

# The externalities of livestock farming : hidden costs, real costs

Exploring the bibliography. *Anne Vonesch, 2023*

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# Introduction

***"Externalities and other market failures lead to unintended consequences for present and future generations, destroying nature and perpetuating social injustices such as underpayment for workers, food insecurity, illness, premature death and other harms. We urgently need to address the fundamental causes of these problems".<sup>1</sup>***

Prices that are too low because they do not reflect real costs create market distortions. They encourage consumption and therefore the production of more deceptively cheap products with their deleterious impacts, and discourage the purchase of products that generate fewer negative externalities but are sold at higher prices.

With so much at stake, the debate is lively and divisive. Depending on one's convictions and the interests one is defending, one sees in livestock farming above all the positive externalities (environmental, social, economic...) or above all the negative externalities. Often these impressions and assertions are based on generalisations, shortcuts and even deceptions; this is what will be examined in the last chapter, under the heading "*Vigilance and warnings*". As for scientific calculations, they produce results that reflect the method and conventions used.

The assessment of systems based on environmental criteria, by environmental specialists and zootechnicians, is often hampered by a lack of skills and motivation for anything to do with the needs of animals and their welfare, and therefore by the exclusion of animal welfare and ethical issues. The current challenge is to include this issue.

To tell the truth, what is going wrong and where we need to go from here is well known. But the rules of society dictate that the evidence of agronomy, ecology, public health, responsibility and decency must be transcribed into economic terms, in much the same way as in theology, where it must be demonstrated that the moral duty of the moment is in line with what the sacred texts say. The hope is that the evaluation of externalities will raise public awareness and provide effective tools for political decision-makers.

In view of the damage externalized, there is controversy over the policy choices to be made: **efficiency, substitution or redesign of the system in question ?**

- **should improvements be made at the margin**, because the positive externalities of livestock farming are sufficiently significant, and the negative ones can be reduced by accumulating percentages of reduced impact here and there? This option is readily accepted by the farming profession, provided that it is accompanied by public funding and that production is maintained.
- **Or do we need to change the system**, because the negative externalities are irrecoverable, and the positive ones require a break with the present in order to be truly expressed? This is the option favoured by those who defend small-scale farming. It presupposes a major change in mental representations and a reduction in production. But funding is not guaranteed as long as the CAP finances everything and its opposite, and above all the status quo, and the dominant part of the industry is blocking change.

A sincere assessment of externalities will be part of the "real talk" that everyone needs.

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<sup>1</sup> The true cost of food, UNFSS, 2021

# A scientific look at positive externalities

## INRAE: Ecosystem services (ES) provided by agricultural ecosystems, November 2017<sup>2</sup>

This summary focuses on the analysis of the agricultural ecosystem defined as the plot's soil-plant system. It is based on CICES<sup>3</sup>, whose typology has been revised, and MEA<sup>4</sup>, and in France on EFESE<sup>5</sup>. These SE consist of the supply of inputs and regulation (soil, nutrients, pollination, regulation, carbon, nitrogen and water cycles, etc.), which generates benefits primarily for the farmer. The analysis involves simulating a large number of interactions between practices and soil and climate units, and testing alternatives. Next, the SEs provided by agricultural ecosystems to society are studied: modulating climate change and the spread of pollutants, and cultural SEs: recreational, aesthetic and spiritual. The level of correlated negative impacts was also estimated, with a comparative analysis. It is emphasised that "*knowledge of the level of one [SE] does not allow direct inference of the level of the other [environmental impacts]*"<sup>6</sup>.

As for the economic evaluation of SE, this study focuses on the difficulties and limitations.

As far as livestock farming is concerned, grazing animals are a component of the ecosystem, and at the same time they are an agricultural commodity. Its role as a supplier of ES has yet to be analysed.

To assign an economic value to SE, the replacement cost and avoided damage methods were used.

## INRA study "EFESE-écosystèmes agricoles"- 10.4. Production of animal goods

The chapter (page 803) begins by listing the "*importance of livestock farming in the functioning of the agricultural ecosystem and for the production of animal goods*". The 5 points that follow begin by positivising the role of livestock farming in a way that gives rise to fears that a favourable bias, rooted in the INRAE tradition, may relativise the objectivity of this approach, which supports the "*importance*" of livestock farming:

- recycling of by-products and services provided by spontaneous vegetation
- in terms of land use, promoting functional diversity
- mixed crop-livestock systems considered to be sustainable
- a major technical and economic orientation in France
- animal products essential for human consumption.

The bias lies in the generalisation of favourable assertions, when these deserve to be strongly qualified and placed under conditions (see our last part: points to watch out for and warnings). Similarly, the undifferentiated recitation of the SIQOs<sup>7</sup> suggests that this could be a politically correct and somewhat euphemistic approach. What follows is an assessment of the capacity of Small Agricultural Regions (SARs) to feed their livestock with food produced in these same SARs. - It is not clear what this assessment adds to what we already know about certain imbalances. With such an analysis of '*ecosystems*' limited to the feedstuffs that produce '*animal goods*', and therefore to the know-how of zootechnicians, we are left wanting more.

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<sup>2</sup> <https://www.inrae.fr/sites/default/files/pdf/efese-services-ecosystemiques-rendus-par-les-ecosystemes-agricoles-resume-francais-3.pdf>

<sup>3</sup> Common international classification for ecosystem services

<sup>4</sup> Millennium ecosystem assessment

<sup>5</sup> French Evaluation of Ecosystems and Ecosystem Services

<sup>6</sup> page 6 of the summary

<sup>7</sup> "Signes d'Identification de la Qualité et de l'Origine" official labelling for so-called quality and origin, which in reality include the best and the worst

Curiously, the key messages for decision-makers<sup>8</sup> on agriculture have nothing to say about farm animals.

### **ESCO INRA-DEPE: Roles, impacts and services provided by livestock in Europe, December 2016<sup>9</sup>**

This book is a small encyclopaedia that takes a balanced, well-documented approach. It also reinforces the points of vigilance and warning highlighted below. It develops the concept of packages of services at regional level. Externalities and trade-offs between services vary according to agricultural regions, which combine production and vitality services with environmental and heritage services in contrasting ways. Two key factors emerge: animal density and animal feed, with particular emphasis on grassland. Their use must remain relatively extensive in order to benefit from biodiversity. A stocking density > 1.2 LU/hectare for a presence of 200 days per year can lead to carbon destocking (page 55 of the summary).

### **Observatory of Resources Incorporated into Feed Flows<sup>10</sup>**

The ORIFLAAM project seeks to find out: who eats what? This ongoing project, led by CEREOPA in conjunction with partners in the feed and food sectors, aims to create a database on the use of agricultural raw materials and to monitor the supply of feed to French livestock on an ongoing basis. *Comment: this could help to assess externalities, but risks generating greenwashing.*

### **Towards a reference system for material flows in the French agricultural sector.**

RMT Filarmoni, TERRIFLUX, BASIC, with the support of FranceAgriMer and ADEME<sup>11</sup>

## **Focus on negative externalities: hidden costs**

### **True Price<sup>12</sup>**

True Price Foundation has developed a method for calculating true prices<sup>13</sup>. The true price of things is the other side of their hidden costs. Hidden costs should be incorporated into market prices to correct distortions and loopholes. The true price takes into account the rights that must be respected: human rights, labour rights and environmental rights. Externalities are the environmental and social effects that undermine all these rights. Their costs are assessed on the basis of the costs of repairing them; this is the true price gap.

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<sup>8</sup> [https://www.ecologie.gouv.fr/sites/default/files/EFESE-Messages\\_cles.zip](https://www.ecologie.gouv.fr/sites/default/files/EFESE-Messages_cles.zip)

<sup>9</sup> <https://www.inrae.fr/actualites/roles-impacts-services-issues-elevages-europeens>

<sup>10</sup> ORIFLAAM. Presentation to the FranceAgriMer Steering Committee on 15 June 2023

<sup>11</sup> Presentation to the FranceAgriMer Steering Committee on 15 June 2023

<sup>12</sup> <https://trueprice.org/> and <https://www.truepricefoundation.org/>

<sup>13</sup> <https://www.truepricefoundation.org/wp-content/uploads/2023/03/2020-03-04-Principles-for-True-Pricing-Trueprice.org-Consultation-Draft.pdf>

## **The hidden costs and fair price of our food: between the market, the state and the common good.** <sup>14</sup>

SO WHAT ? Policy Brief n°19 May 2022 UNESCO Chair World Food Programme

External costs can include human health, the environment including loss of biodiversity, the economy including imports and subsidies, job insecurity and working conditions, and malnutrition. The highest external costs are those relating to animal products.

According to this text, the integration of external costs would roughly **double the price of food**.

## **Environmental Prices Handbook EU28 version 2018** <sup>15</sup>

(Environmental Prices Handbook 2023 is only available in Dutch)

It presents two calculation models, one based on the cost of the damage generated, the other based on the cost of avoiding this damage. The Handbook will propose a combination of the two for climate change. The uncertainties are major; in the literature we find costs per tonne of CO<sub>2</sub> between €1 and €500. The method based on reducing emissions gives costs that rise from €25/tCO<sub>2</sub> in 2020 to €85/tCO<sub>2</sub> in 2050. In fact, the more ambitious the emissions reduction target, the higher the price. If the 2° objective is to be achieved, the price could even rise to €1,000/tCO<sub>2</sub>. The Handbook chooses an average ambition and estimates the cost per tonne of CO<sub>2</sub> at €57 in 2015, €95 in 2030 and €190 in 2050 (page 95).

Environmental prices depend on trade-offs between options that vary considerably, depending on the methods and priorities adopted.

Subjective human well-being is taken into account, but not the well-being of animals.

## **External Costs of Animal Sourced Food in the EU** <sup>16</sup> . Study on the externalities attributed to current value chains of EU production and consumption of animal sourced food - and opportunities for change.

The external costs of food production from animals are €1,568 billion, around 7.6 times higher than the economic costs of production. Of these, 45% are linked to poor animal welfare, 28% to diseases caused by food, 12% to pollution and 7% to land use. As for consumption (which excludes exports but includes imports), the percentages are close. These costs remain underestimated because certain effects have not been taken into account (deforestation, antibiotic resistance). Cattle account for most of the impact on health, while poultry account for most of the animal distress caused by their large numbers. The costs are real and immediate. Around 1/5 of the impact of climate change can be attributed to GHGs from meat and milk production.

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<sup>14</sup> Jean-Louis Rastoin, Institut Agro Montpellier. SO WHAT ? Policy Brief n°19 May 2022 UNESCO Chair World Food <https://www.chaireunesco-adm.com/No19-Couts-caches-et-juste-prix-de-notre-alimentation-entre-marche-Etat-et>

<sup>15</sup> [https://cedelft.eu/wp-content/uploads/sites/2/2021/04/CE\\_Delft\\_7N54\\_Environmental\\_Prices\\_Handbook\\_EU28\\_version\\_Def\\_VS20\\_20.pdf](https://cedelft.eu/wp-content/uploads/sites/2/2021/04/CE_Delft_7N54_Environmental_Prices_Handbook_EU28_version_Def_VS20_20.pdf)

<sup>16</sup> April 20, 2023. A Rusman, L Heuberger, M Huzen, S Reimers, C Barette, D Aberg. IMPACT INSTITUTE. Commissioned by Eurogroup for Animals. <https://www.impactinstitute.com/external-costs-of-animal-sourced-food-in-the-eu/>

In the "better" scenario, the impact is reduced mainly thanks to organic farming and improved animal welfare. However, the positive effects of organic farming are underestimated by the LCA on which the estimates are based.

The scenario of "less" food of animal origin allows a reduction in externalised costs in all areas, resulting in 1,146 billion (79% of the baseline). In conclusion, it is important to reduce the consumption of animal products, as animal welfare is linked to the environment and human health, in particular through extensification and the reduction of animal densities.

The method consists of multiplying the footprint indicators by the corresponding monetisation factor. Footprint indicators are e.g. CO<sub>2</sub> equivalents. The monetisation factors are based on the cost required to remedy the negative effects on society, i.e. to restore, compensate, prevent recurrence and compensate for violations of the universal rights of present and future generations<sup>17</sup>. For greenhouse gases, this amounts to €0.163/kg CO<sub>2</sub> -eq. Calculations relating to animal welfare are presented in the next chapter, below.

There are three types of impact: social (society), human (individual) and environmental.

The social impact includes animal welfare and underpaid work.

The human impact includes zoonoses, antibiotic resistance and nutrition-related diseases.

Environmental impact includes air and water pollution (which is also a human impact), climate change, land use, soil quality and loss of biodiversity.

### **Moving towards a Sustainable Swiss Food System: An Estimation of the True Cost of Food in Switzerland and implications for stakeholders<sup>18</sup>**

This 2020 thesis collects 100 externalities and prioritises only 28 of them (so the total cost will be underestimated), to evaluate 8 Swiss products including milk, cheese, chicken and beef. The external costs amount to CHF 0.87 per CHF spent. At national level, this represents CHF 37 billion in food expenditure and CHF 33 billion in externalised costs, including CHF 14.8 billion for human health, CHF 10.4 billion for biodiversity, and the costs to livelihoods are underestimated due to a lack of data.

**Animal products give the highest costs, based on environment, biodiversity and health, i.e. respectively 53% higher than the retail price (cheese) and + 38% (chicken) and + 125% (beef).**

The 28 impacts selected include 7 for the abiotic environment, 7 for biodiversity, 3 for living standards and health and safety at work, 8 for human health (mostly linked to consumption and measured in DALYs), 2 for the economy (taxes for subsidies and for regulation and research), and 1 for animal life years in suffering (ALYs) - see some details below.

Externalities are monetised using True Price factors. The author notes that the costs of biodiversity exceed the costs of climate change, even taking the lowest monetisation factors for biodiversity and the highest for greenhouse gases. It is therefore important not to limit action to the climate field.

### **United Nations Food Systems Summit (UNFSS) 2021: The True Cost and True Price of Food<sup>19</sup>**

At global level, food consumption amounts to \$9,000 billion and externalities to \$19,800 billion, i.e. \$7,000 in environmental costs, \$11,000 in costs to human life and \$1,000 in economic costs. So food would be 3 times more expensive if these costs were internalised. Market incentives will have to be aligned with social values, human rights and development objectives.

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<sup>17</sup> UN Guiding Principles on Business and Human Rights, a rights-based approach. See Principles for True Pricing, True Price Foundation, 2020

<sup>18</sup> Alessa Perotti, Master Thesis, 09/2020, ETH Zürich

<sup>19</sup> [https://sc-fss2021.org/wp-content/uploads/2021/06/UNFSS\\_true\\_cost\\_of\\_food.pdf](https://sc-fss2021.org/wp-content/uploads/2021/06/UNFSS_true_cost_of_food.pdf)

## UNFSS: The True Cost of Food<sup>20</sup> . Special event 24 July 2023

This event, as part of the United Nations Food Summit 2023, talks about 'true cost' for (just) one hour. The failure to take account of hidden costs allows business as usual. Priorities vary. Among the speakers, Kenya and Indonesia focused on food prices in the face of malnutrition. Brazil is presenting a new global policy to address poverty, malnutrition and environmental impacts. An Indian experience and one in Mozambique look at implementation, with GAIN in Mozambique addressing the problem of animal proteins in the case of people who do not consume them at all and who have high nutritional needs, so providing them with animal proteins while remaining within the bounds of environmental acceptability. Switzerland has decided, at parliamentary level, to study the externalities of its food system (half of its food is imported) with a view to initiating the transition. This is also planned by the FAO, which published a document in 2016<sup>21</sup> and "takes these issues very seriously". On behalf of Rabobank, it is essential that these hidden costs are taken into account, as the 'risk' and 'return on investment' indicators are totally inadequate. The banks have also worked on integrating the carbon issue, but that's not enough. We need to look at social issues, biodiversity, water... and work on good nutrition. So we need to reward, but also punish.

## Calculation of external climate costs for food highlights inadequate pricing of animal products<sup>22</sup> (Germany, 2020)

The aim is to assess the externalised costs of different production systems in Germany. In this case, we are only talking about costs in terms of greenhouse gases. The damage cost of 1 t of CO<sub>2</sub>eq is estimated at around €180 (according to the German Environmental Agency) and could reach €400 by mid-century. The influence of production methods is less significant than the difference between product categories. Changes in land use are not taken into account, although organic farming is not affected by these emissions. Ruminants have the highest emissions, and pulses the lowest. The increase in producer prices, if climate costs are taken into account, is between 1% (vegetables) and 72% (cereals) for conventional production, and 0% and 12% respectively for organic farming, which is very advantageous for plants. In livestock production, **the increase is 17% for eggs (18% when land use change = LUC is included), 138% (165% with LUC) 132% for ruminants (197% with LUC) 74% (128% with LUC) for pigs. In organic farming, the values are 9%, 154%, 173% and 42% respectively; they are still favourable, but not by much, thanks to the absence of deforested imported soya**. On average, animal products, whether conventional or organic, have a GHG cost of €2.41/kg of product. In all other categories, organic farming does significantly better. The percentage price increases are lower for organic products because they are already more expensive to begin with.

## True cost accounting of organic and conventional food production, 2023<sup>23</sup>

This publication is a follow-up to the previous one, and is particularly interesting for the scope of its approach. It examines 22 German agricultural products, comparing the externalities of conventional and organic production. It draws on LCAs and monetisation factors, while examining the effects of different variables, such as different yield levels and the use of more or less manure in organic

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<sup>20</sup> <https://www.unfoodsystemshub.org/fs-stocktaking-moment/programme/the-true-cost-of-food/en>

<sup>21</sup> Patrick Holden: The true cost of food. Sustainable Food Trust, 2016

<sup>22</sup> M Pieper, A Michalke, T Gaugler : Calculation of external climate costs for food highlights inadequate pricing of animal products. Nature Communications 11, article number 6117 (2020) <https://www.nature.com/articles/s41467-020-19474-6.pdf>

<sup>23</sup> A Michalke, S Köhler, L Messmann, A Thorenz, A Tuma, T Gaugler : True cost accounting of organic and conventional food production. Journal of cleaner production 408 (2023) 137134



farming. It also tests different monetisation factors from different sources, which modifies the results considerably. **For example, the Umweltbundesamt counts €0.20/kgCO<sub>2</sub>eq, while the Environmental Prices Handbook counts €0.06/kgCO<sub>2</sub>eq.** The True Price monetisation factors are the highest variant.

Based on average values, **crop production generates externalities of €0.79/kg of product in the conventional sector, and €0.42 in the organic sector. Milk and eggs generated €1.29/kg in the conventional sector and €1.10 in the organic sector, while meat (average of all meats) generated €4.42/kg in the conventional sector and €4.22/kg in the organic sector, with beef having the greatest impact.** The lower yields in the organic sector play a part in generating these results.

**As for selling prices, the internalisation of hidden costs does not make organic products any cheaper than conventional products,** even though the environmental balance sheet is clearly in favour of organic, especially for crop production. Other measures will therefore have to be added to correct the price effect. Behavioural change should move towards a more plant-based diet.

However, some of the advantages of organic farming have not yet been taken on board, such as crop rotation, ecosystem services and impacts on the soil, or public support, which takes no account of the externalities generated.

*Comment: let's add: nor animal welfare, which is better in organic farming.*

#### **External costs of agriculture derived from payments for agri-environment measures: framework and application to Switzerland<sup>24</sup>**

The idea is to assess the costs externalised through the aid granted, precisely to avoid undesirable effects. The study captures the amount of aid granted that enables the impact to be reduced by one unit (depending on its actual effectiveness), and this amount is multiplied by the total impact (the impact avoided + the residual impact). The method is applied to greenhouse gases, ammonia, nitrates, pesticides, soil erosion, habitat loss and animal suffering, since for each of these impacts Swiss agricultural policy offers incentives for voluntary reduction.

#### **Taxation as a tool towards true cost accounting. Study on the reduction of VAT (Value Added Tax) for organic products and increased taxes for environmentally unfriendly pesticides<sup>25</sup>**

The True Cost Accounting concept is used to show how differentiated taxation could encourage the least impacting production methods. This differentiated taxation could target pesticides and/or food products, by reducing taxes on organic products. Targeting pesticides would be more relevant.

*Comment: The issue of pesticides and the search for ways to apply the polluter-pays principle are highly relevant to livestock farming, given that >60% of cereals used in Europe are used for animal feed, not to mention protein crops. Plants such as beetroot and rapeseed, whose pulp and oilcake respectively are used as animal feed, are treated with particularly dangerous pesticides.*

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<sup>24</sup>F Schlaepfer: External costs of agriculture derived from payments for agri-environment measures: framework and application to Switzerland, Sustainability 12(15):6126

<sup>25</sup>IFOAM. Soil and More Impacts, 2019 [https://www.agroecologia.net/wp-content/uploads/2019/04/Taxation-as-a-tool-towards-true-cost-accounting\\_Final-Report\\_DV13.pdf](https://www.agroecologia.net/wp-content/uploads/2019/04/Taxation-as-a-tool-towards-true-cost-accounting_Final-Report_DV13.pdf)

## **Pesticides, a model we hold dear<sup>26</sup>**

*Comment: The proportion of pesticides linked to livestock farming corresponds to the proportion of land cultivated for animal feed, which includes by-products from crops whose treatment is particularly dreadful: rapeseed cake, beet pulp, etc.*

BASIC, CCFD-Terre solidaire and POLLINIS published in 2021 and updated in June 2022 a report entitled *Pesticides: a model we hold dear*. Their conclusion is that, in the European Union, the pesticide sector costs citizens 2,5 as much as it brings in for the companies that manufacture and market them: €2.3 billion directly attributable to pesticides and borne by society in 2017, compared with €0.9 billion in net profits made by the industry in the same year.

## **Vegans, vegetarians, fish-eaters and meat-eaters in the UK show discrepant environmental impacts<sup>27</sup>**

This study is based on data from 55,504 diets and 570 Life Cycle Analyses of food products. Vegan consumers and low meat eaters have much lower environmental impacts than high meat eaters. This relationship remains strong, even with large variations in origin and production methods.

*Comment: The limitation of this type of study is that it cannot say what conditions would make the consumption of animal products relevant and perhaps reduce the overall impact. Such relevance may appear for a low consumption of animal products, when animal production is limited to marginal and grassland land (provided that it does not harm biodiversity) or to the recovery of certain by-products (bearing in mind that the competition due to the multiple uses of these by-products is increasing and that priorities and hierarchies of uses can change rapidly)*

## **The hidden costs of our food<sup>28</sup>**

This publication for the general public provides a very clear summary of the various externalities, with comparative tables for the USA, the UK, Switzerland, the rest of the world and France where data are available. The hidden costs are :

*“Money spent on restoring certain common goods such as drinking water;*

*Money spent to treat chronic illnesses caused by poor diet and to pay for days not worked if applicable;*

*Agricultural subsidies, in particular to support practices that reduce impacts;*

*The money that would have to be spent to restore the quality of the commons (water, soil, air, biodiversity) that have been degraded, even if the cost is passed on to future generations;*

*The cost of food waste, which artificially increases demand for food;*

*The cost of inequalities in access to sufficient, healthy food”.*

Animal abuse and the excessive use of antibiotics are not generally quantified.

The comparison shows that **the cost of damage is close to €1** for every €1 spent on food by consumers in Switzerland and the UK, and around twice as high in the USA and worldwide. France (where there is no comparable global study) is rather better placed in terms of Body Mass Index and

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<sup>26</sup> <https://ccfd-terresolidaire.org/pesticides-cout-rapport-7204/>

<sup>27</sup> P Scarborough, M Clark, L Cobiac, K Papier, A Knuppel, J Lynch, R Harrington, T Key, M Springmann: Vegans, vegetarians, fish-eaters and meat-eaters in the UK show discrepant environmental impacts. *Nature Food*, Volume 4, July 2023, 55-574

<sup>28</sup> Michel Duru et Anthony Fardet, Les coûts cachés de notre alimentation, UP juin 2022

the share of Ultra-Processed Foods, but *"it is hardly better ranked than the USA for the use of pesticides and nitrogen fertilisers"*.

### **The cost of emissions, as seen for the IED directive. Impact assessment.**

**The impact assessment (Impact Assessment)<sup>29</sup> carried out for the revision of the IED (Industrial Emissions Directive)** includes advanced calculations of the cost/benefit balance of extending the scope of the directive, i.e. changing the thresholds for application of the directive in terms of Livestock Units so as to include more farms, which would then have to reduce their emissions. The estimated costs relate to emission reduction measures (although it is not clear which measures, and some of them are dubious and questionable) and to the administrative burden, which increases with the number of installations to be managed (without taking into account the ineffectiveness of current controls<sup>30</sup>). The benefits relate to the expected savings thanks to a certain reduction in damage to the environment and human health, based on a certain drop in the proportion of pollution generated by livestock farming activities. **The measures proposed by the Commission to integrate cattle farming and a larger number of pig and poultry farms would generate a benefit for health and the environment of €5.5 billion per year, for a cost of €265 million to comply with standards and an administrative cost of €223 million, giving a very favourable cost-benefit factor of 11.** The European Parliament has rejected the Commission's proposal, but for the wrong reasons.

However, **the weaknesses of this impact study and of the entire FDI approach are numerous:**

- a compartmentalised approach focusing on emissions, but with the notable progress of wanting to include GHGs, which was not the case previously with the definition of Best Available Techniques (BAT)
- great uncertainty about future BAT, given that the industries have always been able to get the least restrictive BAT adopted in the 'Sevilla process' (meetings at which it is decided what will be considered as 'BAT'; the industries are well represented there)
- the BATs mentioned in the impact study are adapted to industrial livestock farming with the aim of maintaining and perpetuating it, which can only aggravate the conflict between society and its agriculture
- with the European Commission betting on feed additives for cattle to reduce methane emissions
- insufficient and ineffective controls
- a total lack of thought and consideration for what would be sustainable, agro-ecological farming methods
- total lack of consideration for animal welfare in IED procedures
- a total lack of reflection and consideration of what a sustainable food system would look like, and in particular a total lack of consideration of land use, animal feed production, pesticides, biodiversity, etc.
- structural perversion, given that authorisation would be based on controlling emissions per animal, without taking into account the sum of the animals at farm and regional level; the method rewards the intensification of mass production

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<sup>29</sup> [https://environment.ec.europa.eu/topics/industrial-emissions-and-safety/industrial-emissions-directive\\_en](https://environment.ec.europa.eu/topics/industrial-emissions-and-safety/industrial-emissions-directive_en)

<sup>30</sup> Report by the Cour des Comptes: Les installations classées pour la protection de l'environnement dans le domaine agricole, 2022 <https://www.ccomptes.fr/fr/publications/les-installations-classees-pour-la-protection-de-lenvironnement-dans-le-domaine>

- an intellectual swindle about the supposed merits of methanisation 'BAT': the supposedly favourable climate assessments are based on arbitrary conventions which take into account the following factors
  - liquid manure (considered to be waste) enters the system without any carbon load, whereas in reality livestock farming has a major impact on the environment, including the climate; methanisation improves the GHG balance of pig production by only 7%. Liquid manure does not produce methane to any great extent.
  - that biomass would be neutral for the climate, when in fact there are far more appropriate and useful ways of using it than feeding animals in order to produce far too much animal protein for food

In short, anaerobic digestion of liquid manure is largely based on structural and unsustainable waste. To a large extent, it produces **a gas derived from animal distress**. This is shocking.

**In conclusion, the IED Directive demonstrates the abuses and damage caused by compartmentalised approaches. It is simply unrealistic (and irresponsible) to want to control externalities while maintaining the activity that generates them, without touching the doctrine of competitiveness through the lowest production costs.**

## Focus on animal welfare

### **True cost accounting agrifood handbook<sup>31</sup>**

Animal welfare is not included, as it is in so many other assessments. This clearly shows that there is a major gap in the usual approaches. Systematically causing animal suffering would not have any monetary impact !

### **European Court of Auditors (ECA): Transport of live animals in the EU: challenges and opportunities<sup>32</sup> .**

The quality of transport is not taken into account in transport costs or in the price of meat. Economic interests are driving non-compliance with legislation. The Farm to Fork strategy promotes the transition to a more sustainable food system. There is a relationship between the amount of meat consumed and the number of animals transported. The economic impact of suffering can be seen in terms of seizures at the abattoir, linked to injuries, which penalise the producer, or in terms of transport to the abattoir of animals unfit for transport, which can bring a considerable gain to the producer.

**The ECA's various recommendations include assigning a monetary value to the suffering of animals during transport** and factoring this into transport costs and the price of meat. The review of European legislation is an opportunity to develop a methodology for internalising the costs of animal

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<sup>31</sup> ThinkTank for Sustainability, [https://tca2f.org/wp-content/uploads/2022/03/TCA\\_Agrifood\\_Handbook.pdf](https://tca2f.org/wp-content/uploads/2022/03/TCA_Agrifood_Handbook.pdf)

<sup>32</sup> European Court of Auditors : Review 03/2023 Transport of live animals in the EU: challenges and opportunities

suffering in transport costs and meat prices and minimising the economic incentives not to comply with the legislation.

**External Costs of Animal Sourced Food in the EU (continued from page 6)**<sup>33</sup> for the section on animal welfare.

We saw above (page 7) that this study puts the figure for externalised costs at a very high level, and that almost half of this high cost relates to animal welfare. The study was commissioned by Eurogroup for Animals, the European federation of animal protection NGOs. It has the merit of taking an interest in an issue that is rarely evaluated when it comes to externalities, even though it is of the utmost relevance.

The method is based on that used to assess the loss of healthy life expectancy for humans, taking the following factors into account:

- quality of life (the indicators used are very limited)
- life to slaughter
- slaughter time incl. transport
- number of animals concerned per kg of product
- the moral value of animal species compared to humans based on the number of neurons

The impact of low welfare levels on European livestock production is estimated at €712 billion for 2022, with **€8.95/kg for red meat, €22.01/kg for white meat, €0.50/kg for milk and €10.60/kg for eggs**. The variations are due to the different weights of the animals, different life spans, different qualities of life including access to pasture and density inside buildings. The assessment of animal welfare is based on the concept of the five domains<sup>34</sup> : in addition to nutrition, the physical environment, health and behavioural interactions, the aim is to give animals the opportunity to adopt rewarding behaviours specific to their species.

The calculation is based on the monetisation of the value of human life, by multiplying the human DALY (Disability adjusted life years) with the length of life and suffering of the animal and with a figure representing the moral value of the animal. For humans, this moral value is 1, for cattle 0.035, for pigs 0.027, for chickens 0.0038; these figures are derived from a comparison of intelligence, neuron mass, etc.

The authors stress that this method is a first attempt at evaluation and that it is likely to evolve.

**Framework for integrating animal welfare into life cycle sustainability assessment (LCA)**<sup>35</sup>

The previous publication is no doubt partly based on this one, which tests three animal welfare indicators to evaluate 8 livestock products. Unsurprisingly, it is rare for LCA, or even more to include animal welfare in scientific publications. The approach taken here is to integrate the intensity of distress, its duration and the number of animals affected. Hence the importance of referring to a functional unit such as 1 Mcal of food. Slaughter conditions also need to be taken into account. This leads to three different indicators:

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<sup>33</sup> April 20, 2023. A Rusman, L Heuberger, M Huzen, S Reimers, C Barette, D Aberg. IMPACT INSTITUTE. Commissioned by Eurogroup for Animals.

<https://www.impactinstitute.com/external-costs-of-animal-sourced-food-in-the-eu/>

<sup>34</sup> <https://www.cnr-bea.fr/2021/10/23/five-domains-model-positive-welfare-pigs/>

<sup>35</sup> L Scherer, B Tomasik, O Rueda, S Pfister: Framework for integrating animal welfare into life cycle sustainability assessment. Int J Life Cycle Assess (2018) 23: 1476-1490

- 1) ALYS = Animal Life Years Suffered. Here, the shortening of life is not taken into account, because death can be a deliverance.
- 2) AL = Loss of Animal Lives imitates the human DALYs indicator (Disability Adjusted Life Years). It assumes that animals want to live and adds up the two elements: frustration of their needs (Lives with Disability), and early death expressed in terms of fraction of life (Lives Lost). Here, all animals are equal.
- 3) MAL = Loss of Morally Adjusted Animal Lives uses AL but adds a moral value factor to Lives Lost depending on the species.

The first criterion is quality of life. Given that animals have many needs, it is recommended that several be taken into account, but here we are content with just one per species, based on the assessment by Welfare Quality<sup>36</sup>. For dairy cows and beef cattle, this will be pasture. For pigs, the available surface area (m<sup>2</sup> / 100 kg). For chickens and layers, density. Other quality of life scores are also tested. For Atlantic salmon, density. In the case of the shrimps studied, they were caught in the wild, so their maximum quality of life was 1. For insects, quality of life is estimated at 0.999. There are no standards for treating them and it is probably even more inhumane than for livestock. But their sentience is estimated to be 2,000 times less than that of chickens. - Slaughter is always a source of suffering, it's the duration that varies.

The 2nd criterion is the number involved. It results from the ratio between live weight and product fraction. Calculations are complicated by the fact that certain co-products etc are taken into account. The food produced is evaluated in terms of calories.

The 3rd criterion is time. The first criterion is lifespan, which takes into account the age of slaughter in relation to life expectancy. This is the life expectancy of the closest species in the wild, in the natural environment (not the maximum life expectancy). Then there is the slaughter time, which is measured from the moment the animal is caught and transported.

The 4th criterion is moral value. It is assessed on the basis of the number of cortical neurons, selno the species.

The article continues with a case study examining different diets. The results of the comparison are somewhat surprising, because in the end the consumption of insects, shrimps and poultry causes the most impact on the animals because of their large numbers, linked to their small size.

Clearly, such a simplified assessment of quality of life requires more comprehensive development. And the data still has to be available. The distinction between intensive and extensive farming, the inclusion of fish smaller than salmon, and the impact of agricultural crops on wildlife are all missing. Beef has the lowest impact in terms of animal welfare, but the highest in environmental terms. The reverse is true for poultry. According to these results, milk has the lowest impact in both areas.

In conclusion, the article recommends the 3Rs principle of animal experimentation: Reduction, Replacement, Refinement. So: replace animal products with plant-based products. Reduce the number of animals, overall, and by switching from poultry to pork and beef. Refining, by choosing products that come from rearing conditions that meet the animals' needs.

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<sup>36</sup> <http://www.welfarequality.net/en-us/home/>

## **A method for calculating the external costs of farm animal welfare based on the Welfare Quality Protocol<sup>37</sup>**

This method proposed by researchers at Wageningen is based on the costs of animal welfare on the farm, i.e. what it would cost to prevent and avoid damage to animals. This should not be confused with compensation for animal suffering (whereas the previous publication directly assessed the loss of quality of life, i.e. suffering). Here, welfare is assessed on the farm using the Welfare Quality method<sup>38</sup>. A level of excellence is defined. We assess how much it would cost to achieve a score of excellence. This exercise is carried out for three cases: dairy farming in Germany, pig farming in the Netherlands, and chicken farming in the Netherlands. The costs obtained are **€0.02-0.10/kg of milk, €1.00-1.36/kg of live weight of pork and €3.67-4.52/kg of live weight of chicken** respectively.

*Comment: In fact, everything depends on the relevance of the Welfare Quality method and the level of ambition that can be described as "excellence". The Welfare Quality method is the result of major international scientific collaboration. It harmonises the assessment of body condition and lesions very well, and also aims to assess the animal's mental state. However, the method is designed to work in the dominant industrial systems and allows this type of farming to get by with a score that is not brilliant, but still acceptable. Certain problems intrinsic to these systems are simply not addressed. So despite a rather modest level of ambition, this assessment of the externalities of a lack of welfare arrives at some very substantial figures in terms of externalities. These costs are expressed in terms of live weight. If we relate the cost to kg of product, it could easily double again or even more (depending on the allocation method).*

## **Moving towards a Sustainable Swiss Food System: An Estimation of the True Cost of Food in Switzerland and implications for stakeholders (continued from page 8)**

The calculation of the cost of animal distress takes into account the animal's years of suffering. The suffering is linked to the lack of open-air space and animal-friendly housing (page 21). This results in the calculation of an overall cost, but this cost has not been quantified at product level (page 29). This thesis attributes a slight health benefit to milk (0.2 CHF/100kcal), but the benefit is 3 and 6 times greater for carrots and apples respectively. It is also important to note that eating only the noblest parts of the animal leads to the production of more animals. In Switzerland, beef consumption exceeds the recommended quantities by 7.5 times.

### **Avian flu**

In March 2023, the year of crisis for all poultry combined, 25 million animals in France were affected by the virus and/or depopulation<sup>39</sup>. These crises are repeated. This represents an unimaginable waste of resources, and at the same time an ethical collapse, because livestock farming should never have come to this point in terms of the number and concentration of animals.

The cost of these animals and the cost of 'depopulation' must be included in the externalities.

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<sup>37</sup> <https://www.frontiersin.org/articles/10.3389/fanim.2023.1195221/full> A method for calculating the external costs of farm animal welfare based on the Welfare Quality<sup>®</sup> Protocol. L S M Vissers, C P A van Wagenberg, W H M Baltussen, 2023

<sup>38</sup> <http://www.welfarequality.net/en-us/home/>

<sup>39</sup> <https://www.filières-avicoles.com/actualites/l-aide-de-l-etat-sollicitee-pour-accompagner-la-reprise>

# Sucking up public money

**Detox Development: Repurposing Environmental Harmful Subsidies.** The World Bank, June 2023<sup>40</sup>

Part 2, chapters 6 to 9 deal with agricultural subsidies, studied for 84 countries. These subsidies, amounting to some \$635 billion per year, correspond to 18% of agricultural added value. At first glance, the first chapters do not seem to analyse the role of livestock farming at all, but seem to focus on nitrogen and irrigation, and are above all interested in efficiency.

Chapter 9, on the other hand, blames agricultural subsidies for the loss of 2.2 million hectares of forest per year, or 14% of annual deforestation. Livestock subsidies in the United States and elsewhere are to blame. Agricultural subsidies lead to the emission of 4.3 billion tonnes of carbon over a period of 20 years.

Deforestation induced by subsidies is held responsible for 1.3 to 3.8 million cases of **malaria** per year, i.e. the loss of 400,000 DALYs, with a loss of \$19 billion per year for the global economy.

## Special case: foie gras

Major zoonoses such as highly pathogenic avian influenza are the source of hundreds of millions of euros of public money being spent in response to "crises" in terms of compensation for loss of income and to finance the recovery of activity. The government will finance 85% of the cost of vaccinations against avian flu.

In particular, taxpayers money supports the foie gras industry. The foie gras industry bears a heavy responsibility for the HPAI epizootic.

At the same time, this money must be counted among the subsidies that run counter to sustainable development, as do subsidies for fossil fuels, for the following reasons:

- On the one hand, foie gras as it is defined (> 400gr for a duck liver) is a **pre-agony product** (without detailing here the suffering undergone by the animal). Indeed, if force-feeding continues for a few more days, the liver becomes necrotic and unmarketable, and the animal dies. Force-feeding is also an unheard-of form of violence against the animal's body and physiology (a form of dietary rape) which, among other things, leads to a certain percentage of injuries and a net excess mortality rate during the force-feeding phase compared with the absence of force-feeding.
- On the other hand, foie gras production is a **senseless waste**. While efficiency and lower food consumption (lower Food Consumption Index = eat less and produce more) are emphasised everywhere in intensive livestock farming and in environmental assessments (Life Cycle Analyses, etc.) as an argument for acceptability<sup>41</sup> and greenwashing, here, for foie gras, all of a sudden, > 8 kg of maize is spent to produce a large pre-agonia liver in 15 days. Yet with 8 kg of feed you can produce (at a guess) 2 intensive chickens or 1 very large label chicken (which will have had a good life). So don't come telling us, in the wake of the war in Ukraine, that we want to feed

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<sup>40</sup> <https://openknowledge.worldbank.org/entities/publication/4217c71d-6cbc-46b6-942c-3e4651900d29>

<sup>41</sup> The logic of feed efficiency evengoes too far and goes beyond ethical limits. Efficiency is largely based on confinement, the deprivation of natural movement and exploration, the maintenance (heating) of a temperature that minimises the Consumption Index, and selection that prioritises productivity and cost to the detriment of health impacts. Foie gras combines all these perversities.



starving Africans if in fact we want to produce foie gras! What's more, the maize used for force-feeding is perhaps or probably irrigated, which adds a formidable externalized impact.

Here are a few non-exhaustive examples (these grants arrive year after year):

- Marc Fesneau, 13 September 2022: Avian flu: 1.2 billion have been put on the table ... <sup>42</sup>
- Conseil régional de Nouvelle Aquitaine: public aid carrier: Modernising Palmipèdes gras farms<sup>43</sup>
- Avian influenza: new aid measures announced by the Ministry of Agriculture<sup>44</sup>
- FranceAgriMer National aid H5N1 advance payment for economic losses, 17 July 2023 Crisis management. Envelope €95M€
- FranceAgriMer 2021 National aid Exceptional compensation for palmiped breeders and force-feeders and poultry breeders - IA H5N8 <sup>45</sup>
- etc. etc...

### **Impact of palmiped farm density on the resilience of the poultry sector to highly pathogenic avian influenza H5N8 in France , 2023<sup>46</sup>**

The density of duck farms exacerbates the zoonosis. So the industry itself is generating and sustaining the crisis, and the taxpayer has to pay in ignorance of the cause. The public money supporting the foie gras industry is being used in the manner of the "**polluter paid**", and to the benefit of the "**pyromaniac fireman**".

In conclusion, the public money used to support the foie gras industry must be fully taken into account in the externalities.

### **Special case: pork**

Here are a few examples:

- January 2022: €270 million safeguard plan for the French pork industry
- Auvergne-Rhône-Alpes Region, May 2023<sup>47</sup> : €4.635 million for the pork sector plan, including €135,000 for animal welfare projects, which is less than 3% (in addition to €175,000 for communication), for a sector in which animal distress is almost universal and unbearable. The term "*circular economy*" is now being used to describe what is no more and no less than regional agricultural productivism in cereals, oilseeds and the agri-food industry. We hear talk of 'quality' when most of the SIQO and regional pig brands do not include any credible or significant environmental or animal welfare criteria.  
➔ You have to analyse all the regional programmes to realise the scale of the public money being sucked into a sector that produces very high levels of negative externalities and which, through its charcuterie, has a formidable impact on human health.

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<sup>42</sup> <https://www.vie-publique.fr/discours/286263-marc-fesneau-13092022-politique-agricole>

<sup>43</sup> <https://aides-territoires.beta.gouv.fr/aides/49a7-appel-a-projets-plan-de-modernisation-des-ele/>

<sup>44</sup> <https://www.sudouest.fr/economie/grippe-aviaire-de-nouveaux-dispositifs-d-aides-annonces-par-le-ministere-de-l-agriculture-15969590.php>

<sup>45</sup> <https://www-rec.franceagrimer.fr/Accompagner/Dispositifs-par-filiere/Aides-de-crise/Indemnisation-exceptionnelle-des-eleveurs-et-engraisseurs-gaveurs-de-palmipedes-et-des-eleveurs-de-gallinacees-influenza-aviaire-H5N8>

<sup>46</sup> <https://veterinaryresearch.biomedcentral.com/counter/pdf/10.1186/s13567-023-01183-9.pdf>

<sup>47</sup> PorcMag, July-August 2023

- In recent years, the pig industry has regularly benefited from private storage financed by Europe. The persistence of the "crisis" situation led the European Commission to set up a think tank on the future of the pig industry, the result of which<sup>48</sup> was limited to *business as usual*, with fine declarations of intent, but above all the desire to maintain production and reduce its impact through biogas plants (which amounts to an intellectual swindle, see page 11).
- not to mention the money spent in the name of the fight against green algae...
- etc etc

**The transport of animals** is generally a major risk factor for the spread of epizootics and zoonoses. It is also a major cause of animal suffering. The legislation is totally inadequate and poorly enforced. (See also pages 12-13 European Court of Auditors ).<sup>49</sup>

However, the main objective of the public authorities and veterinary services is to develop and secure trade, with all the transport that goes with it.

The export of live animals to third countries, and in particular but not only the export of animals for slaughter, is a source of unbearable suffering.

**So aid for cattle, sheep and goats, whether indirect or coupled (as is the case for ruminants), contributes directly to producing and sustaining very serious risks of major animal suffering.**

## Positive externalities: points of vigilance and warnings

The farming profession regularly argues the environmental benefits of agriculture, and livestock farming in particular, with farmers supposedly the best protectors of nature. Farming is often presented as the solution, not the problem. There is some truth in some of these arguments, but we need to be wary of shortcuts and simplifications that evacuate a large part of the reality and ultimately distort the assessment of externalities. To assess externalities properly, we need to look at the facts as a whole, beyond a few undifferentiated statistics. We need to be very careful and clearly define the conditions that need to be met for positive externalities to be expressed.

Let's take a look at some of these shortcuts:

### "Is livestock farming good for biodiversity?"

This statement is based on the presence of meadows, pastures and hedgerows. But its relevance is limited for several reasons:

- 1) Dairy and beef production are working hard to increase productivity, and therefore to intensify grassland (where it is not turned over). But intensification is incompatible with biodiversity. What is still relatively valid for protecting water resources is no longer so when it comes to protecting fauna and in particular the diversity of invertebrates.

In the Alsace plain, for example, the extraordinary flora of lowland meadows has disappeared, with the exception of meadows protected by land ownership.

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<sup>48</sup> [https://agriculture.ec.europa.eu/farming/animal-products/pork/european-pigmeat-reflection-group\\_en](https://agriculture.ec.europa.eu/farming/animal-products/pork/european-pigmeat-reflection-group_en)

<sup>49</sup> <https://www.eca.europa.eu/fr/publications?did=63956>

In the Vosges mountains, flower meadow competitions seem to be working in the right direction. We don't yet know what the long-term impact will be of reconciling productivity and floral biodiversity. However, there is a trend towards larger herds, encouraging exchanges of cereals and manure between the plains and the mountains.

In the mountains too, pastoral improvement (supported by the public authorities) presents risks of destroying the original heathland vegetation of the sites.

- 2) Modern mowing techniques are catastrophic. The width of mowers, their forward speed and the fact that small fauna (insects, spiders, etc.) are sucked towards the rotating knives, cause the mutilation and death of the vast majority of arthropods in the grass<sup>50</sup>, which also has an impact on all vertebrates that feed on invertebrates - if the vertebrates are not themselves snatched up by the knives (fawns, broods, hedgehogs, reptiles, amphibians, etc.) or crushed. The stages that follow mowing (wrapping or drying, collection, compression, etc.) also have a major impact on wildlife. These deaths are cumulative, with each mowing during the year. As for shredding techniques, which are widely used where hay is not harvested, the impact on small fauna is even worse. Mortality is even higher. In fact, what is commonly considered to be a "service", i.e. "landscape maintenance and management", is in reality a major massacre due to the machinery used.

It is distressing to note that in the agricultural and wine-growing region of Eastern France<sup>51</sup> we find side by side the presentation of a 13.5 m (!) wide mower conditioner (the conditioner is the worst thing there is for small fauna) and a President of the Chamber of Agriculture of Eastern France insisting on the externalities around biodiversity for meadows. And what about a machine that makes 150 wrapped bales an hour?

- 3) In theory, the Charter of Good Husbandry Practices, which supposedly binds and controls the vast majority of cattle farmers in France, prohibits the destruction of hedgerows. If it were respected, we'd know. In any case, it's worth checking. There are figures on the continuing destruction of hedges in France, which is far from being offset by hedge planting, despite the fact that hedge planting is very popular, with public funding. While there are farmers who are planting hedges with conviction, and increasingly so, thanks to agroforestry, it is also often the case that local authorities are struggling to find land for hedges to which farmers are not opposed.
- 4) Certain areas are set aside from production for environmental reasons, with public money. These set-aside areas, or Areas of Ecological Interest, are supposed to harbour biodiversity. But we need to know what the effects are on biodiversity of the "maintenance" that is carried out on these areas, i.e. the shredding of the vegetation at a given time. We know that shredding kills between 30% and 90% of arthropods, depending on the species. There is a need for major innovation in terms of maintenance equipment and guidelines.
- 5) Pastoralism is reputed to preserve valuable traditional landscapes. It is wrong to confuse really extensive grazing with livestock farming in general.

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<sup>50</sup> Insect and spider friendly mowing, L v Berg, J Frank, M Sann, O Betz, J L M Steidle, S Böttinger, Landtechnik 78(2), 2023, 80-96

[https://www.researchgate.net/profile/Oliver-Betz-4/publication/370325614\\_Insect-and\\_spider-friendly\\_mowing\\_technology\\_in\\_grassland\\_-\\_overview\\_and\\_evaluation/links/644f7ef097449a0e1a6d0186/Insect-and-spider-friendly-mowing-technology-in-grassland-overview-and-evaluation.pdf](https://www.researchgate.net/profile/Oliver-Betz-4/publication/370325614_Insect-and_spider-friendly_mowing_technology_in_grassland_-_overview_and_evaluation/links/644f7ef097449a0e1a6d0186/Insect-and-spider-friendly-mowing-technology-in-grassland-overview-and-evaluation.pdf)

<sup>51</sup> 16 June 2023

- 6) It is perfectly possible to create benefits for biodiversity without involving livestock, such as agroforestry, grass strips, wetland restoration, etc. It's not a question of livestock or no livestock, it's a question of cross-compliance and CAP aid criteria.

**In conclusion, for a fair assessment of externalities, it is important not to be satisfied with statistical data on the presence of grassland, but to take account of the limitations described above.**

### **"Is it thanks to livestock farming that there are still meadows?"**

As a positive externality, grasslands provide good protection for groundwater quality. The vast majority of grasslands are used for livestock farming. They could also be used for biomass production, leisure horses or heritage wildflower management.

The problem is that most of the time, livestock farming is not as grass-based as it claims to be:

- 1) While suckler cows are grass-fed, the fattening of young males, and some of the females, is not grass-fed at all, either in France itself or for the 1 million French grazer calves exported.
- 2) As for dairy cows, it's true that France has a herd that generally grazes more than cows in other European countries (although the major producers New Zealand and Ireland do graze). But the top producers, who are also very fashionable, cannot be fed on grass. Most of the Alsace plain is zero-grazing, although there is a slight trend in the opposite direction.
- 3) As for dairy veal calves, the vast majority are fattened very intensively, in a way that is totally incompatible with the animals' needs, and this after arduous journeys that are incompatible with animal protection. The impact of the system on dairy calves and the environmental impact of dairy calves should be included in the impact of the dairy system, but this is not done, so the negative externalities of the dairy system are significantly underestimated. It should also be borne in mind that calves are slaughtered young so as not to clog up the red meat market. It is therefore impossible to argue that these calves are useful in their own right; we are in a 'by-product' and 'wasteful' mode, exploited by the feed industry, far away from grassland and biodiversity.
- 4) The system is not without its contradictions. The aim and selling point of calf fattening is light-coloured ('white') flesh, which is achieved by inducing anaemia. To achieve anaemia, the calves have to be deprived of iron and therefore forbidden to eat grass or hay, which contain iron. To such an extent that the European directive on minimum standards for the protection of calves has had to prescribe a limit on anaemia and a minimum amount of fibre to be included in the ration, as well as taking blood samples (!) from the calves to check that the average (!) anaemia does not exceed the authorised threshold. Yet a normal calf that grazes naturally with its mother eats grass from the very first weeks of its life, and gradually more and more, which induces the physiological transformation that enables rumination, and meets the calf's behavioural and emotional needs; its natural diet is milk AND grass. So it's rather cheeky of the industry to boast about the virtues of grassland while at the same time banning all veal calves from benefiting from it! For reasons which, moreover, contradict 'one health' and 'one welfare'... and we are told that we should eat red meat because it provides iron!
- 5) Not to mention monogastric livestock which, as their name suggests, are fed on concentrates and not grass. However, pigs and poultry can also eat a proportion of grass and fodder if they have access to vegetated runs. For pigs in particular, fibre is useful for their health and well-being. But pigs that benefit from generous runs with greenery are extremely rare. As for

poultry, the pseudo-free-range layout of very large farms creates a very unfair distortion of competition in relation to small farms where all the animals really go outdoors.

So livestock farming can indeed maintain grassland, but it is only a fraction of livestock farming that does so, whereas a very large proportion of the profession is committed to NOT using grass, or to using grass only for the minimum necessary for the good health of the animals. In order for livestock farming to be grass-based in a coherent and credible way, it will be necessary to convert to pasture the categories of animals that are currently excluded from the grass-based system (young males, calves, dairy cows, etc.).

Livestock farming can also benefit biodiversity, provided that extensive grasslands are maintained (not all, but a good proportion of permanent grasslands; temporary grasslands will remain intensive). This means reducing stocking levels, which is also essential in view of the heatwaves and droughts that can no longer be ignored when assessing externalities.

**In conclusion, the positive externalities associated with grasslands depend on the extensification of practices, the reduction in stocking rates, the reduction in livestock numbers, and the transfer of what are currently intensive production and fattening operations to truly grassland-based farming (dairy cows, steers, heifers, calves, etc.), a significant proportion of which being extensive. So, it's perfectly possible for livestock farming to maintain grassland, with improved biodiversity, but there needs to be a radical change of direction.**

### **"Is mixed farming a good idea?"**

Mixed cropping-livestock farming has the potential for agronomic quality. But good agronomic quality (soil cover, carbon contribution, correct spreading plan, protein crops, rotations, etc.) can go hand in hand with very high-density confinement farming, which is not recommended. In fact, "mixed farming-livestock farming" says nothing about either the farming model, the type of building, etc., or the agronomic quality and use of fertilisers and pesticides. There can be the best and the worst. The good thing about mixed farming is that it implies a link to the soil. But even a link to the soil does not necessarily justify the production of animal proteins, which is, on the whole, far excessive, and therefore represents a clear waste of land and resources.

In mixed farming, the production of feed on the farm is a positive asset that gives independence, protecting the farm from the vagaries of the world market. This independence is supported by public policies. But there is a lack of criteria relating to rearing conditions, and a global approach to agro-ecology, even if currently one or other aspect (especially economic...) can be taken into account.

What's more, it's not such a bad idea to buy feed for livestock farms in the region. To each his own: adapting nutritional intake to the needs of high-productivity animals is complex and requires special skills. This is particularly true for small organic livestock farms, where some animals can be an excellent complement to vegetable or market garden production.

**In conclusion, mixed farming and livestock rearing is an approach that can be interesting or 'less bad' in certain respects. As such, it does not necessarily eliminate a many negative externalities.**

## **"Livestock farming makes it possible to replace mineral fertiliser with organic fertiliser, which is good for the climate and the environment?"**

It's true that mineral fertiliser has a deplorable carbon footprint because of the energy consumed in its manufacture. So we need to reduce it (not to mention other problems such as heavy metal content, dependence on third countries, and the N<sub>2</sub>O emissions that mineral fertiliser shares with all nitrogen inputs).

Organic farming does not use mineral fertilisers, which is a handicap when it comes to yields. Its aim is to re-establish a healthy, natural nitrogen cycle. The prevailing view is that, to achieve this, it needs some livestock to introduce nitrogen from legumes into the cycle and to recover phosphorus. This is what makes organic farming virtuous and greatly reduces its negative externalities. At the cost of lower yields.

However, when it comes to intensive livestock farming, the argument of replacing mineral fertilisers with organic ones is misused. Today, animal feed for monogastric animals and for intensive meat and milk production is based on concentrates produced using mineral fertilisers and pesticides. It's simple: nothing comes from nothing. The nitrogen assimilated by the animals comes either from grass and legumes or from arable land with protein crops here or elsewhere through imported soya. Conventional intensive mixed farming and livestock rearing remains dependent on mineral fertilisers and imported soya. The industry is well aware of this challenge. Reducing these dependencies requires generously financed protein plans, which also come at a cost. If they are used to maintain the same livestock numbers, without reducing them, it will still be livestock farming that takes up land for animal feed, whether elsewhere or here. What methodology should be used to measure the cost of this land grab? Land grabbing has an impact on biodiversity and deforestation, through communicating vessels, both near and far. Let's not forget that the war in Ukraine and the tension over cereals (largely due to speculation) were used as a pretext to derogate, at European level, from the protection of areas dedicated to biodiversity. This environmental cost must be attributed directly or indirectly to livestock production. Ukrainian cereals feed Spanish pigs, which compete with French pigs, and so on. It's absurd.

**In conclusion, it is wrong to equate organic fertiliser with a positive externality. We need to assess the entire nitrogen cycle (where it comes from, where it goes, what the surplus is).**

## **"Meadows store carbon, so livestock farming is good for the climate?"**

There are many uncertainties involved in estimating storage, and in any case storage is influenced by a number of factors. High loading, drought, etc. destroy storage and can lead to destocking.

Carbon storage in grassland represents between 6% and 45% of the cow's enteric emissions, with an average value of between 15% and 30% depending on the source. And here we are only talking about enteric emissions, not even the other impacts linked in particular to concentrates, N<sub>2</sub>O, etc. And the male animals, products or by-products of the cows, fattened intensively, are not even included in the balance sheet.

Grassland storage can mitigate but not compensate for emissions from ruminant production. The lower the stocking rate (and therefore the smaller the herd), the more relevant the part of compensation becomes.

**In conclusion, the real question is how much to reduce the herd.**

## "Don't reduce livestock farming, it's essential for France's food sovereignty"

How can we talk about sovereignty when we depend on imported fertilisers and soya?

The use of land for different diets speaks for itself. ADEME<sup>52</sup> :

*"The surface area used per person in CA [conventional agriculture] varies from more than 5,200 m<sup>2</sup> for the 170g meat diet to almost 1,200 m<sup>2</sup> for the vegan diet, a ratio of 1 to 4.5. Between the 75g and the 170g meat diet, the surface area ratio is almost equal to 2. There is therefore a strong correlation between the surface area used and the level of meat consumption. In the 170g meat diet, the area devoted to meat production represents 85% of the total area. It is also worth noting that meat-free diets use slightly more land for cereals, vegetables and fruit, but the difference is very small compared with the land saved on meat and milk".*

The need for sobriety means that consumption of meat will have to fall.

Sovereignty must be assessed on a sound basis, i.e. at real prices including hidden costs. Otherwise we end up with a perverse logic, as if we were encouraging road accidents because they create wealth in terms of medical services and vehicle repairs and sales.

Food sovereignty must and can be defended by other tools and measures, and under no circumstances by a deaf and blind defence of animal production volumes.

Food sovereignty is not only compatible with a reduction in animal products, it is even only achievable on the condition that consumption of animal products is reduced.

There is more and more talk of mirror clauses; it's high time they were introduced. It's feasible, it's provided for at European level, and there even seems to be a consensus on it.

The inescapable need for a drastic reduction at international level will also have to be reflected in world trade.

**In conclusion, it makes no sense to assess externalities within a framework that requires consumption to remain constant and therefore unsustainable. On the contrary, the evaluation of externalities should help to move the cursors as regards the quantities to be produced and consumed.**

## "Livestock farming creates many jobs and sustains rural areas ?"

It has been shown time and time again that the modern intensification of livestock farming continues to destroy jobs.

A pig farm at Montsuzain in the Aube department has 1 job for every 2,000 pigs; clearly, it is impossible to do a good job in these conditions, and it is not surprising that L214 has images that justify a complaint for cruel treatment of animals. For all categories, especially poultry, automation is continuing, as is the monitoring of animals by computers.

The profession is also concerned about the transfer of farms, which is becoming increasingly difficult given the level of investment. There is a lack of vocations. It would be good news if the reason for this was not just economic, but also linked to the fact that factory farming is rightly criticised for its mistreatment of animals. Mistreatment mainly takes the form of deprivation, i.e. denial of the animals' needs. And sometimes even beatings.

The European Commission's forecasts predict that the loss of farms and jobs will continue.

For farms with several employees, exemptions from contributions ensure a certain level of profitability<sup>53</sup>.

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<sup>52</sup> Soil, energy and carbon footprints of food, Part 1, ADEME December 2020

And how can anyone claim that cattle farming creates jobs and provides a livelihood, when the lack of income is notorious, and only CAP subsidies provide a bare living.

**In conclusion, the evaluation of externalities should include job losses, working conditions and income, the attractiveness of the activity, and the role of public aid in ensuring the viability of jobs.**

### **"Carbon farming, carbon dairy, low-carbon label, ... everything all right?"**

The fear that these approaches will lead to greenwashing is justified. The improvement of certain practices is certainly perfectly welcome: it's a question of implementing good agricultural and professional practices. While certain good practices can reduce certain externalities, they can in no way replace the essential need for sobriety, and that is where the problem lies. The low-carbon label cannot legitimise pig production that far exceeds nutritional requirements in terms of animal proteins, whereas plant proteins have far fewer externalities. The ethical issues surrounding animals, biodiversity and the fundamental question of the best possible use of land cannot be ignored.

The aim of these 'low-carbon' approaches is in fact to maintain mass production with all the industrial tools around it, and to get paid for so-called low-carbon practices, whether through public or private funds (offsetting emissions that are maintained). These approaches therefore fall into the realm of "public money sucking" or private externalities, as it happens. It remains totally illusory that agriculture can offset GHG emissions from other activities and industries. It cannot even offset its own emissions.<sup>54</sup>

No one really knows how long grasslands can increase their carbon stocks, and when this capacity will slow down and eventually saturate, and climate change is adding to the uncertainties (for example, the storage capacity of forests is being reduced). The return of hedgerows is certainly good news. As for crops, for the time being they are, on the whole, destocking rather than 4/1000. Nitrous oxide emissions remain a major concern. This depends on fertilisation. Even assuming an improvement in nitrogen efficiency, it seems impossible to maintain and feed the current livestock (particularly granivores and ruminants fed on concentrates) if we want to control N<sub>2</sub>O emissions. No solution has yet been found to this challenge. It is to the credit of the TYFA scenario that it clearly sets out the alternatives for nitrogen inputs and highlights the need to extensify grasslands and regain biodiversity.

**In conclusion, payments to reduce emissions are externalities ; they follow the "polluter paid" principle as long as they do not put in place the necessary restructuring with a reduction in livestock numbers.<sup>55</sup>**

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<sup>53</sup> Le Basic : Aides publiques liées au salariat agricole : des effets qui étonnent, July 2023 ; <https://lebasic.com/aides-publiques-et-salariat-agricole-des-effets-qui-questionnent/>

<sup>54</sup> Annual report of the High Council for the Climate, 2023 [https://medias.vie-publique.fr/data\\_storage\\_s3/rapport/pdf/290091.pdf](https://medias.vie-publique.fr/data_storage_s3/rapport/pdf/290091.pdf) page 103

<sup>55</sup> See the recommendations of the Haut Conseil pour le Climat, 2023 Report, page 104: *La transition du secteur requires an integrated vision of the food system, aligned with adaptation and mitigation objectives. low-carbon, fair local production.*



## "Feeding the French, feeding humanity? Let's not get everything mixed up!"

Livestock farming unquestionably produces food of high nutritional value, containing quality proteins.

Just as indisputably, much of the world's land cannot produce anything other than grass, which can only be used by ruminants, the main resource of the populations concerned.

There is no doubt that livestock farming is a means of survival and income for many people around the world, including hundreds of millions of 'small farmers'.

Hundreds of millions of people are undoubtedly undernourished or malnourished, and the lack of protein and quality protein is a real challenge.

However, it's important not to get everything mixed up.

Just because people in Africa lack protein does not mean that we should defend factory farming here. Just because emerging countries are increasing their meat consumption doesn't mean that we should accept the trend towards greater meat production as inevitable.

The message conveyed by Anne Mottet on behalf of the FAO is that the development of livestock farming is desirable and feasible, thanks to the 30% reduction in impact that can be achieved by applying existing more efficient techniques.

As it happens, Anne Mottet comes from the Institut de l'Elevage, and therefore from the livestock industry, and is close to the meat lobbies. That's her right. But using small farmers in Africa and elsewhere to promote arguments in defence of Western-style mass production is not right. Telling Europeans that 80% of animal feed cannot be consumed by humans and that cereals that can be grown for human consumption account for only 13% of animal intake is not acceptable. It is at best a misleading shortcut, and at worst a manipulation at the service of the meat lobby. In Europe, over 60% of cereals used go to animal feed. And we're not talking about meadows, protein crops, or even beetroot or rapeseed, which are added on. It is perfectly possible to shift the choice of crops towards more human food. As for by-products, the market for them is increasingly tight, particularly with the emergence of demand for biomass for energy and materials production. 'Priority for human consumption' is a great hypocrisy, given the world's production of energy, cotton, wine and foie gras.

Similarly, to tell Europe that the livestock sector "*plays a real buffer role in terms of regulating market crises or climatic incidents*"<sup>56</sup> is completely out of step with the recurring crises that producers are complaining about<sup>57</sup>.

The FAO has indeed developed a partnership with the private meat sector, which raises questions and puts its scientific and moral credibility into perspective.

In recent years, global production of soya and maize has gone from record to record (even though climate change is generating major uncertainties), with high impacts and heavy externalities. They are used to feed industrial livestock farms, led by China, but Europe has not been left behind.

As for the Ukrainian cereals crisis, in Europe this has mainly affected Spain, which imports a lot to feed an oversized industrial herd (need for 25Mt of industrial feed, including 11Mt for pigs), which is largely destined for export - which, among other things, has weakened French pig and poultry production. This is an absurd and destructive system of competition.

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<sup>56</sup> La France agricole 23 July 2021 <https://www.lafranceagricole.fr/fao-food-and-agriculture-organization/article/770708/il-faut-rendre-compte-des-cobnfnices-de-llevage>

<sup>57</sup> The Civil Dialogue Groups at the European Commission are a great platform for all these crises and the incessant calls from the industry for public aid.

As for the crisis over synthetic and imported fertilisers, it points to the externalities of excess nitrogen, linked to livestock production. The current use of synthetic fertilisers is excessive and indefensible.

**In conclusion, it is high time to integrate hidden costs not only into prices but also into trade policies.**

**Accepting the extrapolation of current trends in animal protein consumption forecasts is as irresponsible as extrapolating current consumption of fossil fuels. Sobriety is a question of survival. Even the United States and China will be forced, one day, to admit this and take it into account.**

### **"The nutritional value of livestock products: valuable, beneficial, essential?"**

The nutritional qualities of livestock products are the subject of fierce controversy over their positive and negative externalities, and hence their impact on public health.

Trade-offs in this area involve huge economic stakes, resulting in powerful advertising and lobbying budgets. As a result, nutritional advice is often a passing fad. Anything goes when it comes to nutritional marketing for 'health'.

The dangers of high consumption are well recognised, including the risks associated with carbonisation (barbecues), charcuterie and other processing methods and additives, and added sugars, bad fats, excess calories, empty calories and alcohol. But meat and dairy products are not basically bad foods. In certain regions, seasons and circumstances, they enable humans to survive.

On the other hand - and this is the essential point! - it is also perfectly possible to do without them or to reduce them to a greater or lesser extent, if the diet is otherwise balanced. Other non-animal foods provide essential nutrients, including combinations of amino acids, and are rich in micronutrients and fibre. Some critical micronutrients are very easy to supplement (vitamin B12, calcium, etc.), and the animal feed industry does this quite routinely!

**The decision to consume livestock products, and in what quantities, is therefore likely to be influenced by the balance of externalities. Alternatives to livestock products do exist.**

Indeed, micronutrients are not the whole story. The environmental impacts are a danger that is otherwise existential, threatening the survival of humanity. Rising temperatures could make life impossible over huge areas, or at least for humans and the other animals around us. Cruelty to highly sentient beings is just as dangerous (also if it means depriving them of any life worth living). To arrogate to oneself the right to such cruelty is to arrogate to oneself the right to exploit and kill without mercy or reason. And that should be sustainable ?

Assessing the balance of externalities - positive or negative? - in terms of nutrition can never be based on simplistic generalisations:

- This will be done on a case-by-case basis, depending on the territory and country concerned.
- So, to be valid and useful, it will necessarily be comparative, i.e. comparing alternative food solutions that provide the nutrients needed for good health.
- It is absolutely essential to integrate issues of biodiversity, animal ethics, social justice, the fight against poverty and so on.
- The galloping human demography calls for the utmost caution.

**In short, the hunger of Africans should not be used as a pretext to excuse Europeans and other inhabitants of rich and emerging countries from sobriety when it comes to animal proteins.**

**In conclusion, calculating externalities is an enlightening and useful exercise, provided it is done lucidly and honestly, without cheating or misleading through simplistic shortcuts. However, we need to be aware that the result depends on the Life Cycle Assessment and the monetisation factors that we are willing to include. The various options must be transparent. There are two areas that must be taken into account when adding up the externalities:**

- **The integration of animal distress, which goes far beyond the health dimension. Livestock farming is about sentient beings, not physico-chemical processes.**
- **The public money that is spent directly and indirectly to support livestock farming and upstream and downstream activities, as well as on product promotion, and to reduce and control (insufficiently) some of the immense damaging impacts on the environment, health and animals. The damage, the distress and the monopolized public money must be opposed to the indecent profits of agrochemicals and agro-industrial companies.**