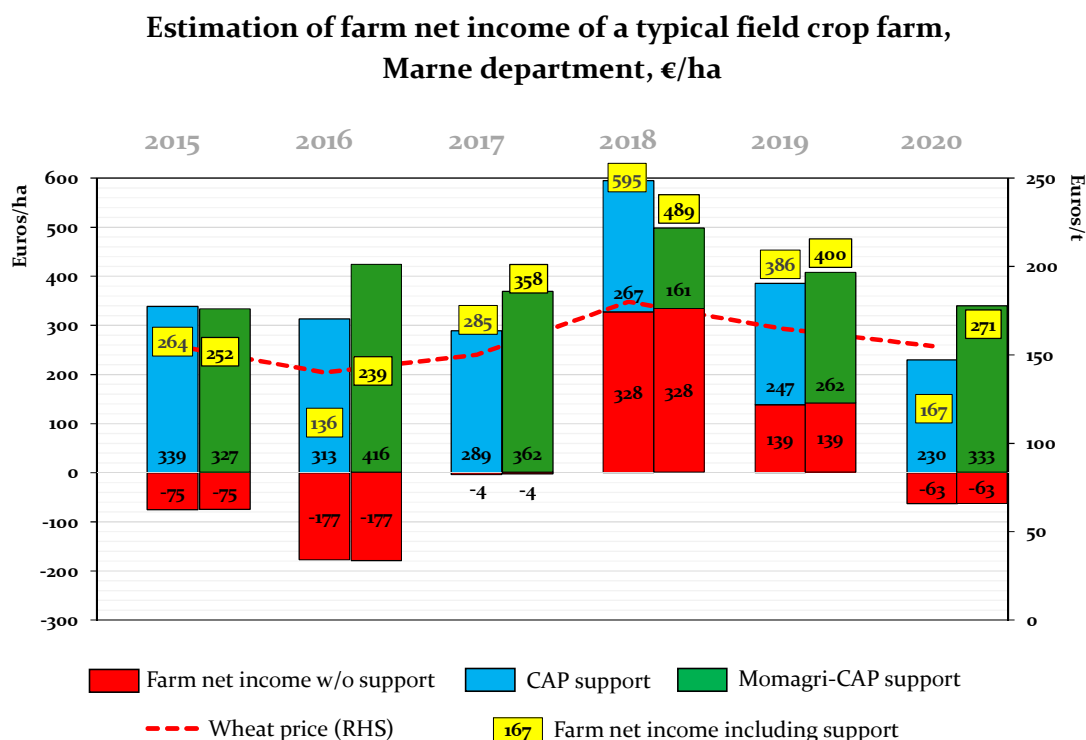
Source: FDSEA51, Momagri

2015-2020	CAP	Momagri-CAP
Average farm net income (€/ha)	305	335
Minimum farm net income (€/ha)	136	239

Application to Western France (Milk)

An identical simulation is conducted based on a sample of 2,600 dairy farms located in Brittany. A typical farm operates on 77 ha, of which 16 ha reserved for cash crops, and 59 lactating milk cows. Production costs are slightly lower than the national average. The average yield is 6,957 liters per milk cow and 7.2t/ha for wheat. The amount of decoupled payments per hectare should decline to €259/ha in 2020 from €334/ha in 2013 (consequence of the convergence of subsidies that is partially offset by the over-allocation for the first hectares), to which we must add €34 of coupled support for the first 40 milk cows from 2015 on. Calculated per ton of milk, this is equivalent to a total amount of first pillar support of €40 in 2013, which is about to fall to €32 in 2020. The farm net income is computed by including revenues from milk, byproducts from the dairy herd (cull cows and calves) and cash crops. The findings of farm net income estimation for 2015-2020 are presented in the following graph.

Estimation of a typical dairy farm's net income
France's Western Region, €/t

Sources: FDSEA51, Momagri
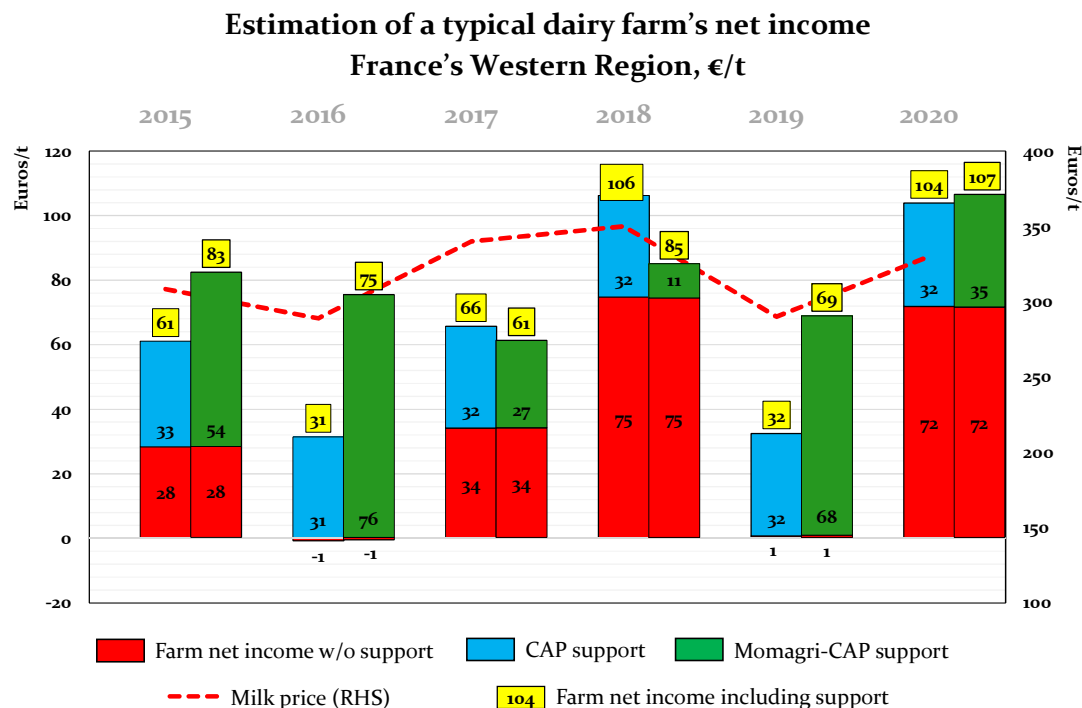
2015-2020	CAP	Momagri-CAP
Average farm net income (€/t)	67	80
Minimum farm net income (€/t)	31	62

The projections of farm net income for the 2015-2020 period reveals the Momagri-CAP's ability to provide more support to agricultural incomes while avoiding harmful fluctuations. The decoupled payments of the current CAP leaves dairy farmers' income to swing to and fro with market fluctuations. On the contrary, the Momagri-CAP stabilizes farm net income by compensating shortfalls in difficult years. As a result, for the 2015-2020 period, the average farm net income per ton of milk is considerably (19%) higher with the Momagri-CAP: €80 against €67 with the CAP. In addition, the minimum net income level with the Momagri-CAP is twice that of the CAP (€62/t vs. €31/t).

The Momagri-CAP proposal could therefore efficiently curb the negative impact of bad years on incomes while still having a bullish impact on farmers' earnings under the price assumptions we used here.

5. The Treaties and budget rules already allow the necessary flexibility for the Momagri-CAP

Adopting the Momagri-CAP assume that budget commitment and payment appropriations are adapted each year according to market development. Therefore, the Pillar 1 budget allowance

should vary following market conditions of three major agricultural sectors that the Momagri-CAP is applied to (grains, milk and oilseeds/protein crops).

What the EU treaties and regulations say?

From the analysis of the Treaty on the functioning of the European Union (Title II – part 6), the 1311/2013 regulation defining the 2014-2020 multi-annual framework, and the regulation related to financial rules under negotiation (namely Omnibus regulation), we can retain the following principles[29]:

1. The only benchmark that an appropriation cannot go beyond is that of the multi-annual financial framework (MFF).

2. At present, the (2014-2020) multi-annual envelop is divided in equal parts to obtain the annual budget. But the EU Treaties do not specify that the CAP annual budget must be equal to one-seventh of the MFF.

3. In contrast, the budgetary authority has to fix an appropriation limit. Under multi-annual perspectives, nothing prevents it from fixing each year an appropriation limit corresponding to a crisis scenario which is higher than the annual average budget to respect over the multi-annual period.

4. The regulation of November 13, 2013 defining the MFF paves the way to variable management of budget spending (see Art.5 and 6) since it explicitly stipulates that the prefixed limits can be exceeded by an amount equal to the gap between executed payments in the previous year and the limit of the current year (up to €10 billion in 2020).

5. In this way, the amending budget, appropriation carryover and reserve fund schemes would enable the management of necessary budget variability and the budget spending adjustment before the end of the fiscal year. This will avoid the year-over-year transfers bigger than the usual carryovers laid down in Art. 316 of the Treaty on the functioning of the EU.

6. The Omnibus provisions under negotiation approve the need to relax the budget functioning and increase its flexibility particularly in crises and cases of emergency.

Constructing variable annual budget in the respect of the multi-annual financial framework (MFF)

To implement the Momagri-CAP, the CAP Pillar 1 budget will be evaluated each year for the "Countercyclical payments, stockpiling and other regulation measures" section for "grain, milk and oilseed/protein crop" sectors. There will be annual variability according to market situation, beside the Europe Quality Aid which is of fixed amounts.

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[29] For a detailed analysis, see http://www.momagri.org/UK/focus-on-issues/Why-Momagri-s-proposals-fully-respect-the-European-Union-treaties-and-regulations-_1855.html

Therefore, the budget procedure for the concerned sectors relies on a central expenditure scenario based on price forecasts, a reserve fund and an amending budget. The timeline of the budget construction will be set as follows:

- ***The central scenario***

  Within the year n budget discussions which take place from September 1st to late December of year n-1 (See Art. 314), the budget draft will establish a budget spending outlook based on market development forecasts. It could then include the appropriations concerning countercyclical payments, public stockpiling and all complementary regulation measures, with a reduced margin of error. This is the central scenario.

- ***The annual reserve fund***

  By elaborating the year n budget, it is however necessary to envisage a possible price deterioration and to build up an annual reserve fund accordingly to meet additional appropriations needs for countercyclical payments, public stockpiling and all complementary regulation measures. A projection will be established for this purpose based on a sharper deterioration simulation compared to what is expected in the central scenario.

- ***The amending budget***

  In the year n+1 budget project presentation, an amending budget for year n will be submitted. At this time of the year, i.e. prior to October 15th, price levels and intervention needs for year n will be already known. The amending budget will set out the extent to which the reserve fund will be used according to market price developments.

  The budget authority will determine, but with much more certainty, the Pillar 1 budget appropriations needed for year n. All of this will be carried out in the respect of the annual appropriation limit defined over a crisis scenario within the multi-annual perspectives (see Art. 312.3).

- ***The carryover to the following year***

  Given the spending adjustment through the amending budget, the potential credit carryover to year n+1 will be limited, respecting the Treaties' provisions (Art. 316).

  Yet the very process of drawing up budgets, as outlined here, does not involve any appropriations carryover. This is because the conception of a new central scenario then a reserve fund for year n+1 will be done on September 1st of year n, at the same time that the amending budget is presented to the budget authority.

The only new constraint related to the Momagri-CAP project application is that the Commission will have to develop simulation tools and expertise on market evolution which are more sophisticated than what available today.

A two-level regulation mechanism

The floor price and public regulation threshold for each sector will be set by the budget authority—European Council and Parliament. The former should be stable over time. The agricultural income and market regulation will be realized in two levels:

- Under existing rules and based on the effective equilibrium and floor prices, the European Commission will be in charge of all stockpiling and complementary regulation measures besides countercyclical payments.

- The budget authority may initiate some further and exceptional intervention if the regulation measures taken by the Commission are not sufficient to recover the market equilibrium and to absorb a potential budget slippage beyond the multi-annual framework.

The conversation between these two levels should generate a righteous process in which budgetary measures—to support farmers—and market rebalancing mechanisms will complete each other to bring about budget efficiency and a true value-added for the whole EU community. We then get out of the current budget spending logic. Only required budget headings are activated at the EU level.

A simplification of the payment system

Farmers will receive the Europe Quality Aid at the beginning of the year (in February to March) which strengthens their cash flow, and the entire countercyclical payments at the end of the year (in November or December) based on the deviation of the annual average market price from the floor price. The use of historical references of harvesting areas and yields will make it easier to administer the mechanism.

In addition, the amending budget can be submitted until October 15th when price development over year n is almost known with certainty. As a result, the gap between appropriations presented in the amending budget and payments to farmers will be small, justifying the reduction or even absence of the budget carryover to year n+1.

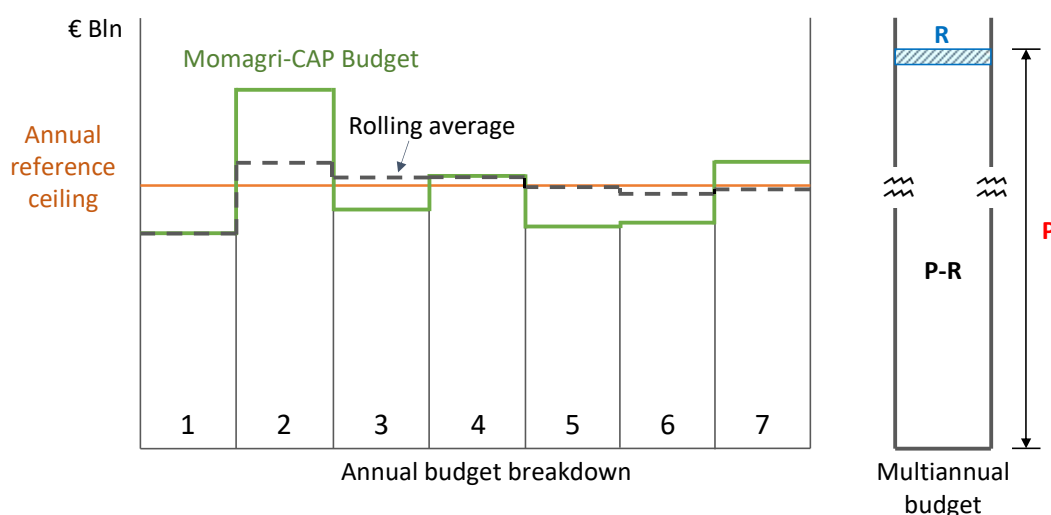**The respect of multi-annual financial outlook**

A crisis reserve for the CAP equivalent to 3% of the multi-annual envelop will be set up inside this envelop. The annual spending limit as provided in the Treaties and the financial framework will be fixed, for ease of reference, at 97% of the multi-annual package.

Every year, the gap between the payment appropriations effectively spent and the annual indicative limit will be evaluated. The average level of budget execution is calculated in moving average over the annual benchmark threshold. To this end, an estimate will be drawn up based on a sharper deterioration simulation compared to the central scenario.

If the cumulated gap in year n exceeds an amount defined by the budget authority, the crisis reserve can be activated. Inversely, if it is lower than the predefined amount, the crisis reserve will be topped up. The corresponding mechanisms stem directly from the regulation schemes already adopted in December 2013 (Art. 5 and 6 of the 1311/2013 regulation fixing the 2014-2020 multi-annual framework).

The figure below illustrates how budget is managed multi-annually.

Annual budget management layout

- Multiannual financial outlook for agriculture = **P**
- Multiannual crisis reserve = **R** = 3%*P
- Annual reference ceiling over 7 years = **(P – R)/7**

In short, it appears that the Treaties and budget rules, in their current form, already allows implementing annual budget variability for the CAP Pillar 1. By calling for variable national contributions—closer to actual needs, it will not be necessary to rely on a multi-annual budget in which credits are transferred from one year to another. We are therefore getting out of the budget spending logic which currently prevails. Instead, a virtuous dialogue between the EU level and the budget authority will be in place. This is to attain better effectiveness of public expenditures through a good policy-mix between budgetary support measures and market rebalancing ones, to offer a true EU-wide added value.

6. Extension to other sectors

In this White Paper, we suggest the transformation of decoupled support into countercyclical payments for the grain, oilseed/protein crop and milk sectors. For the other sectors, we assume the conservation of measures currently at work but it seems that some sectors could be included in our proposed countercyclical system.

Counter-cyclical subsidies seem particularly to fit with agricultural commodities whose prices fluctuate with international trade. Sugar, recently affected, could benefit from a countercyclical mechanism. The payment calculation can be done in two ways, either by creating a specific system for sugar based on sugar beet equilibrium price and the corresponding floor price, or by referring to the basic areas—which give the entitlement to countercyclical payments for grains—to deduce sugar beet support. Our proposed countercyclical payment systems relies indeed on historical references, not on real production, which enables equivalent application among production chains.

The other field crops—potato, flaxseed, etc.—which all benefit from decoupled subsidies at the present would also be allocated grain area equivalence. We can equally imagine the association of the grain support-linked referenced areas and a type of coupled support to account for yield difference—for durum wheat for instance. Animal sectors could be incorporated in the countercyclical support system as well, think for example of cattle fattening.

For the rest, it seems important for us to specify that the countercyclical support benefit can be limited for some products. Some production chains have more to obtain from collective organization-based facilities (cooperatives and inter-professional organizations) and support to modernization through investment support notably. It is the case for the wine or vegetables and fruits sectors. In addition, applying the principles that we develop here must also take into account the current or future support forms: the large amount of coupled payments, the compensatory allowance for permanent natural handicaps and possibly support for pastures whose carbon capture must be included.

The assessment criteria to be considered to deepen the thought on the transposition of the countercyclical mechanism proposed in this White Paper are as follows:

- Level of differentiation between products,

- Level of trade openness/size of involved market,

- Level of farmers' and production chains' organization,

- Existing alternative kinds of support,

- Intrinsic characters of the product (ability to be stockpiled, mass, etc).

Adopting a system of counter-cyclical subsidies would clearly not exclude other forms of implemented or foreseeable forms of regulation. The specific nature of each production could thus engender variations on the principles that we have presented for grains, oilseeds/protein crops and milk.

Conclusion

The Momagri-CAP project has to restore the agricultural community's hope in its future, and give Europe the opportunity to renew with ambitious strategic objectives for its agriculture and agro-food industries.

The systematic spotlight given to the CAP budget cost, yet very low compared to the challenges of the sector (less than 0.4% of the European GDP), has become an ideological deterrent to the necessary reforms. This has also resulted in harmful decisions mostly generated by ideological positions, lack of vision and political courage to break away from the directions chosen in the 1990s.

At a time when the Doha Round seems totally ill adapted to food security and international cooperation objectives, it is now urgent to change by engaging ourselves in a thorough and bold reform.

The reform proposed by Momagri meets the objectives of market regulation and farm income stabilization. It also improves the added value of EU expenditures and creates budgetary leeway. Although it will be necessary to alter budget procedures and overcome the counterproductive constraints imposed by the WTO, a switch to the Momagri-CAP is worthwhile. Indeed, decoupling has caused an economic illusion that almost brought about a disembodying of public support, i.e. bureaucracy interference and ineffectiveness.

The debate on our proposal has been initiated. It is now necessary to implement the policy change to give it all the chances of success it deserves. This is why we publish this revised version of the White Paper in late-2017, as the Commission with its recent communication does not seem able on its own to suggest a trajectory change for the CAP, particularly in a context of severe agricultural crisis. We hope that our proposal provides the European Commission and the Parliament, the governments of Member States, the European Council and the representatives of agricultural communities with the opportunity of a serious reflection on the feasibility of a project that will renovate one of the key European policies, and thus resolve a deadlock that fuels Euro-skepticism on a daily basis.

Established on the initiative of several French agricultural cooperatives, Momagri is a think tank chaired by Christian Pèes, gathering agricultural leaders and personalities from various backgrounds.

Since its creation in 2005, Momagri works primarily on the causes and consequences of the structural instability of agricultural markets as well as the analysis of agricultural policies in the world, in order to shed some light on the impacts of trade liberalization without adequate safeguards and the stakes of a renewed global agricultural governance.

Momagri's mission is to create new assessment tools and put forward proposals for agricultural policies that are adapted to the XXI century challenges in France, Europe and around the world.

This white paper has been written by Frédéric Courleux and Jacques Carles.

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