

Paris 2024: an Olympics that will limit muscles?

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Paris is the focal point now, and France wants to make it the most environmentally friendly event of all time. Animal protein has come under scrutiny, and in mid-April, it became public how its consumption will be reduced in favor of vegetables and plant-based processed foods.

The Olympics is one of the most anticipated events, exerting an almost magical global fascination. Rarely does any earthling fail to be moved by something that happens in the games, be it unlikely records, last-minute decisive plays, scenes believable only because they were filmed, and cases of overcoming great emotion.

By turning the world's eyes in its direction, it is also a significant economic and political opportunity, whose dimensions are well illustrated by the fierce competition among cities trying to host, an occasion that usually lacks a very Olympic spirit, as professed by Baron de Coubertin: "The important thing is not to win but to compete," a worn-out phrase whose complement, usually left out, is: "And with dignity."

Once the host city is chosen, the country responsible for hosting the event has a golden opportunity for its global promotion. Paris is the focal point now, and France wants to make it the most environmentally friendly event of all time. Previously, there was a directive from the International Olympic Committee for this edition to be "a beacon of environmental responsibility." As the most pressing challenge facing humanity is global warming and the climate changes it entails, the main focus ends up being on carbon footprint (C).

There is even a clear goal: to have half the average C footprint of the London (2012) and Rio de Janeiro (2016) games¹. It is promised, moreover, a reduction in indirect emissions such as those related to participants' travel, with some compensation for part of the air travel and also encouragement for delegations, if they have this option, to travel by train. This is important because almost 40% of emissions are expected to come from transportation, the main emissions sector, according to data from the organizing committee.

Other strategies to achieve this goal can be observed in Table 1. The remaining emissions to achieve the target, which all measures combined cannot reduce, will be offset by the purchase of carbon credits.

For a global "uber-event," nothing could be more appropriate than a bold goal, and to achieve it, all opportunities to reduce emission sources will be pursued. Animal protein has come under scrutiny, and in mid-April, it became public how its consumption will be reduced in favor of vegetables and plant-based processed foods.

As usual, this news caused a stir, with many people harshly criticizing the conduct of the event organizers and expressing their views, generally with strong statements, some quite exaggerated and not always adequately supported by facts.

Table 1.

Some actions of the Paris 2024 games to reduce their environmental impact.

Material footprint:	Planning for minimal use, life cycle analysis from seats to tennis balls.
Energy use:	100% renewable energy used; generators will use biofuels or batteries.
Reduction and reuse:	Only 5% of sports event venues are new; shared use of resources (chairs, tables, sports equipment, etc.); 90% of used goods will be reused or returned. Use of existing facilities for competitions ²
Utensils for food preparation and consumption:	50% reduction in disposable plastics; reused kitchen equipment; ample supply of water fountains and permission for spectators to use containers in stadiums (a law prohibiting them will be suspended); Reduction of food waste and composting of leftovers.
Transport:	80% of Olympic facilities are located within 10 km of the Olympic Village; all venues have public transportation; use of 40% fewer cars, whose fleet will be electric, hybrid, or hydrogen-powered; acquisition of 80% of agricultural production ingredients locally, with a quarter produced within a 250 km radius of the consumption site.

The aim of this article is to attempt a broader and more realistic assessment (based on the best information available to me on the subject) in order to make more fair demands and propose meritorious and necessary objectives to improve people's lives.

1) What are the IOC and Paris promising in their "Food Vision" in terms of restricting animal protein?

Specifically regarding meals, the following promises are made:

- Halve the average C footprint of the 13 million meals served during the four weeks of the games by doubling the proportion of plant-based ingredients;
- Of the approximately 5 million meals and snacks sold to spectators at the competition venues, 60% are expected to be vegetarian;
- The canteens for Olympic staff and volunteers should serve 50% vegetarian meals.

2) Does replacing animal protein with plant-based diets on the menu reduce the C footprint?

From a calculation standpoint, yes, because the C emission from animal products is higher than that from vegetables. There are questionable points in the calculation of emissions from animal sources (addressed later), but even if all were resolved, the higher emission from animal products compared to plant-based ones would remain.

From the perspective of being a good strategy for the world, the story is different because there is a premise that reducing demand would reduce the number of animals and therefore emissions, but it may actually be the opposite.

Thus, a discouragement effect on livestock production that leads to a reduction in the use of inputs and modern techniques results in a reduction in production per animal. Consequently, more animals are needed to meet demand, even if it is lower.

Significantly contributing to this is the increase in the C footprint per animal (kg GHG/head) as the production level decreases. Even greater is the effect on production intensity (kg GHG/kg of meat or kg GHG/kg of meat), the best metric, especially for reducing GHGs without reducing food production.

It is clear, then, in the case of livestock, that the path is to produce more efficiently, as we can produce more food, even with a smaller herd, or fewer emissions, as will be exemplified later.

3) Will the nutritional value of vegetarian/vegan diets not compromise athletes' performance?

Despite the imposed limitations, the organizers guarantee that athletes will be able to eat according to their culture and dietary needs. This statement raises some suspicion, as there is a need to reconcile

the dietary restrictions imposed by the organizers with the needs of athletes, who obviously tend to have high nutrient requirements. Animal foods are very concentrated in nutrients with high bioavailability, which makes it much easier for nutritionists to plan athletes' diets.

As part of the replacement will be made with processed plant-based foods, it is necessary to make it clear that such a "burger" has lower nutritional value than the original with meat. Will athletes and other consumers be alerted to this? There is doubt.

Note that this is not to invalidate that a vegetarian or vegan diet can be used by athletes, even because there are several of them who claim to use this option. In these cases, however, rigorous monitoring by nutritionists is necessary so that, regardless of the plant sources used, their combination meets each athlete's specific requirements.

Regarding the performance of athletes on omnivorous diets versus vegetarian/vegan diets, science has not yet been able to demonstrate clear differences, which, in itself, shows that this is less relevant than it may initially seem. It is also a strong indication that elite sports nutritionists are competent.

Interestingly, a recent study³ shows that vegetarian/vegan diets would favor some positive characteristics when practicing sports, while for others, a diet containing protein of animal origin would be better. Taken more generally, therefore, the findings of this work suggest that using both sources, something quite intuitive, can be understood as a lower risk option.

4) If meat was imported from Brazil, would no restriction be needed to reduce the C footprint of the games?

One of the statements made by several people about this controversy is that, in the case of meat produced on pasture in Brazil, it has been proven that, as long as it is "well done", it would be negative in terms of C emissions. As a matter of fact, we are not at that level yet, as we will try to show.

Firstly, this only occurs in some situations where the level of intensification is well above the Brazilian average and considering the C sequestered in the soil. There is resistance to considering soil C as GHG sequestration for three reasons: (i) it is difficult (and expensive) to measure; (ii) C concentration values in the soil need several years to show significant variation and, mainly: (iii) slight disturbances in the soil are already capable of releasing part of the C back into the atmosphere. The latter also serves to explain why the aerial part of the pasture is not included in the calculation, even if the proposal was to only consider post-grazing residue.

In addition to the data from Brazilian scientific studies in which there are negative C emission being results from intensified production systems, they all account for the C balance only for the period in which the data are measured, usually during growing or finishing phases. None of them include the breeding phase, where most of the emissions are, since more than half of the energy needed to produce an animal ready for slaughter is spent on the cow-calf pair. There is the aggravating factor that the breeding phase is usually less intensified, with much higher emission values per animal. The positive side: this is the point where we have the greatest chance of reducing emissions.

5) Is the carbon emitted by cattle different from fossil carbon, and therefore, does it make no difference?

It is indeed different but contributes to global warming in the same way. Explaining:

- The ruminal methane cycle can be considered closed, that is, what is produced remains in the atmosphere for about 10 years but is eventually converted into carbon dioxide (CO₂). This is captured by forages, which when consumed by ruminants, are fermented in the rumen and emit methane again, restarting the cycle, without (necessarily) the contribution of new CO₂ molecules;
- Fossil carbon, on the other hand, is an additional contribution because we extract these energy sources from the depths and, after burning them, their carbon accumulates in the atmosphere, remaining for hundreds of thousands of years;
- The ruminal methane cycle only does not increase carbon in the atmosphere if the number of animals remains constant. However, for example, the Brazilian herd has increased significantly in recent years and continues to grow, therefore, emissions from our livestock also increase.

We can do the opposite and achieve the same (or greater) meat production but by reducing the herd, with efficiency gains. It is necessary to gain more weight in pasture, eliminate weight loss in drought, reduce the age of entry into reproduction of heifers, and, above all, improve the birth rate.

Table 2 presents a simulation of the number of fewer breeding cows needed to produce the same quantity of calves with the current birth rate (65 calves born/100 cows exposed to reproduction) and an estimated herd of 80 million female cattle capable of reproduction.

Table 2.

Quantity of breeding cows needed to produce 52 million calves per year based on birth rate (calves born

per 100 cows exposed to reproduction).

Birth rate	Calves (millions)	Breeding cows (millions)	Fewer cows (millions)
65%	52	80	Zero
75%	52	69	11
80%	52	65	15
85%	52	61	19
90%	52	58	22
95%	52	55	25

In the best-case scenario, which is hardly achievable, there would be 25 million fewer cows, but the target of an 80% birth rate is entirely attainable, which would already reduce the breeding herd by almost 20%.

Increasing feedlot-finished animals, with high gains in short periods, further reduced with the aid of already available technologies that allow for predicting and identifying animals ready for slaughter, also helps increase the gain per animal and per time, allowing for reducing the herd for the same demand.

We should not overlook the success of adopting integrated systems, as they assist in achieving all the aforementioned objectives: better gains, production of concentrates for supplementation and feedlot, and improvements in reproductive efficiency due to enhanced thermal comfort in systems where there is shade from trees.

In common, all alternatives to reduce the herd, if done properly, usually increase the profitability of the activity.

6) Is it hypocrisy and elitism for Paris 2024 organizers to restrict animal protein? Are there bad intentions?

On its website, the organizing committee comments that "although the catering service is one of the smallest contributors to the carbon emissions of the Games, making it more sustainable is highly symbolic," that is, there is a professorial intention to teach what should be done.

Many point out that this type of position and the luxury of eating plant-based diets only expose the elitism of a developed world society, compared to the billions of people who have only recently increased their access to animal products, with great benefits in quality of life (especially health), and so many other people who still face food insecurity or outright hunger. This issue was well discussed here three years ago, but with very interesting and still relevant information⁴.

Another criticism is that the "veggie" menu would be hypocritical, given that rich countries like France are, in fact, the major emitters and, more than that, owe much of their wealth to having used a disproportionately large share in the accumulation of GHGs in the atmosphere, as discussed last year in this space⁵.

Even being benevolent about intentions, the fact is that, at the very least, there are always strong commercial interests. For example, Garden Gourmet, a Nestlé subsidiary that produces plant-based meat substitutes, is one of the sponsors. It will provide plant-based burgers and chickpea and beet falafels. In the case of the urban park of the "Place de la Concorde," the venue for skateboarding, breakdancing, and BMX competitions, where a very young audience is expected, there will be no meat. There is, therefore, a feeling that it is more of a commercial promotion issue, making young people believe they are saving the world and, at the same time, are better nourished, which in both cases is false.

Point by point, a few more important considerations:

GHG emissions: the higher emission of meat compared to plant-based products is a fact. But it is worth noting that they are overestimated. First, the data used are only for emissions, without considering the balance between emitted and sequestered. In the case of Brazil, where almost all production is pasture-based, as long as the pasture is well managed, there is carbon sequestration, which can be relevant. There is also a discussion about the measurement standard, the global warming potential (GWP), which may overstate the role of methane by disregarding its shorter residence time in the atmosphere. One of the alternative metrics, called GWP star (GWP*), would reduce methane's contribution by 35%, according to one estimate. There are currently advocates for its use, but there is obviously debate in the scientific community as to whether it should really be changed, as there are various implications, including potentially unfavorable ones for those interested in its use, such as Brazil, depending on the circumstances.

Herd reduction: in the matter of reducing the herd, it is interesting to compare ourselves with the world's largest meat producer, the USA. They produce more meat with less than half the herd. However, it is important to understand that there are not only bonuses in this. As a bonus, we have lower

emissions and, particularly, lower emission intensity (kg GHG/kg of meat). As a downside, the environmental footprint of this meat, in many other aspects, will be worse than Brazil's, in points such as energy expenditure, pollution generation, eutrophication, pesticide use, etc. It is clear that the environmental issue needs to be viewed comprehensively, avoiding excessive focus on just one point.

Tunnel vision: This is the problem that arises when focusing so much on GHG emissions: we fail to perceive many other sources of environmental problems that also need to be observed. This has been called "tunnel vision," or the risk of giving importance only to what is seen through the tunnel that becomes this exclusive focus. The opposite idea is the comprehensive evaluation of the production system in order to understand all the impacts to be addressed and to achieve coordination among all of them to ensure the lowest possible environmental footprint. It may be better to have a little more GHG, for example, if this represents less use of a certain input whose use should be restricted for a greater good.

Plant-based substitutes: Replacing meat with plant-based food follows a similar pattern of "tunnel vision," as they may have a lower carbon footprint, but in general, they require many more resources than meat production, especially that done in pastures, as in Brazil. In addition, despite a very enthusiastic start-up sector in this area, after the novelty factor wears off, sales of processed plant-based products have started to plummet. One symptomatic effect of this was Beyond Meat, a trendy Silicon Valley pioneer in California, in this market which, after a 20% drop in revenue compared to 2022, announced a 19% workforce reduction last November. This trend may explain Nestlé's investment in Paris 2024.

Where's the gold medal in all of this?

From all that has been said, I think it is fair to consider that the IOC and the organizers of Paris (2024) deserve more praise than criticism for the comprehensiveness of the measures taken.

In our specific case, as a major meat exporter, I believe our sector can take advantage of the situation, following the suggestions below:

- 1) Take advantage of the final balance of the games to show how limitations on meat consumption bring only a small advantage in terms of reducing GHG emissions, as the organizers themselves admit, and then show everything that is lost by discarding an option that can be produced with grass in areas unsuitable for agriculture, in integration with other activities, and many other advantages, as described in two articles, also in this space, where the point at issue was the "Meatless Monday."⁶
- 2) Diplomatically point out the contradictions of rich countries regarding historical and current responsibility as major emitters and the attempt to set an example for a world deficient in animal protein. The demand should aim to force more productive agendas, such as the one below.
- 3) Propose the union of efforts on convergent points to solve global challenges, which could begin with creating a simpler and more accessible carbon credit model. For example, one that would allow payment for carbon stored in the soil, as well as that maintained, due to the enormous benefits to agricultural production.
- 4) Another interesting proposal would be financing sustainable intensification because, as already mentioned, there is usually greater profitability in the activity after implementation, however, investments are often needed to enable the adoption of sustainable practices (additional troughs, need to purchase inputs, etc.).

It would be possible to list many other points, but this long text needs to be shortened...

The final message is that there is no other country with a better chance of combining food production and environmental balance than Brazil, not in spite of being large producers of cattle but precisely because we are and because of the conditions we have. It is not about going against the global tide, as the UN shows that only with livestock will we achieve the "Sustainable Development Goals." On our part, we just need to continue improving our production, which has no sustainability gold medal but is a clear favorite to occupy the highest place on that podium.

¹ The values for Tokyo (2021) were left out, as they are very low as there was no public

² The Grand Palais, for example, will host Taekwondo and fencing competitions.

References

"The Impact of Vegan and Vegetarian Diets on Physical Performance and Molecular Signaling in Skeletal Muscle" disponível em <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8623732/>

<https://www.linkedin.com/pulse/2024-paris-olympic-games-monument-sustainability-lina-taylor-oly-b5r1c/>

<https://olympics.com/ioc/news/less-better-and-for-longer-five-ways-paris-2024-is-delivering-more-sustainable-games>