

Flying bamboo across the globe and invisible animals: Tales of feeding animals in zoos

Sabrina Brando, Patrícia Rachinas-Lopes, and Max Norman, AnimalConcepts

Abstract

Contemporary zoos, aquariums, and other facilities housing animals in human care are concerned with their core values of animal wellbeing, education, and conservation. There is a wide variety of species living in zoos worldwide, spanning across many different taxa, with an enormous diversity of diets bringing its own set of challenges. While some organisations fly fresh bamboo around the world to satisfy the nutritional needs of the giant and red pandas, others grow different varieties on location; meat may be sourced locally from higher welfare farms, or through intensive farming systems with mainly ‘invisible’ animals; fish could be sourced from through environmental damaging fishing practices, or through certified fisheries stewardship arrangements. The enormous quantities of waste and greenhouse gasses produced throughout the food system, how food is produced and transported, negative impacts on freshwater resources, species and biodiversity decline, destruction of habitats due to deforestation, and the impacts on the wellbeing of individuals used as food for others warrants a closer investigation on how food is sourced in zoos. With animal wellbeing, species, and nature conservation as their missions, organisations housing animals must align their practices to reflect care and respect for all animals, peoples, the greater community of life and planetary wellbeing.

The complexity of food systems in zoos and aquariums

Zoos and aquariums are uniquely responsible for sourcing food for a wide variety of animals and people, including but not limited to human staff and visitors as well as potentially dozens to hundreds of different unique animal diets with respect to individual nutritional, psychological, and behavioural needs. Zoos must also consider how they are exemplifying their commitment to conservation, education, and animal wellbeing - for all animals and not only those living in the facility - through all processes, including the purchasing decisions made for food for animals and people. Food systems are complex, with many interconnected moving parts. Different areas of food production will utilise different levels of inputs and will have different levels of outputs, all with different degrees of sustainability and unsustainability. The interactions between food producers and biological systems are variable and equally complex, including in their impacts on biodiversity and land use. Ultimately, food systems for visitors and for animals contain multiple moving parts - including both ecological and sociocultural elements - that are not always thought about during purchasing decisions. In practice, we think firstly about keeping visitors happy and ensuring we can cost-effectively feed the animals in our care, and give less consideration to the peoples, wild and domestic animals, and the greater community of life impacted by all elements of the food system.

Paradoxes in purchasing decisions and "walking the talk"

Zoos must first and foremost consider animal wellbeing and how food can be reliably sourced including ensuring that the supply is consistent and affordable. This can lead to paradoxes where what we are doing in practice and the decisions we are making surrounding the sourcing of food is not aligned with the values we are committed to, such as:

- Significant food miles of shipping specialist diets around the world, such as bamboo for giant pandas, eucalyptus for koalas, specialist fish for piscivores, specialist pelleted diets manufactured overseas, and other ingredients which cannot be sourced locally depending on the season and local climate
- Sourcing fruit or soy from monocultures grown on former rainforest land in a manner that is damaging to wildlife and to indigenous peoples, threatening the wild habitats of the very same animals we are trying to feed in our care
- Feeding meat that has been sourced from intensive agricultural systems, termed invisible animals, that do not meet the welfare standards the zoo strives for

Consideration for food systems is a holistic process that includes thinking about where ingredients come from and how they are grown, cared for, or produced, as well as all other stages of the process - including how food is transported, how food is stored, how food is prepared and delivered to animals, and, ultimately, how waste is managed. It is also important to think about the messaging and values that we are putting into the world surrounding our purchasing decisions, and "walking the talk" with the values we want to impart to visitors and the behaviour change we wish to encourage.

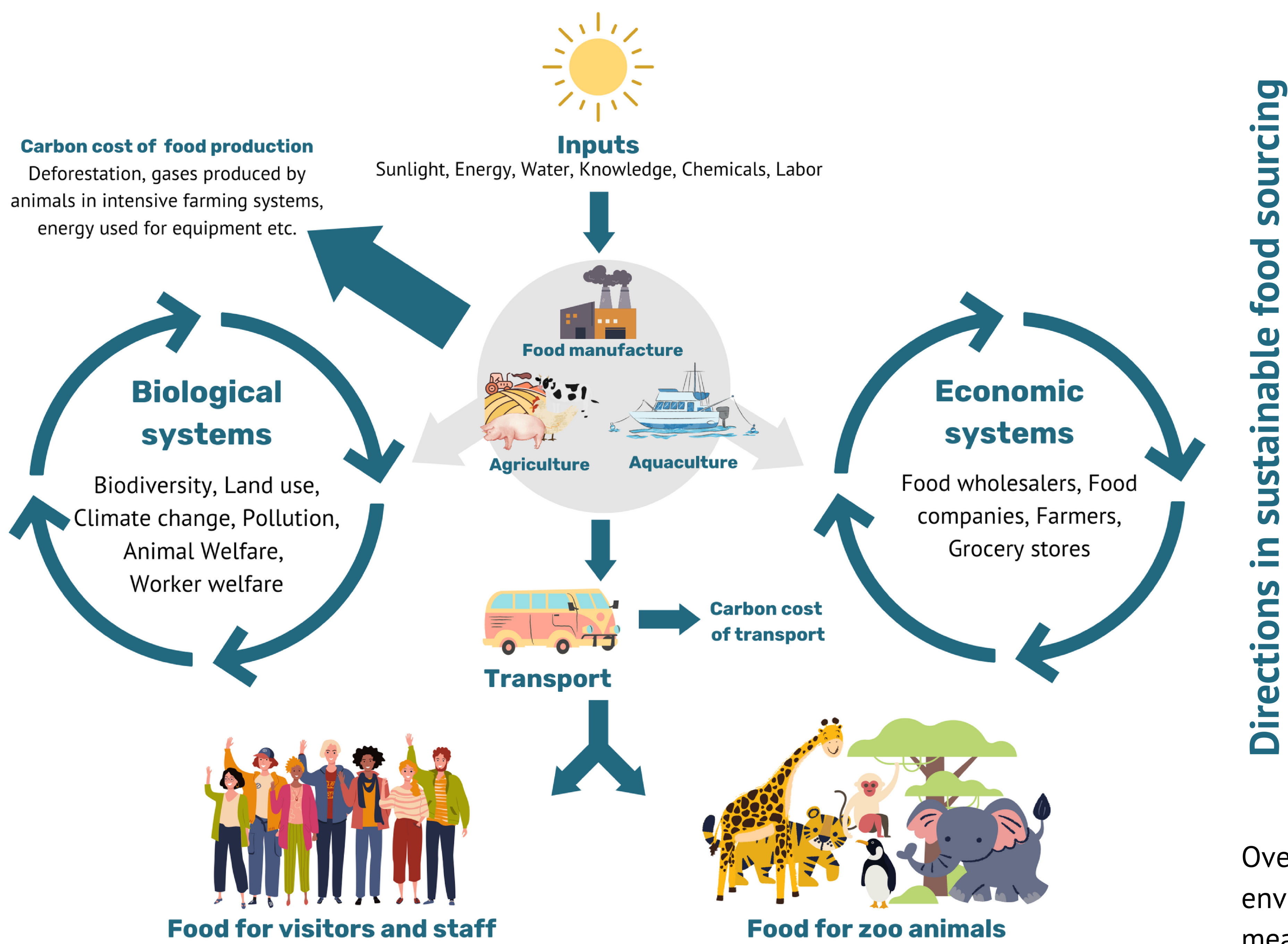


Figure 1 The complex systems involved with sourcing food for people and for animals.

Food category	Current sustainability challenges	Potential options to explore
Fruits, vegetables, browse	Food miles associated with transport of seasonal fruit and vegetables, sourcing of former rainforest products including certain fruits and nuts, chemical use on soil, soil degradation, worker welfare, energy consumption for heating and cooling	Growing food on-site with strategies such as hydroponics systems, on-site browse plantations, or greenhouses; discounted food from local supermarkets and smallholders; buying from only Fairtrade labelled sources and organic farms
Meat and animal by-products	Wellbeing of animals in farming systems; intensive resource use for agriculture including water and energy requirements; carbon footprint of agriculture; reliable availability of food and economic challenges	Independent animal welfare audits of farmed animals used for food, including alternative sources of meat such as insect, and switching to plant-based options when possible - especially for humans
Fish and other ocean products	Overfishing, habitat degradation through ocean trawling and deep sea fishing methods, bycatch and biodiversity loss, nutritional qualities of fish, concerns related to nutrient loss during storage and thawing	MSC accreditation of suppliers, seafood "good fish" list, seafood rulers, sourcing locally where possible from sustainable and more fish-friendly fisheries, including for fish supplements

Overall, we as a community concerned with animal wellbeing, conservation, and education towards eco-conscious and environmentally positive behavioural change should ensure we are at the forefront of embodying these values. This means more thought to all aspects of the complex food systems for people and for animals, and ensuring we are taking steps to align our practices and processes with the values and ethos that we are united to stand for.