T20 POLICY BRIEF

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Task Force 01

FIGHTING INEQUALITIES, POVERTY, AND HUNGER

Animal Welfare for a Healthy and Sustainable Agrifood System

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Abstract

Animal production systems that disregard the dignity of sentient living beings are prevalent across the globe. Yet, they play a key role in generating agricultural income and supporting human food supply. Intensive animal production nowadays is highly dependent on antibiotics, increasing the risk of antimicrobial resistance (AMR) that simultaneously affects human and animal health and the environment. The advance of AMR is one of the greatest contemporary threats to global health. At the same time, approximately 40% of the world's grain is fed to livestock rather than consumed by humans. This grain production is highly subsidised all around the world. Consequently, feeding these animals has a high socio-environmental cost, given the burden it represents over public finances and the use of areas that could be destined for human food or biome regeneration. Furthermore, the supply of animal-source foods (except in Sub-Saharan Africa) is far greater than what is needed to meet human nutritional requirements, raising the issue of equity. Animal production systems should rapidly change to significantly reduce the use of antimicrobials and provide safe and sustainable diets through public policies based on the One Health approach, e.g., by encouraging preventive working standards, improving biosecurity measures, using alternatives to antimicrobials and direct subsidies to plant diversification. Reducing animal density in intensive production systems is essential to afford farmed animals an improved animal welfare. Other efficient measures to optimise the use and minimise the need for antibiotics include promoting a more diversified diet, predominantly sub-products, healthy and enriched breeding environments, and genetically diverse and immunologically robust animals. Strengthening local production, diversifying, and increasing the presence of a variety of plant-sourced products in diets are also part of policies for the sector.

Keywords: One health, animal welfare, biosecurity, antimicrobial resistance, livestock production, biodiversity

Diagnosis of the Issue

Since the 1950s, animal husbandry has undergone a series of technological innovations that have allowed a spectacular increase in its supply. The basis of these innovations is the concentration of animals in reduced spaces, their genetic homogeneity, and a set of transformations that drastically shortened their lifespan and allowed for increased production and supply of animal-source foods on a large scale. The economic and technical viability of these concentrated breeding systems lies in animal feed primarily based on grains (e.g. 40% of all global cropland is currently used to produce livestock feed) (Mottet *et al.*, 2017). This massive grain production receives the majority of the annual US$ 470 billion global expenditure on agricultural subsidies. These subsidies distort markets, contribute to the erosion of biodiversity, and delay the achievement of the Sustainable Development Goals.

The contemporary conception of animal welfare is not restricted to delivering animals' food, water, and medicines. Animal husbandry must provide environmental conditions that allow animals the free expression of their intelligence, their sentience, and their sociability. Under this conception, animal welfare is not only instrumental for human beings: it is, above all, an ethical-normative value that has the growing support of science and public opinion.

The current technological model does not respect, in most cases, this ethical requirement. Instead, it fosters the spread of infectious diseases and the excessive and inadequate use of antibiotics. The result of this translates into one of the World Health

Organization's (WHO) greatest contemporary concerns: the advancement of AMR, with devastating effects on animal, human and environmental health (Geneva Environment Network, 2024). For instance, in 2019, 4.95 million deaths were associated

with resistant bacterial infections (Murray *et al*., 2022) and AMR has the potential to become the leading cause of death and new pandemics by 2050 (O'Neill, 2016).

The poor genetic diversity in production models is due to intense reproductive selection for highly productive breeds (Zuidhof *et al.*, 2014). This genetic monotony has led to the disappearance of diversified genotypes (Taberlet *et al*., 2011) and the development of animals more susceptible to diseases due to a deficit in allocating metabolic resources to immune response (Beilharz, Luxford, and Wilkinson, 1993).

The lack of an environment tailored to the animals' needs limits the expression of innate species behaviours and harms health (Albernaz-Gonçalves, Olmos, and Hötzel, 2022). High stocking density, lack of environmental enrichment, and painful management practices without analgesia are important sources of poor animal welfare in intensive farms (Fu *et al.*, 2024; Weerd and Ison, 2019). These examples show the degree of stress and discomfort inherent to intensive systems, which result in chronic stress, vulnerability to diseases, and excessive and inadequate use of antibiotics (Albernaz-Gonçalves, Olmos, and Hötzel, 2022).

In order to control disease incidence in herds, antibiotics are used preventively and therapeutically (Bokma et al., 2014). Seventy percent of antibiotics produced worldwide are used in animal production, with the main consumer countries being China (45%), Brazil (8%), and the USA (8%) (Tiseo et al., 2020). The inadequate use of veterinary antibiotics is associated with a higher risk of AMR spread in humans, animals, and the environment (Ma et al., 2021). Therefore, it is important to consider controlling AMR from a One Health perspective, which is a transdisciplinary approach that considers the intrinsic interaction between humans, animals, and the environment (Kelly et al., 2017).

There is also an important difference in the socio-environmental impacts of animal husbandry between ruminants and monogastric species. First, ruminants are the main

drivers of greenhouse gas emissions and one of the main sources of global methane emissions (FAO, 2023). However, it must be stressed out that ruminants reared in well-managed and diversified pastures can deliver high-quality foods characterised by low cost of opportunity, as pastures cannot be ingested by human beings. Second, the relationship between cattle, soil, and plants is a source of important environmental services related to soil and biodiversity. Third, monogastric animals are drivers of biodiversity erosion due to their reliance on products cultivated in monotonous agricultural landscapes (Abramovay et al., 2023). Finally, as the massive delivery of their products presupposes their concentration, it is urgent to improve the methods that could decouple this concentration from the harm they are subject to in present factory farms.

The negative impacts of animal production have been systematically justified as inevitable due to the need to deliver animal-source foods for human consumption. However, these arguments do not consider that the global supply of animal-source foods exceeds recommended levels in almost all regions except for some parts of Africa and Asia (FAO, 2023; Berners-lee *et al.*, 2018). Furthermore, the regions where there is meat overconsumption are also those where ultra-processed foods have a greater share in the diet (Laderchi *et al.*, 2024). Reducing meat consumption is part of current public health efforts to diversify dietary patterns, increasingly threatened by monotony.

In this context, the role of the G20 is crucial in coordinating the implementation of public policies in member countries to seek sustainable and feasible livestock models considering animal, environmental and human well-being.

Recommendations

The following recommendations acknowledge the nutritional and cultural values of animal-sourced foods and are supported by recommendations presented in several food-based dietary guidelines concerning the reduction of meat consumption, particularly red and processed meats.

We begin by emphasising the importance of recognising that there is no one-size-fits-all solution to the diagnosis. Instead, it is imperative to ground any changes in animal production systems and practices in sustainability and animal welfare principles.

Governments should actively engage in food systems transitions toward the diversification of contemporary diets (World Economic Forum, 2023). Establishing a knowledge exchange framework among stakeholders is essential for this purpose. This framework should facilitate a seamless flow of information, embracing both bottom-up and top-down approaches. This exchange should be inclusive, allowing the sharing of insights, experiences, and best practices from diverse communities of knowledge at all levels of governance. This includes grassroots organisations, local communities, and national governments. By fostering collaboration and mutual learning, such a framework can harness the collective wisdom and expertise necessary to address complex global challenges effectively.

1. Enhance Animal Welfare Standards. To this end, a twofold approach is suggested. Firstly, animal welfare principles should be fully integrated into agricultural policies. This requires the establishment of clear regulations to ensure the protection of animals across all production stages. Secondly, efforts should focus on enhancing and modernising livestock production anchored in consolidated animal welfare science. This includes improving animals' living conditions, minimising stress, and implementing

humane handling and slaughter practices, which entails gradually de-intensifying animal production systems. Examples that can be prioritised are banning cages, reducing stocking densities, providing environmental enrichment, fostering animal housing and management practices allowing animals to express important natural behaviour. Assessing the cost-effectiveness of such policies is crucial. While initial investments may be needed, the long-term benefits outweigh the costs. Additionally, prioritising animal welfare enhances the social pillar of sustainability by contributing to a resilient and responsible food system.

2. Promote and Support Sustainable Cattle Production Systems. To reduce harm produced by ruminant production systems, G20 members should promote actions that lead to a major reduction in the areas of pastureland found within tropical forests while concomitantly improving the management of the current pasturelands through moderate intensification technologies. This can result in regenerating biodiversity and drastically reducing methane emissions from cattle farming. Priority must be given to the diversification of pastures, the introduction of leguminous plants into pastures, and the adoption and development of silvopastoral systems. This moderate intensification can help increase productivity, restore biodiversity, enhance habitat connectivity, capture carbon through soil regeneration, and improve animal welfare.

3. Reduce Antibiotic Use in Farming. Enact and enforce the application of legislation aimed at facilitating a transition from animal production systems that heavily rely on antibiotics for maximising productivity to systems that prioritise animal welfare and environmental sustainability. Limit antibiotics use solely for therapeutic purposes and ban them as growth promoters worldwide. These measures must be reinforced by improving

access to high-quality veterinary services, enhancing surveillance of animal diseases and antimicrobial use (AMU), increasing vaccination coverage, implementing additional preventive measures, and educating stakeholders on responsible AMU and AMR. It is possible to learn from countries that have already made significant progress in reducing AMU in livestock production without negatively impacting productive activities.

Transformative policies and actions must acknowledge the industry's need to bear a portion of the cost associated with changes rather than solely passing them on to consumers and producers. It is also imperative to mainstream One Health and animal welfare principles into livestock discussions and policies at all levels. This integration should involve capacity building among stakeholders to ensure effective implementation and sustainable outcomes. This would involve, among other factors, access to open datasets with information on antibiotic use worldwide.

4. Promote sustainable diets. Advance equity in the consumption of animal-sourced foods and other fresh, healthy foods (e.g., vegetables, fruits, pulses). Policies should address disparities in consumption, accounting for both excess and inadequate intake across various regions and socioeconomic groups. Essential measures include bolstering the dissemination and adoption of dietary guidelines aimed at diversifying diets. These guidelines emphasise the consumption of fresh and minimally processed plant-based foods while advocating for reducing excess red meat consumption and, particularly, the avoidance of ultra-processed foods.

5. Promote food sovereignty. Encompassing the right of people to access healthy, culturally appropriate food produced sustainably. Food sovereignty must be incorporated into the social pillar of sustainability, fostering fair production systems. To advance this

goal, advocate for developing and supporting short supply chains and local farming networks. These initiatives facilitate direct connections between consumers and local producers, promoting the consumption of fresh, locally produced, and seasonal products.

6. Redirect Agricultural Subsidies. Redirect agricultural public subsidies from staple foods destined for animal consumption towards products, systems, and practices that regenerate biodiversity and deliver healthy and diversified diets. These include organic farming, pasture-raised livestock, agroecological practices, local communities, and smallholder farmers. Regarding staple foods, support for their production should be conditional upon their ability to regenerate ecosystem services, particularly soil biodiversity.

7. The ecological transformation of the global food system calls for increased adoption of animal feed with low opportunity costs. For cattle production, well-managed pastures employing moderate intensification are a means to achieve this aim. In the poultry and pig industries, there is an urgent need to advance research into technologies that reduce animal density and achieve lower opportunity costs for animal feed.

Scenario of Outcomes

- Reducing animal antibiotic use and consumption of animal-sourced foods will simultaneously reduce the current growth of deaths from AMR and non-communicable diseases.
- Diversifying the agrifood system will help reduce its current contribution to greenhouse gas emissions, enhance biodiversity, and also mitigate the global obesity pandemic, which is primarily driven by the growing consumption of ultra-processed products.

Some trade-offs might also be considered:

- Policies aimed at reducing the consumption of animal-sourced foods should be paired with compensatory measures, such as discounts and greater availability of unprocessed or minimally processed whole-plant foods. This approach is vital to prevent increased living costs from adversely affecting low-income groups and to avoid the substitution of animal-sourced foods for ultra-processed foods.
- 'Techno-fixes' for livestock (e.g., increasing intensity, uniformity, and density of industrial systems) and 'alternative proteins' that arise with recommendations for reducing animal-sourced food consumption and increased private investments tend to ignore the risks of reinforcing current food systems dynamics (e.g. reliance on monocultured ingredients and energy intensive ultra-processing used in the production of plant-based products and meat alternatives that are ultra-processed).
- Transitioning to sustainable production systems and reducing animal-sourced food consumption could negatively impact producers' livelihoods, particularly smallholder producers, if this transition is based on costly forms of traceability and product labelling. Small farms should be informed and professionally prepared to face

the challenges of the market changes that the ecological transformation of the agrifood system implies.

- Credit, insurance, and subsidies, which are currently focused on a limited range of staple products worldwide, should be redirected to support diversification, the regenerative potential of production technologies, and the nutritional value of animal and agricultural outputs, as well as animal welfare, as recommended by the One Health perspective.
- The main challenge faced by deintensification is the period of time during which conventional techniques are abandoned, and new procedures are adopted. The G20 should strengthen the endeavour coming from organisations such the CGIAR and the World Economic Forum to support this transition and to direct financial resources to its implementation.
- The implementation of the aforementioned recommendations should be carefully planned and carried out gradually. Among other factors, the training of field technicians is essential so that the suggested changes can be effectively adopted in agricultural establishments, minimising economic losses to rural producers.

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Appendices

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BUILDING A JUST WORLD AND A SUSTAINABLE PLANET

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