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Meatification and everyday geographies of consumption in Vietnam and China

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ABSTRACT

The rapidly escalating production and consumption of meat across the world has drawn much attention in recent years. While mainstream accounts tend to see the phenomenon as driven by ‘natural’ processes of consumption pattern change through economic development, critical geographies have turned to exploring the uneven capitalist processes underpinning what Tony Weis calls ‘meatification’. In Weis’ view, meatification unfolds through what he calls ‘the industrial grain-oilseed-livestock complex’, which is presently becoming a dominant form of agricultural production worldwide. Simultaneously, but less thoroughly investigated in the emerging scholarship, meatification unfolds in and through everyday geographies of consumption that we conceptualize as variegated ‘meatscapes’. By bringing together critical geographers’ interest in the political economy of meat with practice theory and consumption research, this contribution furthers the geographical dialogue around the spatial transformations brought about by meatification. Looking at Vietnam and China as examples of rapidly meatifying countries, we explore the intersection of macro-scale spatial transformations through trade and commodity flows and, at the micro-scale, transformations in food practices. We thus argue for an approach to meatification that is multi-scalar and conducive to further regionally specific research of meatification in Asia and beyond.

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Introduction

The rapidly escalating production and consumption of meat across the world has drawn much attention in recent years. Conceived of as ‘the livestock revolution’ by the FAO and others (Delgado et al. 1999; Delgado 2003; Steinfeld et al. 2006), or as part of a ‘nutrition transition’ (Popkin 1993; Popkin, Adair, and Ng 2012), the phenomenon sometimes appears driven by ‘natural’ processes of consumption pattern change through economic development and increasing affluence. Increasingly, however, critical geographers are questioning these dominant narratives, insisting that we think of the rise of meat in the world economy as a capitalist phenomenon through and through (Weis 2013; Emel and Neo 2015; Neo and Emel 2017; White 2017; Jakobsen and Hansen 2020). A leading proponent of such critical approaches is geographer Tony Weis (2007, 2013), who argues for seeing what he terms ‘meatification’ as a geographically uneven process of capitalist expansion. In Weis’ view, meatification unfolds through what he calls ‘the industrial grain-oilseed-livestock complex’ that is presently becoming a dominant form of agricultural production worldwide, connecting the world of food and agriculture in novel, intricate ways. Underlying this complex, Weis sees ‘distinctly capitalist

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imperatives' (Weis 2013, 95) driving transformations in accordance with the principle of profit and the pursuit of economies of scale. Similar to Barbara Noske's (1989, 22) argument about the 'Industrial-Animal Complex' being 'embedded in a capitalistic fabric', Weis' idea of such a complex thus presents us with a specifically *geographical* approach to studying meatification.

This contribution addresses a twofold challenge in this literature. First, although we have an increasingly sophisticated critical geography of meatification, significant gaps remain in understanding the actual and systemic ways these processes unfold in countries in the South. Second, the literature has so far been strongly production-centric. As an example, Weis's approach focuses predominantly on dynamics of production, to the point that he seems to suggest that upscaling and intensification of production systems through the industrial grain-oilseed-livestock complex largely explains meatification (Neo and Emel 2017, 6). This has spurred Neo and Emel's (2017) recent work on the geographies of meat to ask that we go further in thinking of meatification as inherently *multi-scalar*, irreducible to production alone, where consumption needs to figure as a consequential part. While Weis already hints at this in his mention of how meatification necessarily is 'deeply embedded in everyday life' (Weis 2017), there is need for further research. Neo and Emel (2017), on their part, proceed by emphasizing the interlinkages between political economy and commodification of animals with their everyday articulations in biopolitics and governmentality. In this contribution, we suggest a different approach. Bringing Weis's idea of the industrial grain-oilseed-livestock complex into conversation with approaches to social practice, we want to explore the multi-scalar spatial transformations of capitalist expansion these processes are generating in specific geographical spaces, namely in China and Vietnam. In doing so, we draw on statistical sources to explore national-scale articulations of the 'Asian meat complex' (Jakobsen and Hansen 2020). Furthermore, the contribution draws directly on extensive fieldwork on urban food practices carried out by the first author in Vietnam, primarily Hanoi, over a period of several years and including observations and interviews with households, food experts and actors across food systems in Vietnam (see also Hansen 2018). We also seek to extend our analysis by relating insights from this research to secondary sources on meatification in China in the pursuit of broader understanding of spatial transformations in the South. We approach the rapid meatification experienced in both countries by zooming in on different scales. More concretely, drawing upon our earlier work (Jakobsen and Hansen 2020), we first focus on meatification at the national, regional and global scales, revealing important trends in the growth of domestic meat production and the new spatial connections this both drives and is driven by. Focusing on trade in meat and meat products as well as trade in the main feed crops soybeans and maize, we show how spatial connections are forged in the process of meatification in these countries.

Having outlined aspects of the industrial grain-oilseed-livestock complex at these broad scales, we then proceed to zoom in on the urban and neighborhood scales, analyzing how meatification takes place through gradual changes in the geographies of everyday consumption, an analytical dimension that remains only seldom explored in critical geographical approaches to meat (although see Hansen 2018). Instead of approaching increasing meat consumption as solely or primarily the outcome of increased production, we approach food consumption as social practices where provision is one of several factors contributing to change. Echoing the expressed sentiment in the emerging critical scholarship, we take it that any undermining and reversal of the 'violence of indifference' (Springer *Forthcoming*) embedded in the mass slaughter of sentient non-human animals for human consumption 'needs' (socially constructed wants, taste) must perforce face the ways meatification participates in everyday geographies of consumption as practice. Indeed, as Richard White (2015) emphasizes, while drawing on the work of pioneering geographer Élisée Reclus, it is precisely through everyday life that this violence of indifference is embedded in specific *places*. This resonates with the emphasis on 'the spatiality of food systems' and 'food-place relations' (Miewald and McCann 2014, 539–40) that geographers have increasingly come to conceptualize in terms of 'foodscapes' (see also Miewald, Aiello, and McCann 2017; Goodman, Maye, and Holloway 2010; Johnston, Biro, and MacKendrick 2009). Consequently, we argue, *meatscapes* can denote spatial intersection between large-scale geographies of meatification and their everyday articulations in social practice. Like 'foodscapes' (see

Miewald and McCann 2014), the concept of meatscapes has previously been employed in quite different ways and thus requires some clarification. While earlier conceptualizations of meatscapes have highlighted the availability of forms of meat in specific localities (Schneider 2013) or ‘the ways that meat-eating and meat-centered rituals permeate culinary practices, cultural identity, and gender roles in food spaces’ (DeLessio-Parson 2017, 1730), we instead seek to approach meatscapes as the scalar intersections where meatification unfolds in the sociality of place. This, in other words, means thinking of meatscapes as where the killing of animals is embedded in everyday life through retailing and consumption of meat.

In order to specify further the ways meatscapes emerge in and through everyday geographies, we draw on recent converging interests in consumption and food studies increasingly centering on social practice (Sahakian, Saloma, and Erkman 2016; Warde 2016). This literature, meanwhile, shows limited interest in political economy of the sort engaged in by the critical geographies of meat cited above. This contribution aims at advancing such a dialogue, and do so by focusing on the role of infrastructure as a spatial connection between the political economy of meat and everyday geographies. Drawing on Shove and colleagues, we take a ‘fluid approach’ and understand infrastructures as ‘material arrangements that enable and become integral to the enactment of specific practices’ (Shove, Trentmann, and Watson 2019, 4). In these infrastructure-practice relations, variegated meatscapes take material shape in specific places through everyday geographies of consumption. We illustrate this analytical angle on new meatscapes in Vietnam and China by interrogating, in particular, core food practices of shopping and eating.

We structure the paper following a scalar logic. After a review of the literature on meatification and the industrial grain-oilseed-livestock complex as well as an overview of our theoretical approach to consumption, we explore our two cases of rapid meatification. Starting with the expansion in meat production and the new spatial connections this depends upon, we move on to consumption and the geographies of everyday life. After outlining the main meat consumption trends in both countries, we focus specifically on the infrastructures of shopping and eating practices, considering how changing geographies of consumption contribute to meatification.

Uneven meatification, the industrial grain-oilseed-livestock complex and everyday consumption

Human consumption of meat has increased at tremendous speed over the past decades, with both the human population and the per capita consumption of meat doubling between the 1960s and the 2010s. By 2013, the average human consumed 43 kgs of meat every year (FAO-STAT). While this amounts to the staggering number of 70 billion animals being slaughtered every year, the projected increase by 2050 to more than 50 kgs of meat every year per average human would amount to the overwhelming number of 120 billion animals killed yearly (Weis 2017).¹ While inhabitants of high-income countries consume most meat, much of the increase in recent decades has taken place in middle-income countries. The so-called ‘livestock revolution’ in these countries has attracted some attention, seen as a largely demand driven phenomenon that has led to rapidly increasing levels of domestic meat production in ‘developing countries’ (Delgado et al. 1999; Delgado 2003). However, although meatification and affluence do correlate, and although aggregated numbers do show a dramatic increase in meat consumption and production in ‘developing countries’, meatification is a spatially highly uneven phenomena, also across countries at similar levels of affluence (Hansen 2018; Hoelle 2017). Indeed, the clustered category of ‘developing countries’ hides the fact that while many parts of Asia and Latin America have seen rapid increase in meat consumption and production since the 1960s, most of Sub-Saharan Africa has seen little or no increase (Godfray et al. 2018; Sans and Combris 2015; MacLachlan 2015).

¹These numbers do not include sea animals and thus ‘do not illustrate the full scale of death’ (Wadiwel 2015, 6).

While the narrative of the livestock revolution does include notice of the need for changing dietary patterns, such mainstream accounts tend to remain confined to promoting individualized consumer choice initiatives driven by the private sector (see e.g. World Resources Institute 2016). This is so despite the increasing attention to detrimental aspects of escalating meat production and consumption. Making the headlines in newspapers worldwide as well as scientific journals, by now ‘we’ all know perfectly well that the rise of soy for feed or the expansion of pastures for livestock rearing contribute ominously to deforestation, species loss – not to mention unimaginable animal suffering – as well as overall environmental degradation (Pendrell et al. 2019). Yet in none of these mainstream accounts does *capitalism* make an appearance. Criticizing such mainstream accounts for naturalizing a most un-natural link between rising affluence and the utterly unsustainable and ethically condemnable production and consumption of meat, Weis (2013) instead presents a comprehensive argument for seeing the industrialization of livestock production according to capitalist principles as the main driver of meatification (see also Heinrich Böll Foundation 2014). Working towards maximizing profit, industrialization of livestock production – like industrialized agricultural in general – involves the generation of ‘accelerating biophysical contradictions’ with their attempted ‘overrides’ having highly deleterious socio-ecological effects (Weis 2010). In the case of meat, at the centre of these processes is ‘the industrial grain-oilseed-livestock complex’. Connecting the elements that go into meatification as a unitary process, Weis proceeds to say that the industrial grain-oilseed-livestock complex

is the dominant system of agriculture across the temperate world, and is spreading to significant parts of the tropics. Its landscapes can be likened to islands of concentrated livestock within seas of grain and oilseed monocultures, with soaring populations of a few livestock species reared in high densities, disarticulated from the surrounding fields. (Weis 2013, 8)

While scholars have echoed Weis in pointing to the importance of meatification to accumulation in the global agro-food system (McMichael 2013; Neo and Emel 2017), emerging work proceeds to trace the emergence of the industrial grain-oilseed-livestock complex in its uneven geographical articulations. We have previously shown how an Asian meat complex is emerging (Jakobsen and Hansen 2020) and will below proceed to see how this manifests in Vietnam and China.

Less thoroughly examined in this body of literature, however, are the ways that the geographical expansion of the industrial grain-oilseed-livestock complex happens through the establishment of patterns of food provisioning that shape, while being shaped by, uneven consumption patterns countries across the world (Hansen 2018; Hoelle 2017; Weis 2013). While this may appear obvious, the geographically specific ways by which meatification is ‘deeply embedded in everyday life’ (Weis 2017), remains, as we pointed out above, underexplored.

Meatifying social practices

Macro-economic processes necessarily play vital roles in shaping everyday consumption. However, decades of consumption research have convincingly shown how consumers are far from dupes, and that consumption patterns are influenced by a wide range of social and economic processes (Miller 1995; Fine 2002; Warde 2016; Shove and Trentmann 2019). Indeed, in the recent revival of theories of practice in consumption research, the fundamentally social nature of consumption represents a theoretical starting point. Closely aligned with ethnographic approaches to the broader field of food studies, eating as social practice emerges as something of an axiom (Mintz and Du Bois 2002), increasingly central to emerging scholarship on food (see Sahakian, Saloma, and Erkman 2016). Overall, food practices – which on the consumer end involves acquiring, storing, cooking, eating and disposing of food – both influence and are influenced by a range of other social practices, fundamentally structuring everyday life. A social practice is a ‘routinized type of behaviour’ (Reckwitz 2002, 249) that by definition is shared by people across time and space. Thus, in a practice-oriented approach to consumption, the individual consumer is of limited interest. Rather, the

focus is on shared and repeated forms of behaviour – practices – in which consumption take part as ‘moments’ (Warde 2005). Practices in turn consist of social, bodily and material ‘pillars’ (Sahakian and Wilhite 2014), what Shove, Pantzar, and Watson (2012) have conceptualized as ‘meanings, competences and materials’.

Practices are carried out by people but both shape and are shaped by their material contexts. As put by Coutard and Shove (2019, 11), ‘infrastructures and practices mutually shape each other in contingent and variegated ways’. Focusing on practices and infrastructure allows us to approach the meeting points between consumption and the ‘systems of provision’ (Fine 2002) that connect it to production. Specifically, we focus on new spaces of food consumption and their impact on the practices of shopping and eating, and emphasize spaces that represent material manifestations of capitalist expansion, such as supermarkets and fast food chains. These new meatscapes form central parts of current meatification processes. Just like Shove, Watson and Trentmann (2019, 210) argue that ‘infrastructure-practice relations are more than material’ through being ‘shaped by the ambitions and actions of states, companies, citizens and consumers’, meatscapes represent material, social and bodily assemblages that connect food consumption to the mass killing of animals.

Before we get to everyday practices, however, we zoom out and approach meatification in China and Vietnam through the Asian meat complex.

The geographies of Asian meatification: China and Vietnam

Asian diets and Asian agricultural systems have been rapidly meatifying, as the region is seeing some of the fastest increases in meat consumption and production globally (OECD/FAO 2016). The geographically uneven processes of meatification in Asia have been explored in recent works located at national scales. Notably, Schneider’s (2014, 2017a, 2017b, 2018) work shows how China’s meatification process implicates reorganization of its agribusiness sector towards large-scale and highly unsustainable capitalist agriculture. Taking more of an urban focus, Hansen (2018) finds that Vietnam’s meat boom has depended upon trade liberalization and capitalist expansion across the systems of provision for meat. In a recent contribution, Jakobsen (2020) explores the processes of agrarian change involved in meatification in India, tracing empirically the industrial grain-oilseed-livestock complex at the scale of rural cultivation practices.

Although meatification has taken place in highly uneven ways, a range of Asian countries has seen rapidly expanding livestock sectors as a regionally articulated Asian meat complex based on regional capital as well as regional and international trade in meat products and feed is emerging (Jakobsen and Hansen 2020). Generating spatial connection between countries as part of the industrial grain-oilseed-livestock complex, this involves intra-regional and international trade flows, where much meat is traded intra-regionally while international flows – particularly from North and South America – play a crucial part through supplying the region with grains and oilseed for domestic feed industries. Thus, meatification is a key driver of spatial transformations in food, both internal and external to the region.

While Asia is currently the fastest meatifying region in the world, China and Vietnam are seeing the fastest increases in meat consumption and production in the region (Hansen 2018; Schneider 2017a). They are also two of the fastest growing economies in the world, as their so-called ‘socialist market economies’ have proved extremely successful in sustaining economic growth (see Malesky and London 2014; Hansen, Bekkevoold, and Nordhaug *Forthcoming*). Since embarking on market reforms in the 1970s (China) and 1980s (Vietnam), both countries have witnessed radical social and economic transformations as large parts of their populations have seen living standards rapidly and significantly improving. Some of the most marked changes are found in the domain of food, as the per capita calorie intake in both countries has increased dramatically over a few decades (French and Crabbe 2010; Marzin and Michaud 2016). At the core of these food transformations are tremendous increases in agricultural output, including in the livestock sector.

Developments in China dwarf all others, with annual domestic meat production increasing from around 2 million tonnes in 1961–86 million tonnes in 2016, a staggering 4200 percent increase (FAOSTAT).² In Vietnam, the rapid expansion of the livestock sector has mostly gone under the radar of the literature on the country's 'success story' of increasing agricultural output. But production in the livestock sector has actually grown faster than production in crops, with rapid expansion of the production of particularly pork and chicken, but also beef (see Hansen 2018). Total meat production reached about five million tonnes in 2016, and the government's goal is for the increase to continue and reach eight million tonnes by 2020 (see Yen 2017).

The Asian meat complex relies on both intra-regional and inter-regional flows of resources, including live and dead animals. In addition to booming domestic industries, both Vietnam and China have also developed into significant meat importers. Figure 1 shows how China's meat imports have surged over the past decades, reaching a total value of USD 9.3 billion in 2016. According to Chatham House (2019) statistics, this adds up to 4.6 million tonnes of meat. Brazil is the main exporting country, followed by Germany and the US. Pork represents more than half of the total value at USD 5.8 billion, followed by beef at USD 2.6 billion and poultry at USD 1.2 billion.

Vietnam's imports have also surged, reaching a total of USD 3.2 billion in 2016 (Chatham House 2019). More than a third of imports in 2015 consisted of frozen beef, mainly from India, but also the United States and Australia; and more than a third was poultry, mainly from the US, but also Brazil and South Korea (Hansen 2018). Imports continue increasing, and as imported meat is often cheaper than locally produced meat, they now represent a significant challenge to local producers (Vietnam News 2019). As Jakobsen and Hansen (2020) show, the Vietnam-India connection in beef trade is highly significant and in need of more sustained inquiry. The numbers presented above fail to capture the dog and 'wild meat' consumption in both countries. Numbers are not available, but both industries are of considerable size in both countries.

Returning to domestic production, the Asian meat complex increasingly relies on imported resources for animal feed. We now turn to looking at processed feed as key ingredients to meatification in the two countries.

Processed feed

Industrial feed represents a core ingredient of large-scale meat production. Asia is a leading region in global feed production, driven mainly by China but with India experiencing rapid growth and Japan, South Korea, Indonesia, Vietnam, the Philippines and Thailand representing significant shares (Alltech 2018). While feed demand is often met by domestic production across the Asian meat complex, the industry is increasingly dependent on imported resources (Jakobsen and Hansen 2020). This connects livestock production to cash crop developments in the region and elsewhere and form a central component of the meat complex.

Again, developments in China dominate the picture. China's imports of soybeans in value terms represent 37 percent of all soybeans trade and 19 percent of all trade in oilseeds in the world (Chatham House 2019).

Figure 2 clearly illustrates the massive China-America connections that have attracted quite some attention, including recently the noteworthy Brazil-China soybean connections and their implications for agri-food restructuring and geopolitics (de Oliveira and Schneider 2016; de Oliveira 2016). China is, together with Southeast Asia, considered to be developing into a significant import base for feed commodities (Kumar 2015). Most of the soybeans used for animal feed in China and Southeast Asia are imported, and the imports have increased at very rapid pace (see Jakobsen and

²We acknowledge that the common tendency to estimate the mass killing of sentient animals in terms of quantity of meat (tonnage) or monetary value rather than number of individual animals killed contributes to hiding the violence involved, thus arguably adding to the 'violence of indifference'. We nevertheless have relied on meat quantity numbers in several places as this enabled us to present comparable numbers between the different databases we have utilized (where statistics on number of animals killed were often unavailable).

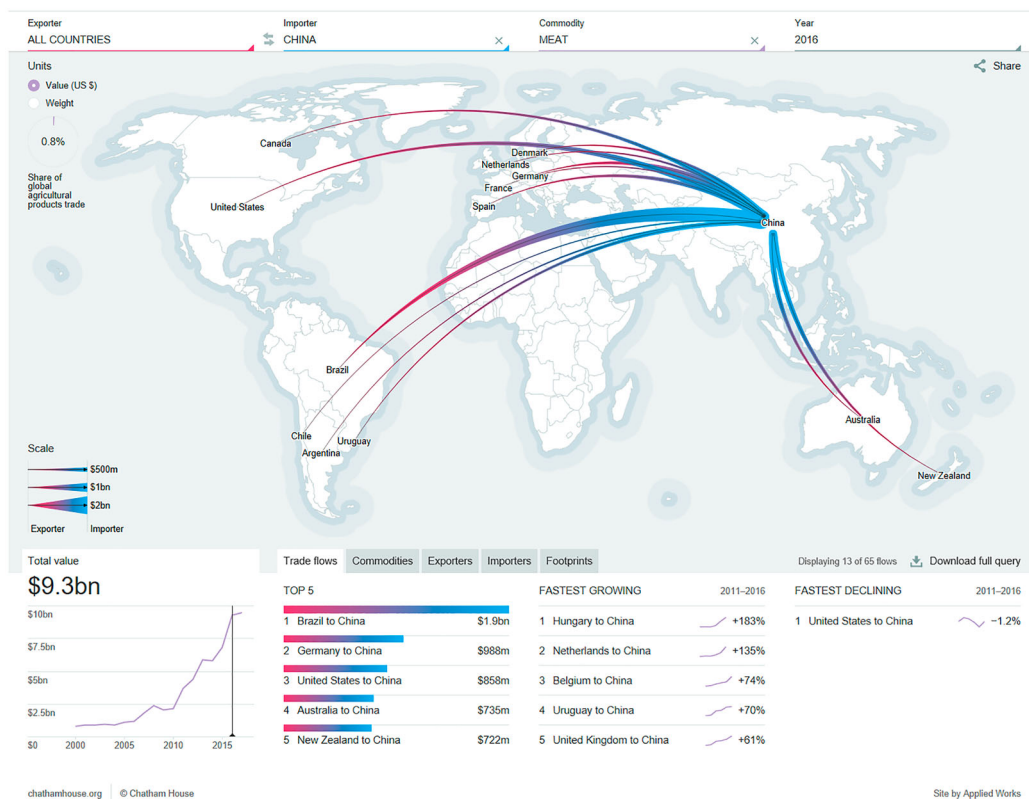


Figure 1. China meat imports, 2016.

Note: Created at resourcetrade.earth (Chatham House 2019) Used with permission.

Hansen 2020). The US has been a key source of Chinese soybean imports, rising from the value of \$1.1 billion in the year 2000 to \$14.1 billion in 2015 (Chatham House 2019). Potentially ramifying ongoing developments in such regard are found in the so-called ‘soybean trade war’ between China and the US, where President Trump’s protectionist and xenophobic moves have triggered retaliatory tariff action from China as well as plans to reduce the use of soybeans in Chinese feed (CNBC 2018). At the time of writing, these developments are threatening to decimate soybean trade entirely. While it is too early to spell out these implications, we make note of statements from Indian officials in the course of these ‘trade wars’ to the effect that India would be willing to step in to fill China’s void in soybean demand (Aneja 2018).

Although at a comparatively smaller scale, Vietnam has also seen rapid increase in soybean imports. Figure 3 shows how also there the American connection is strong, with Argentina as the main exporter, followed by the US and Brazil.

Maize

Maize is the other main feed crop. Regionally, Asian imports from other regions have been growing. Indeed, intra-Asian trade in maize has been declining while trade between Asia and the Americas has been increasing rapidly (Chatham House 2019). This tendency is evident in Vietnam as well, where in addition to significant increases in domestic production (GSO 2017), maize imports – and mainly from Argentina, Brazil and the US – have increased very rapidly. Figure 4 clearly shows the size of these American connections.

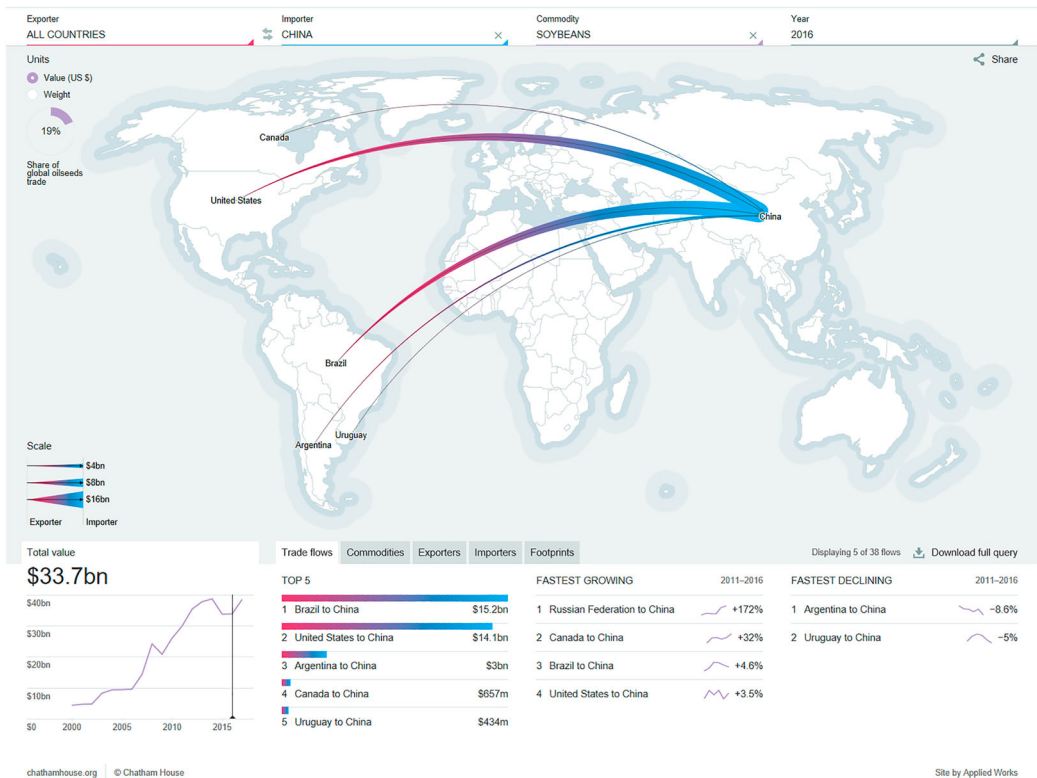


Figure 2. China soybean imports, 2016.

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For once, China is not a significant trade actor. China is the second largest maize producer in the world and maize the largest grain crop in China (Wu and Zhang 2016). The country's massive production of maize, of which 68 percent goes into animal feed (Ely, Geall, and Song 2016), goes mainly to the domestic market as a result of policies aiming at self-sufficiency in grains. Reports suggest that Chinese authorities recently evince some degree of willingness to open up for limited import in maize – as it is categorized as primarily for feed and not food (security) – but that this will be in a very much guarded manner (Lockett 2015). The loosening up of self-sufficiency in maize due to the demands from the feed industry has brought sharply increasing imports of maize in the 2010s (Index Mundi.n.d.). Important here were also changes in the composition of the livestock sector in China, putting more demand on feed grains. As a result, China turned to the US as its main source of imports of maize in 2008 (Dillivan 2015), a pattern that lasted up to 2013 when a GMO controversy brought US corn imports to a halt (Blaustein 2014). Since 2013 China has established a different maize import strategy (Wu and Zhang 2016), where, as of 2017, Ukraine has emerged as the main supplier (56 percent), followed by Myanmar (26 percent), the US, Laos and Brazil.³ This new strategy has strong effects on agriculture in other countries. In Myanmar, for example, maize has emerged as an important export crop of which 99 percent goes to China.

In sum, China's and Vietnam's meat booms have involved expanding domestic meat industries and new international connections. Indeed, meat production in the two socialist market economies include spatial connections to booming cash crop developments in a range of

³See https://atlas.media.mit.edu/en/visualize/tree_map/hs92/import/chn/show/1005/2016/

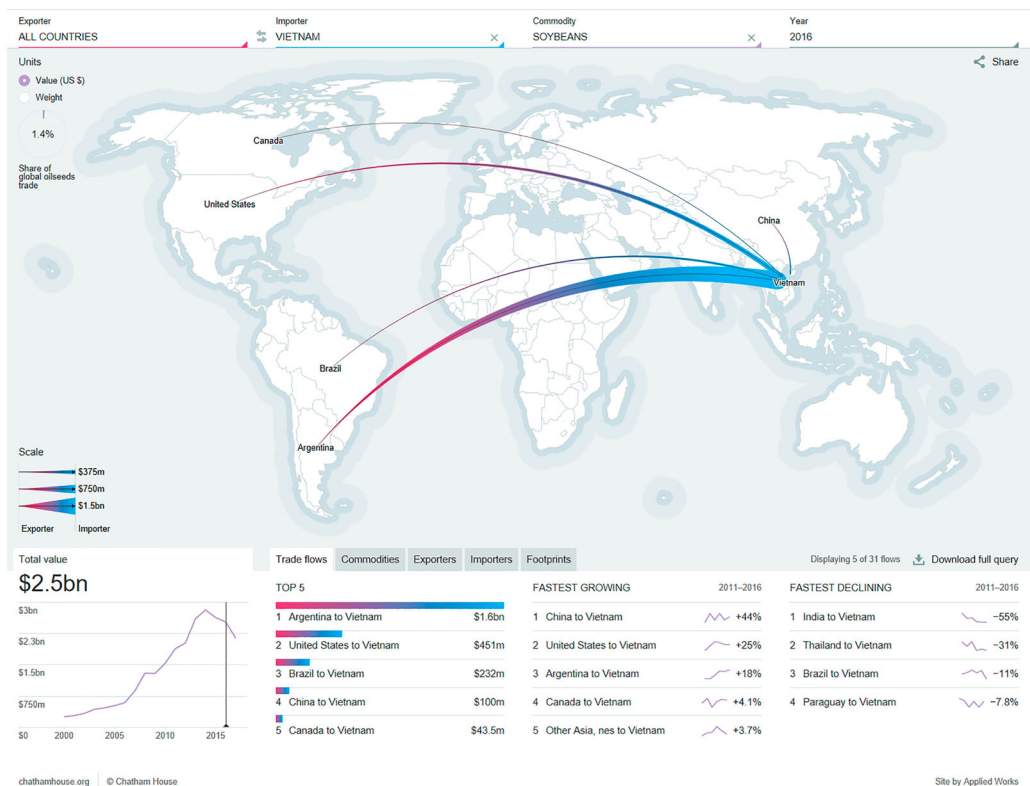


Figure 3. Vietnam soybean imports, 2016.

Note: Created at resourcetrade.earth (Chatham House 2019) Used with permission.

North and Latin American countries. But so far our approach, in line with much of the existing literature on the geography of meat, has mainly centred around supply-side factors. Supply does not magically create demand. Instead, consumption patterns are shaped in complex relationships to systems of provision and everyday practices. We argue that closer attention to everyday geographies can add significantly to our understanding of ongoing processes of meatification in China and Vietnam, as changing consumption patterns emerge with new meatscapes.

Consuming meat

While China and Vietnam still eat considerably less meat per person than most affluent countries⁴, both countries have seen very rapid increase in meat consumption the past few decades.

Figure 5 shows the meat booms in China and Vietnam compared to global and Asian averages. Studying the meatification of food provision and practice in Vietnam, Hansen (2018) has shown how the massive increases in meat production and imports have been central to this boom, but argues that these supply-side factors fail to tell us why Vietnamese eat so much more meat. Rather, he shows how meat intensification of food dishes, the influence of foreign, meat intensive dishes and practices, the increasing prevalence of eating out and the associations between meat and progress all are crucial factors in co-shaping demand.

⁴For example, in 2013 the average EU citizen ate 81.26 kgs and the average US citizen 115.13 kgs of meat during a year (FAOSTAT).

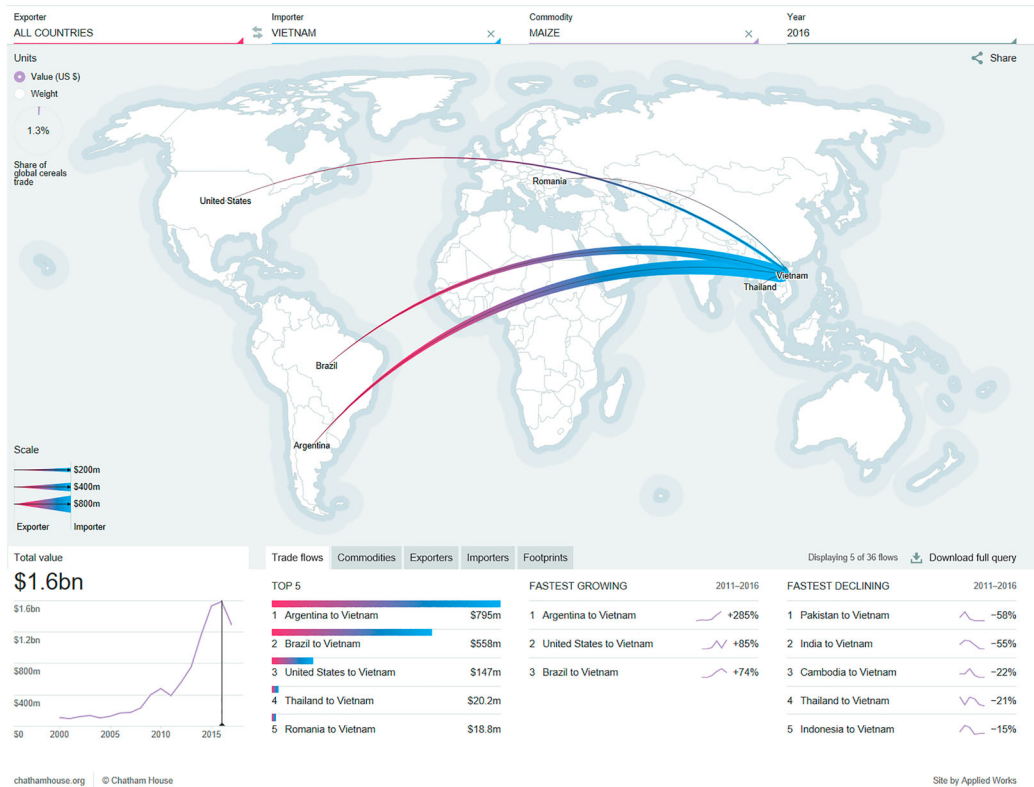


Figure 4. Vietnam maize imports, 2016.

Note: Created at resourcetrade.earth (Chatham House 2019) Used with permission.

A similar case could be made for China's meat boom, which is equally dramatic to that of Vietnam. Chinese average annual per capita meat consumption increased more than eighteen-fold from 1961 to 2013, reaching 61.05 kgs. While this is still considerably lower than most affluent countries, it is for example much higher than Japan's average of 49.45 kgs annually (FAOSTAT). While again a dramatic upscaling of domestic meat production (Schneider 2017a), combined with rapidly increasing meat imports, has made the Chinese meat boom possible, shifts in diets occur through everyday practices and food cultures.

China and Vietnam share many cultural traits after a long history involving both peaceful exchange and centuries of forced co-existence (e.g. Goscha 2016). Among them seems to be a culture for eating meat, although not long ago meat was a luxury very few could indulge in in both countries (Oxfeld 2017; Peters 2012). Meat, and especially pork, is today affordable and has become a central part of the diet in both countries. Access to meat is closely associated with ideas of progress and a symbol of celebration and social status (Hansen 2018; Watson 2014). The consumption of animal flesh is indeed cosmologically rooted, for example seen in ancestor-worship offerings and feasts (Avieli 2012; Oxfeld 2017). Meanwhile, Buddhist vegetarian traditions have been reduced to a couple of meat-free days a month (Avieli 2012). Cultures for eating meat is of course common across the world (see for example Anderson 2014), but a look at the extremely high levels of meat consumption in the wealthy Chinese enclaves of Hong Kong and Macao (FAOSTAT) suggests that culture is an important factor.

Returning to the infrastructures and practices of food, in China, just like in Vietnam, gradually changing food practices and infrastructures of food have been central to the meat boom. In the

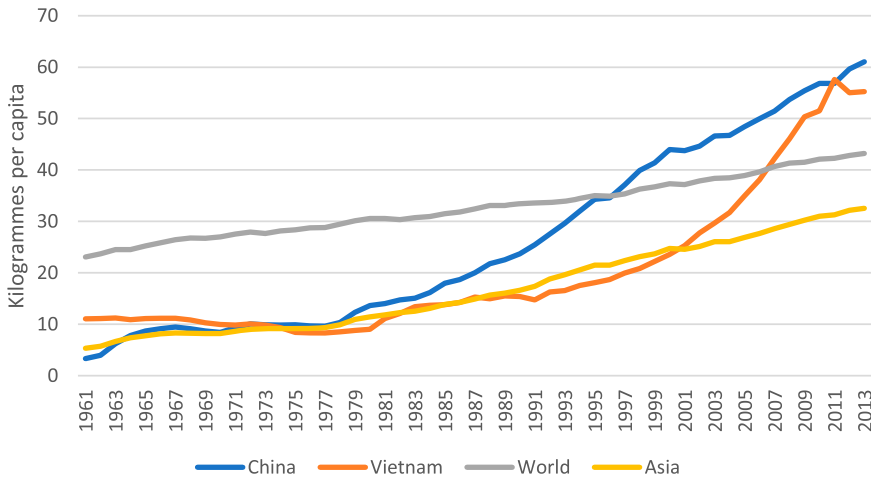


Figure 5. Annual meat consumption per capita, China and Vietnam, 1961–2013. Source: Compiled by authors based on numbers from FAOSTAT.

following, we shed a light on infrastructure-practice relations in emerging meatscapes through examples of changes in two core food practices: shopping and eating.

Everyday meatscapes: infrastructures and practices of shopping and eating

Alongside rapid economic development and urbanization, China and Vietnam have seen radical changes in the geographies of consumption. First and foremost, the availability of goods has increased dramatically, and combined with more money to spend and more willingness to spend it, accessibility has been fundamental to the construction of consumer societies in both countries (see Hansen *Forthcoming*). In terms of meat, new food spaces – meatscapes – are important for all food practices. To start with shopping for food, both China and Vietnam have been home to significant ‘supermarketisation’ with large supermarkets and a wide range of mini-marts gradually replacing traditional ‘wet markets’ and street vendors as the main spaces for urban food acquisition. This contributes to changing food-shopping practices, as it becomes more common to travel by car or motorbike to buy food and more common with bulk shopping instead of going to the market every day. Interestingly, and perhaps ironically, the large supermarket chains are able to benefit from a series of food scares and the fact that food safety has come to be ranked as a main social concern in both countries (see Ehlert and Faltmann 2019; Zhang 2019). Not knowing what to trust, many consumers believe imported food from the supermarket, or, particularly for the case of China, bought online (Zhang 2019), is safer than local markets. In Vietnam, this is especially the case for foreign supermarket chains. A retired and relatively affluent woman in Hanoi can serve as an example here. She explained how the current food situation had led to changes in her food shopping. She was used to going to the market nearby in Hanoi’s French Quarter every morning, but had now started to travel by taxi to the Japanese supermarket Aeon, close to 10 kilometres from her house, once a week. In her own words:

Yeah, [in the past] I would go every day. Because we Vietnamese need fresh food. Fresh vegetables, fresh meat. Every day we buy food for one day. But after the food quality was reduced, I started to go to the supermarket. I don’t dare to buy outside [in the market]. Because, quite simply, outside, people don’t care about the quality of the food. Just about money. Even the people who go check the hygiene, they would take money under the table and give them the certification, so how do you know what to trust?. (Interview, Hanoi, March 2017, translated from Vietnamese)

Aeon, like the Korean-owned Lotte Mart, are at the top of the hierarchy of the new supermarkets in Vietnam. Accommodating the Vietnamese culture for fresh food, as the woman above described, the

supermarkets have large fresh food departments, including for meat. Clean and tidy, these serve as an alternative to the streetside butcher shops. As the retired Hanoian woman continued, 'I think the butcher place is really unhygienic, the place they put the food is not clean, and even the machine they use for grinding the meat is also not clean. So if I go to the market, I see this kind of uncleanliness, and I'm afraid of eating the food.' Supermarkets represent new meatscapes that clearly influence the spatiality and temporality of social practices and through taking on meaning as modern, clean and safe.

Keeping with changing meatscapes, supermarketisation also involves a change in how meat is traded, and the sources of meat at supermarkets are usually different from that of the local meat shop (see Schneider 2018). This is particularly the case for frozen meat, which is unthinkable at traditional markets, both because it goes against a food culture valuing warm meat and because it depends on considerable infrastructure of cooling, or 'cold chains' (Rinkinen, Shove, and Smits 2019). At the supermarket, consumers can acquire frozen meat that has travelled half the world, in many cases even at a lower price than meat from animals raised nearby. If meat is sold fresh, there are obvious limitations as to how long and far it can travel. Frozen meat, as well as processed food and meat products, thus make meat more available and also more spatially mobile. We may speculate, moreover, about the implications of supermarket meat provision for the naturalization of the 'violence of indifference' (Springer *Forthcoming*) as distance and silencing of animal suffering increases vis-à-vis individual consumers (Neo and Emel 2017).

Moving on to the practices of eating, statistical data show that meat consumption tends to increase with increasing affluence and with urbanization (Kearney 2010). A central factor here seems to be the prevalence of eating out. In the words of Browne, Mylan, and Di (2017, n.p.), in China 'Larger quantities of meat have become woven into societal expectations about 'good' meals'. This is particularly the case when dining in restaurants, they find, which again echoes Hansen's (2018) findings in Vietnam. Increasing prevalence of eating out, as well as changing habits for shopping for food, represent examples of the importance of geographies of consumption. Indeed, Lange's (2016) cross-country examination of Asian meat consumption trends points to cities, with their middle class driven patterns of eating out, as 'hotspots of changing consumer cultures'. Urban life often includes eating away from home, whether out of necessity, convenience or comfort, and meals outside the house tend to include more meat than meals eaten at home (Popkin, Adair, and Ng 2012). The exact reasons for this may vary across food cultures, but for the case of China and Vietnam, in traditional home-cooked meals meat often plays a small part in a balanced meal (Avieli 2012). Meals eaten outside can be similar, but tend to involve other dishes and ingredients. As a young woman in Hanoi stated, 'if you want to eat traditional food, you can eat at home' (Interview, Hanoi, April 2017, translated from Vietnamese). Practices of eating out can also be highly meat intensive. This includes, for example, local varieties of street-side barbecues and masculine drinking feasts including prominent ingredients such as dog meat or 'wild meat', the latter which can involve considerable prestige and include a range of protected and endangered species (see Drury 2011).

Perhaps more obviously, eating out involves imported food practices, whether Korean barbecue restaurants, American steak houses or a wide range of fast food chains. What these widely different food spaces tend to have in common, is that meat is at the centre of the meal rather than one of several components.

Fast food chains come in many different shapes. The globally dominating brands such as McDonald's and KFC are present in China and Vietnam, and the latter has proved particularly popular in both countries. In addition, a range of local varieties exists, and in Vietnam also large Asian brands such as Lotteria from Korea and Jollibee from the Philippines are becoming widespread.

In Vietnam, fast food is often seen as something mostly children enjoy. A new urban generation has grown up used to quite different tastes from older generations, often to the surprise of parents and grandparents. The thoughts of a middle-class woman in her thirties summarize opinions that are common to come across in Hanoi:

When I was small ... we had a lot of different streetfood. But just like *oc nong* [snails] or that kind of thing. Not any fast food. And then fast food happened, and then I think a bit younger generation than us they started to learn to like it. Like kids nowadays, they like to go to KFC. It's horrible! But it's like our generation we didn't grow up with it, so we're kind of exempt from it a little bit. It takes me time to like fried food. Deep fried is too much for me. (Interview, Hanoi, March 2017)

The new spaces for food consumption are not bringing about entirely new food practices, but are rather able to build on existing practices. Going out to eat was common before these places were established, and street food remains highly popular in Vietnamese and Chinese cities. But they often change the content of food practices significantly. In China, fast food spaces also tend to serve as spaces for hanging out, for, for example, doing homework (Yu 2014). These practices are not as common in Vietnam, where cafes, tea houses and coffee shops tend to be the preferred options.

Importantly, going to a Western fast food restaurant does not necessarily entail a 'Westernisation' of diets. Fast food chains adapt, create menus adapted to local taste buds and become integrated in different food cultures (see Watson 2006). But it does contribute significantly towards global homogenization in terms of people eating more animal source food, more fat and sugar and in general more highly processed food. This is often referred to as a 'Western' diet in the food and nutrition literature (see for example Kearney 2010), what Otero (2018) perhaps more accurately labels the neoliberal diet. The expansion of fast food chains and supermarkets globally has led to what Richard Wilk (2018) calls 'global junk', where market forces and corporate interests strongly shape and constrain options for consumers, often towards less healthy food. These processes entail an expansion of domestic, regional and global capital into the everyday geographies of food consumption in countries across the world.

But meatification in Asia also takes place outside the realm of big capital. Just like the Asian meat complex is often comprised of very large numbers of smallholder farmers (Jakobsen and Hansen 2020), a wide range of small-scale agents operate the provisioning of meat. From agents buying and selling meat from farmers through slaughters, middle-men and wet market salesmen, these small-scale operations are vital to food provisioning in these countries. Thus, meatification involves not only large scale industrial farming, but also, for example, thousands of pig carcasses being transported one and one on motorbikes from abattoirs to wet markets in Hanoi. That said, the state is working against such practices in both countries. Schneider (2017a) has thoroughly documented the upscaling of meat production in China, while Garnett and Wilkes (2014) have shown how government policies have supported upscaling and major changes in supply chains across the food sector in China. Similarly, in Vietnam, the government strives to bring big capital into agriculture, and formalize the rest of provisioning chains for food. This includes shutting down existing markets in favour of supermarkets (Wertheim-Heck, Vellema, and Spaargaren 2015), and sees large corporations such as the extremely powerful Vingroup establishing farm-to-fork initiatives where they control the entire supply chain (Hansen 2018). Furthermore, the abattoirs are getting bigger and new actors with more capital are entering the business, transporting carcasses by trucks instead of motorbikes.

The future of meatification: changing demand in China and Vietnam

As stated above, demand is also shifting to different types of meat. Both China and Vietnam mostly consume pork, and represent significant shares of global pork consumption. But the consumption of beef and chicken is growing rapidly (FAOSTAT). The poultry sector is an interesting case of changing consumption and production. In Vietnam small-scale chicken farming has represented the norm and chicken that has been allowed to roam free is favoured due to taste. Now, large quantities of industrial chicken imported from the US, Russia and Brazil quite radically breaks with this trend. At the same time, local producers are looking to scale up production alongside the ideals of the chicken industry in advanced capitalist countries (Vietnam News 2018). Interestingly, many consumers in general now seem to trust factory farming more than

smallholder farming after a large number of food scandals in the country, although an upscale market for ‘clean’ and organic products is clearly also on the rise (Hansen 2017). This is similar to what Schneider (2018) finds in the Chinese pork sector, where the shift from small-scale to industrial farming has developed alongside a shift from fresh meat at the market to packaged and processed meat at supermarkets. Returning to chicken, China perhaps gives an indication of the future of the sector in Vietnam. As both consumption and production of chicken has been expanding very rapidly, China’s poultry sector has long been transforming. Indeed, China by 2014 produced 18 percent of all poultry meat in the world, almost entirely for the domestic market (Pi, Rou, and Horowitz 2014). Meanwhile, the sector has gone through dramatic industrialization, upscaling and consolidation. Pi, Rou, and Horowitz (2014) show how 70 million small-scale farmers left the sector between 1985 and 2005 and how the number of broiler farms decreased by 75 percent between 1996 and 2011 as poultry production transformed from a sideline activity for rural households to a huge industry. Furthermore, by early 2006 there were no more state-owned poultry companies. Instead, large, private operations dominate, including a range of large foreign corporations. Indeed, by 2009, intensive broiler farms represented almost 70 percent of total supply (Pi, Rou, and Horowitz 2014).

Beef is a different story, as demand has rapidly outgrown domestic supply in both countries. Beef consumption is growing very rapidly, as what used to be known as ‘millionaire’s meat’ in China has become more common. This is thanks both to more meat in traditional dishes, such as the famous *pho* noodle soup in Vietnam, and the imported food practices discussed above. Going to a steak house in China and Vietnam is an expensive affair, but can come with significant prestige. Domestic, Korean and Japanese barbecue restaurants also frequently serve imported beef. As for fast food, while many consumers are sceptical towards Western dishes the children of the urban middle classes seem to fully embrace pizza, hamburgers and other foreign fast food (Hansen Forthcoming), something that in turn contributes towards soaring child obesity levels in both countries (French and Crabbe 2010; Do et al. 2015). If hamburgers grow in popularity with the coming generation, this will surely also contribute to boosting beef consumption.

While the trends are clearly pointing towards a further increase in meat consumption in both China and Vietnam, predicting demand is of course notoriously hard. Interestingly, while increasing meat consumption is integrated into government agricultural development plans in Vietnam (Yen 2017), the Chinese government’s dietary guidelines have targeted a cut in meat consumption by 50 percent (Milman and Leavensworth 2016). Furthermore, Browne, Mylan, and Di (2017) have found that meat reduction is a prevalent new practice among the Chinese middle class. Similarly, in Vietnam attempts to cut back on meat consumption, particularly for health reasons, are common among the urban middle class. Being predominantly Buddhist countries, there is certainly potential for a vegetarian revival. To what extent these trends are consequential for overall demand remains to be seen. Vegetarian and vegan sub-cultures have surely existed in parallel – and in opposition – to meat booms around the world. As meat becomes more embedded in everyday food practices, turning the trend around is hard. We know this from many affluent societies, where overall meat consumption has not decreased despite much focus on the negative health and environmental consequences (see for example Ritchie 2019).

Conclusions

Global meat consumption continues increasing, representing the core of the unsustainability of global food and agriculture and based on massive violence against non-human animals. Much of the current expansion is driven by changes in middle-income countries, yet surprisingly little work has been done on meat consumption in these countries. This could partly be due to the fact that mainstream accounts within food, agriculture and nutrition tend to see this expansion as a ‘natural’ outcome of increases in income and urbanization levels, and that critical scholarship has focused mainly on particular regimes of production as central explanation for meat booms. This paper

has argued for combining a political economy and economic geography of meat approach with factoring in everyday food practices. Such a multi-scalar approach has been carried out by studying meatification using both top-down and bottom-up approaches. Specifically, we have analysed expanding meat production in two of the fastest meatifying countries in the world, China and Vietnam, through the lens of an emerging Asian meat complex. Furthermore, we have focused on infrastructure and introduced the concept of meatscapes in order to study the integration of large-scale meatification processes in the places and spaces of everyday life.

This multi-scalar approach has allowed us to show how meatification takes place at the intersection between new production regimes and changing food practices, rather than through individual dietary choices or as some automatic outcome of increasing supply of meat. We have showed how the rapidly escalating meat consumption in both China and Vietnam has depended upon both massive increases in domestic meat production – in turn depending on imports of soybeans from North and South America – and rapidly increasing imports of both meat and meat products and live animals for domestic slaughter. But, by zooming in on everyday life and focusing on the infrastructure-practice relations involved in shopping for and eating food, we have shown how, as put by Warde (2005, 141), '[t]he effect of production on consumption is mediated through the nexus of practices'.

New urban food spaces such as supermarkets change the connections between provision and consumption, and together such changes also increase the distance between consumers and the animals killed and eaten. Processes of supermarketisation change the ways meat is traded and handled, particularly through cold chains and processed meat, making meat more spatially mobile. The increasing popularity of fast food chains has also contributed towards soaring obesity levels in both countries, in processes similar to what Wilk (2018) describes as 'global junk'. The processes we have described are certainly not unique to Vietnam and China, although the pace of the changes in these two countries has been especially fast. Further research, however, is needed to understand the uneven geographies of meatification elsewhere in Asia and in other parts of the world. We suggest that such research needs to be multi-scalar, attentive to the complexity of spatial transformations and pay attention to both production and consumption, both macro-economic processes and the geographies of everyday life. This requires studying statistics and trade flows, but crucially also grounded fieldwork through interviews, observation and participation in food practices in order to study meat consumption as it takes place. Further research should also play closer attention to how different food and meat cultures interact with, are impacted by and influence meatification processes.

A big remaining question is whether meat consumption will continue increasing in China and Vietnam. China is particularly interesting, as the sheer size of the country means consumption trends there have global ramifications. But as the world's 15th most populous country, Vietnam's 96 million inhabitants sure also make an impact. There are clear signs that cutting back on meat is seen as desirable among upper segments of the population in both countries, mainly due to health reasons. In many affluent countries, similar concerns have not led to an overall reduction in meat, but rather a shift towards eating chicken (The Economist 2019). Furthermore, we know that vegetarian trends can co-exist with, and oppose, overall increasing meat consumption in the rest of the population. As China and Vietnam are far from being affluent countries and poverty prevails, there is also the opportunity that, if economic growth continues, new segments of society will expand their meat consumption in the decades ahead. Perhaps more crucially, the Chinese government has stated a desire to limit meat consumption. How this plays out, what tools the government employs to achieve such a goal, and how this affect China's role in the emerging Asian meat complex, could provide for highly interesting further research.

Disclosure Statement

No potential conflict of interest was reported by the authors.

References

- Alltech. 2018. "Alltech 2019 Global Feed Survey." https://www.alltech.com/sites/default/files/2019-01/GFS_2019-slides_ENGLISH_0.pdf.
- Anderson, E. N. 2014. *Everyone Eats: Understanding Food and Culture*. New York: New York University Press.
- Aneja, A. 2018. "China to Get a Helping of Soya." *The Hindu* 14 April. <https://www.thehindu.com/news/international/china-to-get-a-helping-of-soya/article23543256.ece>.
- Avieli, N. 2012. *Rice Talks: Food & Community in a Vietnamese Town*. Bloomington: Indiana University Press.
- Blaustein, L. 2014. "Hit us where it Hurts: China's Ban on U. S. Agricultural Products Grows." *China Law Blog*. <https://www.chinalawblog.com/2014/08/hit-us-where-it-hurts-chinas-ban-on-u-s-agricultural-products-grows.html>.
- Browne, A. L., J. Mylan, and Z. Di. 2017. "On the 'Meat Edge'? Meat Consumption and Reduction in Middle Class Urban China." *Discover Society*, December 6, 2017. <https://discoversociety.org/2017/12/06/on-the-meat-edge-meat-consumption-and-reduction-in-middle-class-urban-china/>.
- Chatham House. 2019. "resourcetrade.earth." <http://resourcetrade.earth/>.
- CNBC. 2018. "Inside China's Strategy in the Soybean Trade War." September 20, 2018. <https://www.cnn.com/2018/09/20/inside-chinas-strategy-in-the-soybean-trade-war.html>.
- Coutard, O., and E. Shove. 2019. "Infrastructures, Practices and the Dynamics of Demand." In *Infrastructures in Practice: The Dynamics of Demand in Networked Societies*, edited by E. Shove and F. Trentmann, 10–22. Oxon: Routledge.
- DeLessio-Parson, A. 2017. "Doing Vegetarianism to Destabilize the Meat-Masculinity Nexus in La Plata, Argentina." *Gender, Place & Culture* 24 (12): 1729–1748. doi: 10.1080/0966369X.2017.1395822.
- Delgado, C. L. 2003. "Rising Consumption of Meat and Milk in Developing Countries Has Created a New Food Revolution." *The Journal of Nutrition* 133 (11): 3907S–3910S.
- Delgado, C., M. Rosegrant, H. Steinfeld, S. Ehui, and C. Courbois. 1999. "Livestock to 2020: The Next Food Revolution." IFPRI Food, Agriculture, and the Environment Discussion Paper. Washington D.C.: IFPRI.
- de Oliveira, G. L. T. 2016. "The Geopolitics of Brazilian Soybeans." *The Journal of Peasant Studies* 43 (2): 348–372. doi:10.1080/03066150.2014.992337.
- de Oliveira, G. L. T., and M. Schneider. 2016. "The Politics of Flexing Soybeans: China, Brazil and Global Agroindustrial Restructuring." *The Journal of Peasant Studies* 43 (1): 167–194. doi:10.1080/03066150.2014.993625.
- Dillivan, K. 2015. "U.S. corn exports to China." *iGrow*. <http://igrow.org/agronomy/corn/u.s.-corn-exports-to-china/>.
- Do, L. M., T. K. Tran, B. Eriksson, M. Petzold, C. T. K. Nguyen, and H. Ascher. 2015. "Preschool Overweight and Obesity in Urban and Rural Vietnam: Differences in Prevalence and Associated Factors." *Global Health Action* 8: 28615–28615. doi:10.3402/gha.v8.28615.
- Drury, R. 2011. "Hungry for Success: Urban Consumer Demand for Wild Animal Products in Vietnam." *Conservation and Society* 9 (3): 247–257.
- The Economist. 2019. "How Chicken became the Rich World's most Popular Meat." January 19, 2019. <https://www.economist.com/international/2019/01/19/how-chicken-became-the-rich-worlds-most-popular-meat>.
- Ehlert, J., and N. K. Faltnann. 2019. "Food Anxiety: Ambivalences Around Body and Identity, Food Safety, and Security." In *Food Anxiety in Globalizing Vietnam*, edited by J. Ehlert and N. K. Faltnann, 1–40. Singapore: Palgrave Macmillan.
- Ely, A., S. Geall, and Y. Song. 2016. "Sustainable Maize Production and Consumption in China: Practices and Politics in Transition." *Journal of Cleaner Production* 134 (A): 259–268.
- Emel, J., and H. Neo, eds. 2015. *Political Ecologies of Meat*. London: Routledge.
- Fine, B. 2002. *The World of Consumption: the Material and Cultural Revisited*. London: Routledge.
- French, P., and M. Crabbe. 2010. *Fat China: How Expanding Waistlines are Changing a Nation*. London: Anthem Press.
- Garnett, T., and A. Wilkes. 2014. *Appetite for Change: Social, Economic and Environmental Transformations in China's Food System*. Oxford: Food Climate Research Network.
- Godfray, C. J. H., P. Aveyard, T. Garnett, J. W. Hall, T. J. Key, J. Lorimer, R. T. Pierrehumbert, P. Scarborough, M. Springmann, and S. A. Jebb. 2018. "Meat Consumption, Health and the Environment." *Science* 361: 1–8.
- Goodman, M. K., D. Maye, and L. Holloway. 2010. "Ethical Foodscapes? Premises, Promises, and Possibilities." *Environment and Planning A: Economy and Space* 42 (8): 1782–1196.
- Goscha, C. 2016. *The Penguin History of Modern Vietnam*. London: Penguin Books.
- GSO – General Statistics Office of Vietnam. 2017. "Production of Main Annual Crops." http://www.gso.gov.vn/default_en.aspx?tabid=778.
- Hansen, A. 2017. "Vietnam's New Food Crisis." IAPS Dialogue, December 15, 2017. <http://theasiadialogue.com/2017/12/15/vietnams-new-food-crisis/>.
- Hansen, A. 2018. "Meat Consumption and Capitalist Development: The Meatification of Food Provision and Practice in Vietnam." *Geoforum: Journal of Physical, Human, and Regional Geosciences* 93: 57–68. Doi: <https://doi.org/10.1016/j.geoforum.2018.05.008>.

- Hansen, A., J. I. Bekkevold, and K. Nordhaug. **Forthcoming**. "Making Sense of the Socialist Market Economy." In *The Socialist Market Economy in Asia: Development in China, Vietnam and Laos*, edited by A. Hansen, J. I. Bekkevold, and K. Nordhaug. Singapore: Palgrave MacMillan.
- Hansen, A. **Forthcoming**. "Consumer Socialism: Consumption, Development and the New Middle Classes in China and Vietnam." In *The Socialist Market Economy in Asia: Development in China, Vietnam and Laos*, edited by A. Hansen, J. I. Bekkevold, and K. Nordhaug. Singapore: Palgrave MacMillan.
- Heinrich Böll Foundation. 2014. "The Meat Atlas". www.boell.de/meat-atlas.
- Hoelle, J. 2017. "Jungle Beef: Consumption, Production and Destruction, and the Development Process in the Brazilian Amazon." *Journal of Political Ecology* 24 (1): 743–762. <https://doi.org/10.1016/j.landusepol.2016.10.035>.
- Index Mundi. n.d. "China Corn Imports by Year." <https://www.indexmundi.com/agriculture/?country=cn&commodity=corn&graph=imports>.
- Jakobsen, J. 2020. "The Maize Frontier in Rural South India: Exploring the Everyday Dynamics of the Contemporary Food Regime." *Journal of Agrarian Change* 20: 137–162. doi:10.1111/joac.12337.
- Jakobsen, J., and A. Hansen. 2020. "Geographies of Meatification: An Emerging Asian Meat Complex." *Globalizations* 17 (1): 93–109. doi:10.1080/14747731.2019.1614723.
- Johnston, J., A. Biro, and N. MacKendrick. 2009. "Lost in the Supermarket: The Corporate-Organic Foodscape and the Struggle for Food Democracy." *Antipode* 41 (3): 509–532.
- Kearney, J. 2010. "Food Consumption Trends and Drivers." *Philosophical Transactions of the Royal Society B: Biological Sciences* 365 (1554): 2793–2807.
- Kumar, P. 2015. "Southeast Asia: Feeding the Investments." <https://research.rabobank.com/far/en/sectors/grains-oilseeds/southeast-asia-feeding-the-investments.html>.
- Lange, H. 2016. "Same, Same – but Different: On Increasing Meat Consumption in the Global South." In *Food Consumption in the City: Practices and Patterns in Urban Asia and the Pacific*, edited by M. Sahakian, C. Saloma, and S. Erkman, 23–46. London: Routledge.
- Lockett, H. 2015. "China's Grain Self-Sufficiency Policy Lives on after its Official Demise." *China Economic Review*. <https://chinaeconomicreview.com/cereal-dysfunction/>.
- MacLachlan, I. 2015. "Evolution of a Revolution: Meat Consumption and Livestock Production in the Developing World." In *Political Ecologies of Meat*, edited by J. Emel and H. Neo, 21–41. London: Routledge.
- Malesky, E., and J. London. 2014. "The Political Economy of Development in China and Vietnam." *Annual Review of Political Science* 17: 395–419.
- Marzin, J., and A. Michaud. 2016. "Evolution of Rural Development Strategies and Policies: Lessons from Vietnam." In ART-Dev Working papers, edited by ART-Dev. Montpellier.
- McMichael, P. 2013. *Food Regimes and Agrarian Questions*. Rugby, UK: PracticalAid Publishing.
- Miewald, C., D. Aiello, and E. McCann. 2017. "Urban Foodscapes: Repositioning Food in Urban Studies Through the Case of Vancouver's Downtown Eastside." In *The SAGE Handbook of New Urban Studies*, edited by J. A. Hannigan and R. Greg, 430–444. London: Sage.
- Miewald, C., and E. McCann. 2014. "Foodscapes and the Geographies of Poverty: Sustenance, Strategy, and Politics in an Urban Neighborhood." *Antipode* 46: 537–556. doi:10.1111/anti.12057.
- Miller, D. 1995. "Consumption as the Vanguard of History: A Polemic by Way of an Introduction." In *Acknowledging Consumption: A Review of new Studies*, edited by D. Miller, 1–57. London: Routledge.
- Milman, O., and S. Leavensworth. 2016. "China's Plan to Cut Meat Consumption by 50% Cheered by Climate Campaigners." *The Guardian*, June 20, 2016. <https://www.theguardian.com/world/2016/jun/20/chinas-meat-consumption-climate-change>.
- Mintz, S. W., and C. M. Du Bois. 2002. "The Anthropology of Food and Eating." *Annual Review of Anthropology* 31 (1): 99–119.
- Neo, H., and J. Emel. 2017. *Geographies of Meat: Politics, Economy and Culture*. London: Routledge.
- Noske, B. 1989. *Humans and Other Animals: Beyond the Boundaries of Anthropology*. London: Pluto Press.
- OECD/FAO. 2016. *OECD-FAO Agricultural Outlook 2016–2025*. Paris: OECD Publishing.
- Otero, G. 2018. *The Neoliberal Diet: Healthy Profits, Unhealthy People*. Austin: University of Texas Press.
- Oxford, E. 2017. *Bitter and Sweet: Food, Meaning, and Modernity in Rural China*. Oakland: University of California Press.
- Pendrill, F., U. M. Persson, J. Godar, T. Kastner, D. Moran, S. Schmidt, and R. Wood. 2019. "Agricultural and Forestry Trade Drives Large Share of Tropical Deforestation Emissions." *Global Environmental Change* 56 (2019): 1–10.
- Peters, E. J. 2012. *Appetites and Aspirations in Vietnam: Food and Drink in the Long Nineteenth Century*. Lanham: Altamira Press.
- Pi, C., Z. Rou, and S. Horowitz. 2014. "Fair or Fowl? Industrialization of Poultry Production in China." In *Global Meat Complex: The China Series*, edited by S. Sharma and B. Lilliston, 1–40. Washington, DC: Institute for Agriculture and Trade Policy.
- Popkin, B. M. 1993. "Nutritional Patterns and Transitions." *Population & Development Review* 19 (1): 138–157.
- Popkin, B. M., L. S. Adair, and S. W. Ng. 2012. "Global Nutrition Transition and the Pandemic of Obesity in Developing Countries." *Nutrition Reviews* 70 (1): 3–21.

- Reckwitz, A. 2002. "Toward a Theory of Social Practices." *European Journal of Social Theory* 5 (2): 243–263.
- Rinkinen, J., E. Shove, and M. Smits. 2019. "Cold Chains in Hanoi and Bangkok: Changing Systems of Provision and Practice." *Journal of Consumer Culture* 19 (3): 379–397. doi:10.1177/1469540517717783.
- Ritchie, H. 2019. "Which Countries Eat the most Meat?" *BBC News*, February 4, 2019. <https://www.bbc.com/news/health-47057341>.
- Sahakian, M., C. Saloma, and S. Erkman. 2016. *Food Consumption in the City: Practices and Patterns in Urban Asia and the Pacific*. London: Routledge.
- Sahakian, M., and H. Wilhite. 2014. "Making Practice Theory More Practicable: Towards More Sustainable Forms of Consumption." *Journal of Consumer Culture* 14 (1): 25–44.
- Sans, P., and P. Combris. 2015. "World Meat Consumption Patterns: An Overview of the Last Fifty Years (1961–2011)." *Meat Science* 109 (Supplement C): 106–111.
- Schneider, M. 2013. "Modern Meat, Industrial Swine: China and the Remaking of Agri-Food Politics in the 21st Century." PhD thesis, Cornell University.
- Schneider, M. 2014. "Developing the Meat Grab." *Journal of Peasant Studies* 41 (4): 613–633.
- Schneider, M. 2017a. "Wasting the Rural: Meat, Manure, and the Politics of Agro-Industrialization in Contemporary China." *Geoforum: Journal of Physical, Human, and Regional Geosciences* 78: 89–97.
- Schneider, M. 2017b. "Dragon Head Enterprises and the State of Agribusiness in China." *Journal of Agrarian Change* 17: 3–21.
- Schneider, M. 2018. "Reforming the Humble pig: Pigs, Pork and Contemporary China." In *Animals Through Chinese History: Earliest Times to 1911*, edited by R. Sterckx, M. Siebert, and D. Schäfer, 233–244. Cambridge: Cambridge University Press.
- Shove, E., M. Pantzar, and M. Watson. 2012. *The Dynamics of Social Practice: Everyday Life and how it Changes*. Los Angeles: Sage.
- Shove, E., and F. Trentmann, eds. 2019. *Infrastructures in Practice: The Dynamics of Demand in Networked Societies*. Oxon: Routledge.
- Shove, E., F. Trentmann, and M. Watson. 2019. "Introduction." In *Infrastructures in Practice: The Dynamics of Demand in Networked Societies*, edited by E. Shove and F. Trentmann, 3–9. Oxon: Routledge.
- Shove, E., M. Watson, and F. Trentmann. 2019. "Infrastructures in Practice: Implications for the Future." In *Infrastructures in Practice: The Dynamics of Demand in Networked Societies*, edited by E. Shove and F. Trentmann, 210–216. Oxon: Routledge.
- Springer, S. Forthcoming. "Total Liberation Ecology: Integral Anarchism, Anthroparc, and the Violence of Indifference." In *Anarchist Political Ecology: Volume 1 - Undoing Human Supremacy*, edited by S. Springer, M. Locret-Collet, J. Mateer, and M. Acker. Oakland, CA: PM Press.
- Steinfeld, H., P. Gerber, T. Wassenaar, V. Castel, M. Rosales, and C. de Haan. 2006. *Livestock's Long Shadow: Environmental Issues and Options*. Rome: FAO.
- Vietnam News. 2018. "VN aims to Expand Meat Exports." Accessed January 10, 2019. <https://vietnamnews.vn/economy/422654/vn-aims-to-expand-meat-exports.html#JaIOhWyYHO8DIEj0.97>.
- Vietnam News. 2019. Cheap Imported Meats Hurt Domestic Livestock Industry. Accessed August 30, 2019. <https://vietnamnews.vn/economy/524518/cheap-imported-meats-hurt-domestic-livestock-industry.html#gbcvbGU6IIJyT9Tk.97>.
- Wadiwel, D. 2015. *The War Against Animals*. Leiden: Brill.
- Warde, A. 2005. "Consumption and Theories of Practice." *Journal of Consumer Culture* 5 (2): 131–153.
- Warde, A. 2016. *The Practice of Eating*. Cambridge: Polity Press.
- Watson, J. L. 2006. *Golden Arches East: McDonald's in East Asia*. Stanford: Stanford University Press.
- Watson, J. L. 2014. "Meat: A Cultural Biography in (South) China." In *Food Consumption in Global Perspective: Essays in the Anthropology of Food in Honour of Jack Goody*, edited by K. Jakobsen and A. Murcott, 25–44. New York: Palgrave MacMillan.
- Weis, T. 2007. *The Global Food Economy: The Battle for the Future of Farming*. London, New York, Halifax and Winnipeg: Zed Books & Fernwood Publishing.
- Weis, T. 2010. "The Accelerating Biophysical Contradictions of Industrial Capitalist Agriculture." *Journal of Agrarian Change* 10: 315–341. doi:10.1111/j.1471-0366.2010.00273.x.
- Weis, T. 2013. *The Ecological Hoofprint: The Global Burden of Industrial Livestock*. New York & London: Zed Books.
- Weis, T. 2017. "Towards 120 Billion: Dietary Change and Animal Lives." *Radical Philosophy* 199: 8–13.
- Wertheim-Heck, S. C. O., S. Vellema, and G. Spaargaren. 2015. "Food Safety and Urban Food Markets in Vietnam: The Need for Flexible and Customized Retail Modernization Policies." *Food Policy* 54: 95–106.
- White, R. J. 2015. "Following in the Footsteps of Élisée Reclus: Disturbing Places of Inter-Species Violence That are Hidden in Plain Sight." In *Anarchism and Animal Liberation: Critical Animal Studies, Intersectionality and Total Liberation*, edited by A. Nocella, R. J. White, and E. Cudworth, 212–231. Jefferson: McFarland Press.
- White, R. J. 2017. "Rising to the Challenge of Capitalism and the Commodification of Animals: Postcapitalism, Anarchist Economies and Vegan Praxis." In *Animal Oppression and Capitalism*, edited by D. Nibert. Connecticut: Praeger.

- Wilk, R. 2018. "Global Junk: Who is to Blame for the Obesity Epidemic?" *RAE-Revista de Administração de Empresas* 58 (3): 332–336.
- World Resources Institute. 2016. "Shifting Diets for a Sustainable Future". Working Paper.
- Wu, Q., and W. Zhang. 2016. "Of maize and Markets: China's New Corn Policy." *CARD Agricultural Policy Review*. https://www.card.iastate.edu/ag_policy_review/article/?a=59.
- Yen, V. H. 2017. "Overview of Vietnam's Food Security Policies." In *Vietnam Food Security Policy Review*, edited by E. Petersen, 44–66. ACIAR Monography no. 196. Canberra: Australian Centre for International Agricultural Research.
- Yu, L. 2014. *Consumption in China*. Cambridge: Polity Press.
- Zhang, H. 2019. "When Food Crosses Borders: Paradigm Shifts in China's Food Sectors and Implications for Vietnam." In *Food Anxiety in Globalizing Vietnam*, edited by J. Ehlert and N. K. Faltmann, 267–301. Singapore: Palgrave Macmillan.