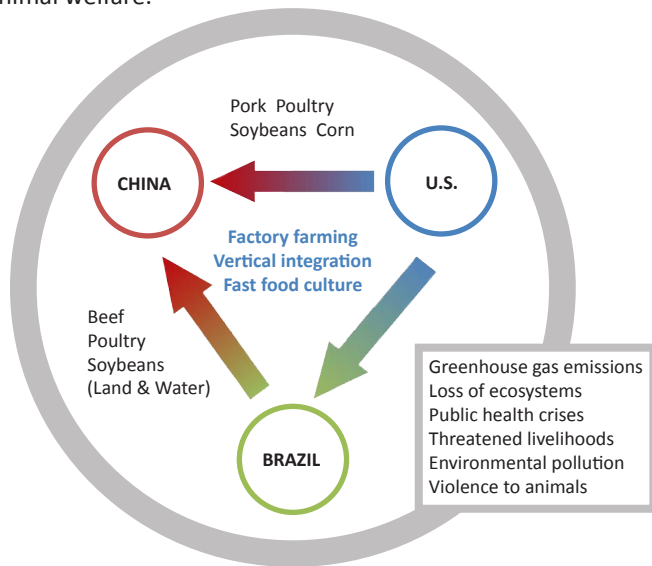


## Summary

### ***The Triangle: The Evolution and Future of Industrial Animal Agriculture in the U.S., China, and Brazil***



To many people from different cultural backgrounds, a “better life” can’t go without meat, eggs, dairy and other animal products – a vision closely linked to industrialized Western countries. As living standards improve in emerging economies, rising consumption of animal products is one of the factors fueling the expansion of Western-style, large-scale, intensive animal farming (factory farming) and feed crop monoculture. Such practices present considerable challenges for climate change, natural resources, environmental health, public health, farmers’ livelihoods and animal welfare.



The U.S., China and Brazil are three big players in the global meat and feed sector. They form three points of a triangle (see figure): a major exporter of mature industrialized livestock production chains, a rapidly growing economy with a huge appetite for animal products, and a country with conflicts between the seeming economic benefits of increasing livestock-related agricultural production and the need to protect some of the most beautiful and ecologically important ecosystems on planet Earth. The impacts of expanding factory farming are not, however, restricted to these countries (see box).

**How did we get here?** In the U.S., technical innovations after World War II led to the emergence of industrialized animal farming practices and confined feeding facilities. Vertical and horizontal integration methods adopted by big agribusinesses, together with government subsidies beneficial to them, has facilitated capital concentration, promoted factory farming, and created an oligopolistic market.

In China and Brazil, in addition to domestic attempts at scaling up animal production, market-oriented development since

the 1990s has also allowed penetration of multinational agribusinesses, which brought capital-intensive production chains and management patterns. For decades, agricultural policies in both countries have been promoting industrialization and intensification of agriculture, contributing to the development of factory farming.

**How should we respond?** One common theme in these three countries, as well as many others, is that from the economic perspective, in the face of growing demand, the evolution towards capital-intensive industrialized production is inevitable and desirable. Equally certain, however, is that from the ecological and sociological perspective, such evolution is unsustainable, and more importantly, adjustable and even avoidable.

The concept of “delegitimization” has been discussed in the context of curbing fossil fuel consumption. Similarly, delegitimizing over-consumption of meat has the potential to change the current dominant system to a more sustainable one. Reconsidering the relationship between human beings and animal products, groups and individuals are standing up and making changes around the globe.

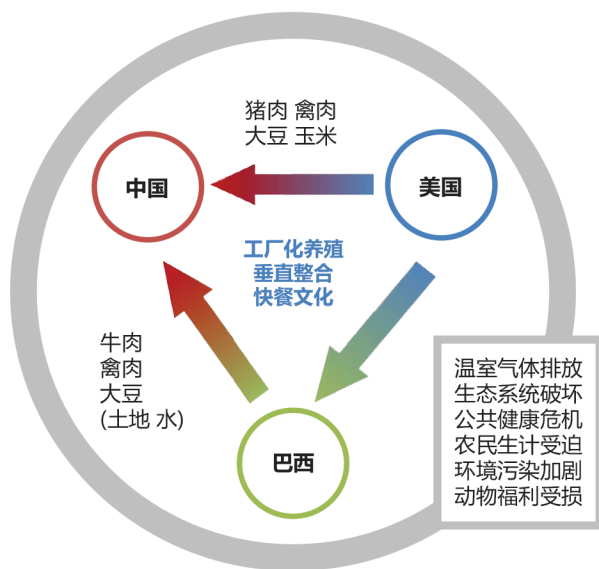
For such a “globalization from below” to succeed, however, policy support is also needed, such as suggested consumption levels, reduced subsidies for the meat and feed sectors, stricter environmental regulations with stronger enforcement, and convincing public education.

#### **Soybean Monoculture in Paraguay**

Soybean is the major ingredient in animal feed used in most of the world’s factory farms. Responding to the growing global demand for animal products and therefore animal feed, Paraguay has emerged quickly during recent years to become a major soy producer; it is now the world’s fourth largest soybean exporter. Like its neighbor Brazil, Paraguay is now experiencing the negative impacts of industrialized soybean mono-cropping. These impacts include severe deforestation, loss of biodiversity, soil and water pollution by pesticides, and threats to the livelihoods, health, and rights of small farmers and indigenous communities.

Source: *The Impacts of Unsustainable Livestock Farming and Soybean Production in Paraguay*, Global Forest Coalition, 2014

对很多来自不同文化背景的人们来说，肉、蛋、奶和其他动物制品都是“美好生活”里不可或缺的元素。西方工业化国家曾是这一观念的典范。在新兴经济体中，随着人们生活水平的提高，不断增长的动物制品消费量作为主要因素之一，正在推动西方式大规模集约化养殖（又称工厂化养殖）和饲料作物单一种植的普及。这些生产方式，给气候变化、自然资源、环境健康、公共健康、农民生计和动物福利都带来了十分严峻的挑战。



今天，美国、中国和巴西是肉类和饲料行业中规模最大、市场占有率最高的三个国家。它们形成了一个极具影响力的三角（见上图）。其中，美国是农产品出口大国，也将成熟的工业化牲畜养殖生产链输出到了其他国家；中国是人口密集、经济快速增长的崛起中的大国，对动物制品的需求日益膨胀；巴西则处在难以取舍的困境中：究竟是要积极提升牲畜和相关农产品的生产和出口量，在国际市场上进一步拓宽疆域，还是要着力保护这地球上最美丽、生态价值最高的一些生态系统。需要注意的是，不断扩大的工厂化养殖业所带来的影响，并非局限于这三个国家（见右侧方框）。

**这样的局面，是如何形成的？**第二次世界大战结束后，随着技术的革新，工业化牲畜养殖方法和封闭式饲养设施在美国出现。在高额政府补贴的促进下，大型食品和农具公司通过垂直整合和水平整合，实现了资本的集中，推广了工厂化养殖模式，并逐步形成了寡头市场。

几乎与此同时，中国和巴西也通过不同方式，各自开始了牲畜规模化养殖的尝试。二十世纪90年代初起，中国的改革开放和巴西的贸易自由化为跨国农产品公司的加速渗透提供了便利，促使这两国向资本密集的生产链和管理模式敞开了国门。长期以来，中国和巴西的农业政策均大力支持农业的工业化和集约化，这也促进了工厂化养殖业的发展。

**放眼未来，我们该如何行动？**包括中、美、巴在内，很多国家对资本密集的工厂化养殖都抱有相似的态度，即从经济学角度看来，面对不断增长的需求，动物制品生产的资本密集化是必然且符合期望的。但同样可以肯定的是，从生态和社会学角度看来，这样的演进不可持续；更重要的是，我们能够改变甚至绕开这种演进过程。

在如何减少化石燃料消耗的讨论中，已经有学者提出“去合法化”这一概念。将肉类的过度消费“去合法化”，可有助于改造目前居于主流地位的食品系统，使其更加符合可持续发展的需求。通过反思人类和动物制品间的关系，越来越多的组织和个人已经行动起来，在全球各地推动着食品系统的可持续化改造。

然而，这种“自下而上全球化”运动若要成功，也不可缺少国家政策的支持，比如调整消费水平目标、减少对肉类和畜禽饲料行业的补贴、制订更加严格的环境保护与治理法规、增强执法力度，以及就相关问题开展公众教育活动。

### 巴拉圭的大豆单一种植业

大豆是工厂化养殖所使用的畜禽饲料的主要原料。随着全球动物制品及畜禽饲料需求的增长，巴拉圭的大豆种植规模在近几年间迅速扩大，使该国跃升为世界第四大大豆出口国。和它的邻国巴西类似，巴拉圭也正承受着大豆工业化单一种植带来的负面影响，例如大面积的森林滥伐、生物多样性损失、农药造成的土壤和水源污染等，小农户和原住民的生计、健康和权益也频频受到威胁。

来源：《巴拉圭不可持续的牲畜养殖和大豆生产带来的影响》，全球森林联盟，2014