Sustainable intensification - an oxymoron

Decades of hunger for many have been juxtaposed with increasing over consumption for others. Multiple environmental, economic and social crises also bear down upon us. The stakes have never been so high and the need for food and farming systems which help to deliver food security and wellbeing is urgent. They must be sustainable; economically, environmentally, ethically and socially.

Sustainable farming and food systems for food security and wellbeing

To achieve food security, many issues within the agricultural and food systems must be addressed. To become sustainable, an additional suite of changes is needed. One measure proposed to address these is ‘Sustainable Intensification’ (SI). Intensification of farming has led to intensive farming, at great cost to people, the planet and farm animals. Intensification in the west has produced farming which is inherently unsustainable. It is characterised by the overuse of limited resources, whilst causing widespread pollution and degradation of soils, habitats and biodiversity. Livelihoods and communities have also been harmed as farming has intensified. Farming and diets in industrialised nations must de-intensify to reach sustainable levels. Waste and losses must also reduce.

Optimal food and farming systems balance the needs of all stakeholders

Improvements in farming, food systems and consumption are needed and many aspects, cultures, agendas and practices need to be balanced in the development of optimal farming. This should support wellbeing and produce food and farming systems which are optimised across the needs of all stakeholders, including farm animals, which currently stand at 70 billion per year. Models which seek to balance farming within ecological and social parameters include permaculture and agro-ecology, both of which could increase their consideration of animal welfare, as has been achieved in organic farming.

Intensification of agriculture and diets can reduce food security

The current food system provides enough food for 10-12 billion people, but the food system is failing due to losses, waste, poverty, regulations and distribution issues. Intensification of animal farming and overconsumption have added to food-related public health problems rather than solving them. It has fuelled greater meat consumption which is linked to cancers and heart disease, it produces food of lower nutritional value\(^1\) and increases the risks of important zoonotic diseases. Grain-based farming also reduces the food resource base available for people.

Research shows that intensifying livestock diets towards grain-based farming would be detrimental to food security, particularly in areas where food security is already at risk. Extensive livestock farming provides more scope for delivering food security\(^2\). Increasing consumption of livestock products also reduces food security. Interventions that reduce animal and crop losses, waste and overconsumption will improve the environmental, economic, social and ethical sustainability of food systems. Research shows that improving crop yields and reducing poverty are also key to achieving food security.

Given the unsustainable impacts of intensified agriculture to date, the terms ‘sustainable’ and ‘intensification’ do not sit well together and produce an oxymoron.
Measuring sustainability in farming is flawed

Metrics matter: Compassion in World Farming commissioned two independent research reports showing that current metrics for measuring agricultural sustainability are limited and can lead to sub-optimal decision making. Water footprints measure the amount of water used, and do not attempt to assess or indicate the significance of this water use on the local environment or water management. A high water footprint for beef, for example, is not a measure of the environmental impact, which could be relatively small given that cattle use mainly rainwater in areas of high rainfall. Yield is another input-output based metric which measures units of product per unit of land. It is no measure of the quality of land or the impact on land availability for other purposes. Cattle and sheep use large amounts of land to produce meat and other products, but this is often marginal land which is of no potential nutritional value to people. In contrast, industrially farmed chickens are entirely dependent on high grade grain from prime arable land which could otherwise be used to feed people directly far more efficiently. New metrics are needed. To ensure that the ethical and social aspects of sustainability are delivered, metrics to measure animal welfare should be included in sustainability assessments. These can be based on the widely recognised Five Freedoms, which indicate both animal health and welfare.

Methodologies: Carbon Footprinting and Life Cycle Analysis are often used to assess the environmental performance of production systems. Our research identifies a number of significant limitations when these are applied to livestock systems. These include the reliance upon modelling and averaged data and lack of clarity about the impacts of land use change. Major issues arise from different approaches to defining the boundaries of farm systems, especially for beef and dairy. These factors can produce conflicting results, and the ranges of uncertainties can be so large as to make comparisons between intensive and extensive systems meaningless. New methodologies are needed to assess the impacts of farming on all sustainability criteria, including animal welfare.

Animal welfare suffers through intensification

The intensification of farming has resulted in intensive farming, where production is prioritized above all else; animals are treated as commodities rather than as sentient beings and are often denied their basic physical and behavioural needs, causing great suffering. They are often bred and fed in ways which push them beyond their physiological capacity, leading to pain, diseases and premature death.

In low income nations, some interventions can enhance farm systems with multiple benefits. Improved access to water, shelter and veterinary care can improve animal welfare, human welfare, sustainability and food security. We wouldn’t call this ‘intensification’; this is basic animal husbandry. For caged animals, however, de-intensification is preferable and can improve many sustainability goals.

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Intensification has lead to multiple abuses of animals and impacts on people and the environment.

New metrics and methods to measure the sustainability of agriculture are needed.

Steps to improve farm productivity through improving animal welfare are welcomed, but this would not be termed ‘intensification’.

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