

# **Globalization of unsustainable food-consumption: Trade policies, producer lobbies and beef consumption in North East Asia**

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## **ABSTRACT:**

Two perspectives on the global diffusion of Western consumption patterns are often promoted. According to the first “economistic” perspective, such diffusion is a natural outcome of “taste convergence” following the eradication of trade barriers and economic growth supported by the diffusion of Western culture and lifestyles. According to a contrasting “political economy” perspective, westernization of consumption patterns may be the outcome of intra-state competition over export markets and intra- and inter-state lobbying by producer interests together imposing consumption changes in a more coercive way on non-Western societies. In the following, we study the dynamics behind the recent trend towards increasing beef consumption in North East Asia (Japan, Korea) more closely in the light of these hypotheses. This focus is based on the fact that beef is one of the most environmentally troublesome commodities as it is energy, land, water and pollution intensive. Historically, low consumption levels of beef in North East Asia were the outcome of successful ecological adaptations between man and land. Grain-dominated diets have permitted high population densities and less energy consumption, as calorie yields from areas planted with cereals are high. Meat consumption has generally been modest and largely supplied by less energy consuming poultry and pork. However, during the 1990s, there has been a shift towards consumption of more beef. While increasing income in North East Asia

has been important, aggressive trade policy pressure by well-organized beef producer interests has also been a substantial factor. In the 1980s and 1990s, US pressure based on a strong domestic “beef lobby” was the predominant explanation of the opening of North East Asian consumer markets for beef imports. However, the rise of the WTO as a vehicle for global market opening has also increased the leverage of other producer countries, most importantly Australia and Brazil, with its strong and well-organized producer groups. Thus, when analyzing increasing beef consumption in North East Asia, the political economy perspective gives a substantial contribution to understanding the “westernization” of consumption patterns. As this consumption shift is destructive both for local producer environments and global energy consumption for food, it provides support for the argument that current global trade efforts often favor strong producer interests at the expense of wider concerns for environmental sustainability.

## **1. Introduction**

In their pamphlet on sustainable consumption, the OECD (1997) notes that there is a disturbing global convergence towards environmentally destructive consumption patterns similar to what is found among Western middle classes. Food, transportation and housing consumption seems to become increasingly similar to patterns found in North America and Western Europe. In the longer term, the organization fears the global environmental consequences of this convergence, as Western consumption patterns are resource- and in many ways pollution-intensive.

There is indeed agreement between many observers that this trend towards convergence may be worrisome both because it may cause environmental and resource scarcity problems. However, scholars differ when they try to explain this trend.

On the one hand, we find the perspective drawn from traditional economics. Here, the entry of increasingly affluent consumers into an increasingly liberalized global market of consumer goods inevitably leads to this kind of convergence. The key actor in this market is the sovereign consumer, whose aggregated consumption propensities may be described in terms of regional or national price- and income elasticities. Free trade guaranteed that consumer preferences will be satisfied at the lowest possible cost. Conversely, producer groups are seen as mainly adapting themselves to the change of tastes as preferences (for a strong statement, cf. Ebeling & Hornberger, 1995)

On the other hand, there is a political economy perspective trying to analyze market liberalization efforts and consumer preferences as entirely or partially guided by various coalitions of producer and national interests (for consumption, cf. i. e. Klein 2001, for the wider perspective, cf. i. e. Strange 1994, 1997). When addressing trade issues, this perspective focuses on the unequal nature of market opening efforts, asymmetrically benefiting powerful nations and well-organized producer groups. When analyzing consumer choices, they tend to emphasize the

interlinkages between power distributions and individual choice.

Thus, according to the first perspective, the income and preferences of the consumers are seen as the dominating force in a system in which functioning world markets in the context of trade liberalization is taken more or less for granted. According to the second perspective, producer interests and national interests have a more important role. In terms of the first perspective, convergence of consumer patterns is seen as a natural or spontaneous process based on human nature and transparent market processes, while such convergence is seen as a more strongly coercive and power-infested process in terms of the second perspective. Thus, the two perspectives represent broader approaches to current processes of economic globalization and convergence, by some seen as “natural” or “spontaneous” and by some as “coerced” (Hay, 2000).

In the following, we are going to evaluate these hypotheses by looking at the development of the patterns of consumption of a specific product, beef, in a specific world region, namely the advanced industrial states of North East Asia (Japan, Korea). The focus on beef is merited as beef production has strong and diverse environmental effects. In addition, increasing consumption of beef worldwide is seen by many scholars as a contribution to more general food scarcity, undermining the food security of the poor. Moreover, beef consumption patterns have historically been quite diverse, with East Asia generally being a region of exceptionally modest consumption. However, recent changes seem to indicate increasing beef consumption or convergence with “Western” styles of food consumption also here. In the light of my initial approaches, I will try to examine the dynamics behind this trend.

The paper falls into five parts. Following this introduction, I briefly summarize some of the environmental impact and food economy arguments that favor a closer look at beef consumption as a possible problem. In section three, I present some attempts to describe and explain the historical roots of the still huge variations in beef consumption globally. I also describe recent

changes in consumption patterns with a focus on East Asia. In section four, I discuss the role of recent developments in "international trade politics" as an explanation of the consumption changes in East Asia. The conclusion contains a summary of my findings and a wider discussion of the implications of these findings for how environmental problems raised by unsustainable beef consumption could be perceived and addressed politically.

## **2. Beef consumption and its problems: Energy, food, water, manure and methane**

Beef production has been the focus of much scholarly work on sustainable consumption.

If we turn to Alan Durning, one of the most influential authors in the literature on environmentally sustainable consumption, patterns of transportation and the composition of diets are crucial indicators of sustainability (Durning, 1991, 1992). These two groups of consumer goods are important because they strongly influence the energy content of consumption, thereby also influencing pollution problems related to fossil fuel consumption (acid rain, climate change, various local air pollution problems). Lorek and Spangenberg (2001) identify three consumption clusters with special environmental importance: housing, food, and transport. Due to their high "implicit" energy consumption and land use requirements, beef, large houses, and private motor vehicle consumption are main indicators of unsustainability.

Beef production contributes to a broad range of environmental problems (Durning, 1991, 1992). When it comes to converting plant energy from forage and stockfeed to energy available for humans through the consumption of their meat, the cow is a notoriously ineffective animal. Energy conversion ratios for beef cattle are estimated to be as low as 1:7. In comparison, hogs and poultry have energy conversion ratios estimated as 1:4 and 1:2.8 (Brown, 1997, p. 10). Of course, these energy conversion ratios are not an immediate problem in situations of abundant grazing land and low population densities. As discussed in section three, labor productivity

measured as calories and grams of proteins per working hour in such settings is high.

However, in modern ranching, beef production requires fossil fuels both for on-ranch use and as inputs to the production of crops for stockfeed. Consumption of crops for stockfeed is of particular importance for beef prices and ranching profits, as consumers in many Western countries tend to prefer “marbled” beef with higher fat content than grassfed cattle (Rifkin, 1992, pp. 96–99). To produce this beef quality, cattle must be fed with grain. In the US feedlot system, which is a typical beef production system in large parts of the world, 58 percent of the nutritious needs of cattle are covered by grain (Pimentel & Pimentel, 1996, p. 80). This grain could have provided about seven times more calories or nearly five times more protein if given directly to humans (Rifkin, 1992, p. 160). As very high proportions of grain production are consumed by cattle in the major cereals producing countries in the world, this also has important effects on food security for the poor. Brown (1997) claims that high beef consumption may lead to future global grain shortages and decreased food security for poor people having to pay more for their basic grain-based diets.

From an environmental point of view, it is important that the vast amounts of grain necessary to produce beef require much energy, land and water. Rifkin (1992, p. 225) estimates that one pound of beef produced in the US requires energy corresponding to one gallon of gasoline, and he claims that carbon emissions from the fuel necessary to produce enough beef for a US family of four corresponds to the emissions from using an average car during six months of normal operation. According to an article in New York Times, David Pimentel at Cornell University estimates that a 1250 pound steer in the feedlot system would have consumed the amount of roughly 284 gallons of oil before it is slaughtered.<sup>1</sup> Pimentel & Pimentel (1997) conclude that traditional meat based US diets, in which beef is a major ingredient, uses almost

twice as much fossil fuels as vegetarian. Lactoovovegetarian (containing milk and eggs as protein sources) diets are somewhere in between. While open to contestation due to the large uncertainties involved in such calculations, this argument is important because energy consumption is the chief contributor to environmental problems (climate change, acid rain) that are difficult to address through traditional pollution control measures.

Cattle ranching also contributes to climate change because digestive fermentation and cattle manure emits methane and nitrous oxide. Estimates are certainly uncertain, and certain factors linked to cattle breeding produce differences. For example, depositing manure in lagoons which is the usual way in the feedlot system, produces 18 times as much methane as methane emitted from the manure of rangeland animals. High emissions of nitrous oxides also stem from such lagoons (De Wit et al. 1996). However, most of the emissions come from enteric fermentation. In the US in 2003, about 19 percent of methane emissions came from enteric fermentation in livestock. Cattle make up about 95 percent of these emissions due to the cow's special digestive system. In example, emissions from enteric fermentation by cattle made up about the equivalent of about 1.75 percent of total CO<sub>2</sub> emissions in the US in 2003 (calculated on the basis of EIA 2004).

These problems are of the “structural” kind, linking modes of social organization directly to regional and global environmental problems as described in Weale (1992). As many economists today conclude that the price of fossil fuels is substantially lower than the environmental externalities created by their consumption, it can be argued that high levels of beef consumption is a dietary choice subsidized by "free" environmental inputs.

In addition, beef production demands lots of fresh water. Molden & de Fraiture (2004) conclude that while growing 1 kg of wheat needs 1390 liters of water (in the US, only half that value in France), producing 1 kg of beef demands 10,060 litres or more than seven times as

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<sup>1</sup> “Power Steer”, New York Times, March 31, 2002.

much. Pigs only demand about a third of this for producing the same quantities of pork (Molden & de Fraiture, 2004). Thus, according to these writers, future increases of beef production may confront water shortages and/or competition over water resources in many locations. Other estimates of water consumption, like Pimentel & Pimentel (2003), are much higher for beef, possibly because of higher implicit water consumption when feeding livestock with grain in the feedlot system. According to Postel (1999), the diet of an average North American, which contains large amounts of beef, consumes more than twice the amount of water as the diet of an average Asian, who consumes much less beef and other meat. Thirsty cows contribute significantly to the water shortages occurring in important ranching regions of the world, like Australia or the American West (Rifkin, 1992, pp. 218-222, Reisner, 1993).

Moreover, as for poultry and pork production, cattle ranching is linked to water pollution. While traditionally being a precious resource when applied as fertilizer due to its content of nitrogen and phosphates, manure produced by large herds of livestock may threaten surface and ground water. Besides being nutrients for algae consuming water oxygen and threatening fish stocks and altering water vegetation, manure contains parasites and bacteria dangerous for human health. Rifkin (1992, pp. 218–222) describes both water shortages and pollution of groundwater from ranching in large parts of the Western United States. The 1996 National Water Quality in the US concluded that agriculture in general was the leading cause of water pollution in the country, and that livestock (most of it cattle) on feedlots made up as much as 20 percent of water pollution, including pollution of groundwater resources (US EPA 1997). In 1993, Cargill, a transnational Kansas-based meatpacking corporation, was put on the "Toxic Ten" list of US polluters by the Magazine "Mother Jones" for massive water pollution from its livestock operations. Stull & Broadway (2004, pp. 133-145) note widespread local protests against water pollution from US meat production, mostly intensive livestock operations that include feedlots

for cattle. Miller et al. (2004) note the high concentrations of E.Coli in catch basins for feedlots in Alberta, the Canadian state with most cattle.

Another element is soil erosion caused by ranching. Grazing cattle has directly created big problems related to soil erosion in important beef producing nations like the US and Australia. In Australia's vast semi-arid areas, the Department of the Environment and Heritage (2001) note the unabated pressure of cattle on soils leading to increasing erosion. Pimentel & Pimentel (2003, p., 662s) also note that in the US, about 60 percent of pastureland is being overgrazed and is subject to accelerated erosion.

When looking more specifically at the environment in developing countries, ranching expansion has been a very important driving force behind rainforest destruction in Latin America. Deforestation from export-oriented ranching in Central America is a well known phenomenon (Kaimowitz et al., 2004). Brazil is perhaps an even more famous case. Government subsidized pasture expansion has been a major factor in the increase of deforestation in Brazilian Amazonia since the middle of the 1960s. After the first burst of government subsidies for corporate ranchers petering out in the late 1980s, expansion of small- and medium sized herds led to the bulk of deforestation until recently (Schneider, 1995). However, in the 1990s, the eradication of hoof-and-mouth disease in larger parts of the Amazon established the safety of Amazonian beef on international markets. Then, large companies started exporting Amazonian beef to foreign markets. The outcome has been increasing deforestation rates and a convergence of the Brazilian pattern of deforestation and the Central-American pattern also called "the Hamburger connection" (Kaimowitz et al., 2004).

Moreover, for developing countries, it is worrisome that beef production is labour-extensive and land extensive. Ranching in large units produces few jobs for poor rural populations in contrast to smallholder agriculture. This pattern is typical for Latin America,

where ranching, rural unemployment and expanding urban slums are parts of a vicious circle of suboptimal land resource and labor use. This contributes to the Latin American paradox of abundant fertile land, modest population densities but still large marginalized rural and urban populations (De Janvry, 1981).

In a discussion of beef and the environment, a short discussion of the health effects of red meat consumption is also pertinent. Substantial levels of red meat (sheep, cattle, pigs) consumption is associated with significantly elevated risks of various gastrointestinal cancers as well as cardiovascular disease, a factor which has contributed to decrease beef consumption in many Western Countries (Stull & Broadway, 2004, p. 19).

While it is easy to see that beef production has important environmental consequences and that consumption of high levels of beef poses health risks, it is still difficult to specify any specific “sustainable” level of consumption based on environmental arguments alone. For a major environmental problem such as climate change, it is essentially a political task to weigh concerns for environmental risks against economic concerns. Moreover, similar environmental targets may be achieved by various compositions of the average consumer basket: If you eat a lot of beef, you could compensate for the high energy content of your diet by reducing your automobile use. Bairoch (1975, pp. 23–49) points out that certain minimum levels of livestock production are necessary for food security. If grain harvests fail, livestock provides a valuable food reserve that may prevent hunger. Moreover, from a public health point of view, it can be argued that certain levels of meat consumption are advisable because of meat’s protein content. Especially children have problems with getting enough proteins from vegetarian diets. However, in most industrialized countries, these levels are grossly exceeded. In addition, there is no reason why meat supplies must be secured by keeping large herds of cattle. Poultry and pork, which need far less fodder to fatten, can provide important parts of this meat reserve. To summarize, high

consumption of beef is particularly harmful from an environmental point of view due to the strong linkages between these consumer goods and overall energy consumption as well as local problems like land degradation, water pollution and overconsumption water resources. Given these facts, it is interesting to look more closely at the global distribution of beef consumption. In the next section, I will take a more detailed look at regional differences between some world regions in terms of the consumption of beef.

### **3. Regional variations in beef consumption: East Asia vs. the "New Europes"**

Wade (1990) and Fajnzylber (1990, pp. 47-51) present a description of differences in consumption patterns between world regions. They find two main regional consumption patterns among rapidly industrializing economies. The first is the Latin American pattern, which is an imitation of us consumption patterns. The second is the East Asian (with particular reference to South Korea) which imitates Japan. One core element of this contrast is beef consumption; like North Americans, Latin Americans eat comparatively high volumes of beef. In contrast, East Asians eat much less beef and more cereals. For Wade (1990) and Fajnzylber (1990) these differences in beef consumption are important due to the already mentioned energy intensity of modern cattle breeding and fattening operations. Energy is often a scarce resource for developing countries, and squandering valuable energy resources on luxury items like beef may hamper the development process. Other implications may be that beef-rich diets may undermine more broad-based agricultural exports by consuming excessive land and grain resources, and that the feeding of cattle with grain may increase the costs of basic diets for the working classes. It is implicit in this logic that chicken and pigs, in addition to being more effective converters of energy from fodder, also eat household litter and other stuff

If we take a look at empirical data, the aforementioned difference in beef consumption between North East Asia and the Americas is striking, and particularly so during the 1970s and 1980 as demonstrated by table 1 below. The US, Brazil, Mexico and Argentina consumed several times as much beef/capita as Korea, Taiwan and Japan.

**TABLE 1: Beef consumption kg/capita in various countries: North East Asia, Australia and the Americas**

	<b>1975</b>	<b>1985</b>	<b>1995</b>	<b>2002</b>
<b>US</b>	54.7	48.4	42.9	43.2
<b>Canada</b>	49.7	39.5	33.3	32.8
<b>Australia</b>	71.0	48.3	41.0	34.2
<b>Brazil</b>	19.3	22.3	34.6	36.6
<b>Argentina</b>	83.4	82.1	56.1	62.3
<b>South Korea</b>	2.4	4.1	9.3	13.1
<b>Japan</b>	3.5	6.1	11.2	8.6
<b>Taiwan</b>	n.a.	3.2	3.2	3.2

**Source:** FAO Statistical information website: [www.faostat.com](http://www.faostat.com)

These differences may be explained by looking at the biological, demographical and agricultural evolution of these two world regions.

The basic contrast between these regions may be explained by the writings of Boserup (1979) and Crosby (1986). In his book *Ecological Imperialism*, Crosby explains how the biological superiority of European flora, fauna and microbes contributed to the rapid depopulation of the Americas, Australia and New Zealand. While diseases like smallpox, measles and even chickenpox decimated native populations, European plant species and domesticated animals rapidly substituted important parts of the local flora and fauna. The outcome was the

establishment of biologically defined "New Europes" in the temperate areas the Americas and Oceania. While both pigs and cattle succeeded in adapting to the new natural environment, cattle was the champion in the open landscapes of the Australian interior, the American prairie and the Argentinean Pampas. Outside the tropical areas, which posed special health problems for cattle, semi-domesticated and wild herds of cattle expanded rapidly in the empty interiors of Australia, Argentina, North Mexico, the United States and Canada, providing settlers with easily accessible and seemingly limitless sources of protein. Moreover, ranching was ideally suited to the main problem of the "New Europes", namely labor shortages. Moreover, as transportation problems hampered much agricultural activity in the American interior until the railway boom of the late 19th century, cattle were the only kind of livestock that could transport itself over large distances. Schneider (1995) notes the suitability of independent and hardy cattle in situations of land surplus and lack of labour, and Boserup (1979, pp. 62-63) notes the effects of low population densities as an explanation of extensive (or less technologically advanced) agricultural techniques in Latin America.

In the post-war-period, most developed parts of the "New Europes" (predominantly the US, Canada, Australia and New Zealand) along with most European countries as well as "ranching enclaves" in the third world (Botswana, Zimbabwe, Brazil, Argentina, Mexico) started to apply more intensive beef production systems. In train with the intensification of cereals production through mechanization and increasing use of fertilizers, intensive fattening operations of cattle through the "feedlot system" in which the animals are given a diet rich in corn or other cereals a several months before they are slaughtered have largely substituted traditional grazing systems. Due to the quantities of energy needed to produce these cereals as well as the energy losses which are inherent to fattening of cattle for beef, this system is responsible for the high consumption of energy by modern cattle operations.

East Asia makes up a profound contrast to the "New Europes". Boserup (1965) describes how population expansion in these areas led to intensification of the rice economy through successful adaptation of terrace cultivation and rotation techniques. Here, technological improvements reflected labour surplus and land shortages. Moreover, in these economies, livestock has been integrated into households and the rice economy. In East Asia, surplus rice straw and other agricultural waste inedible for humans has been a main source of forage for cattle almost exclusively used on small farms as draft animals and to some extent for dairy purposes. Cattle used as draft animals have been very important for preserving rice terraces and the general hydrological balance in these agricultural settings (Förster, 1994); in other words-the use of cattle as draft animals have been important elements in the intensification of a generally labor intensive and energy extensive rice economy. Poultry and pork have been more important sources of animal protein given that pigs and chicken survive well on household garbage and are more energy-effective converters of plant to animal protein. Cattle varieties reflect their adaptation to the rice economy. *Hanwoo* cattle in Korea as well as *Wagyu* cattle in Japan are cattle breeds developed as draft animals by rice-cultivating smallholders. In Korea, the relationship between the farmers and their draft cattle has been so strong that these animals have been perceived as "parts of the family" in small rural households (Förster, 1994).

However, also these systems changed towards more intensified fattening operations during the 1960s. To boost its domestic cattle production, Korea has given considerable price support to fodder for its domestic *Hanwoo* beef (Förster, 1994). This support system is based in the Korean policy to boost domestic beef production by establishing the National Livestock Co-operative Federation (NLCF) in 1981, an organization providing assistance to domestic livestock producers (Förster, 1994). Japan introduced similar programs assisting domestic livestock producers in the 1960s. Domestic beef producers enjoy special low tariffs for imported feed grains (Argy & Stein,

1997, p. 263). These subsidies have had the double negative environmental effect of increasing beef production and of substituting traditional, manually cut grass and rice straw with imported maize and sorghum as cattle fodder (Förster, 1994). However, it is interesting to see that there are many experiments going on, both within the advanced and the less advanced East Asian economies, to retain and even develop elements of the traditionally quite sustainable system of cattle production. Thus, there is no full or total convergence with Western beef production systems, but rather a mix of traditional and more conventional modern Western-style systems

Thus, in East Asia, we find the classical "Boserupian" cases - an agricultural economy in which high population densities provoked labour-intensive agricultural techniques that save energy and land and provides livelihoods for higher population densities (Boserup, 1979, pp. 59-64).

If we look at some individual cases, these general observations are illustrated. Argentina is the leading beef consumer globally. Cattle thrived particularly well on the Pampas plain in the 16th century and provided early settlers with on the agricultural frontier with an important source of food. With time, cattle increasingly made up the backbone of the Argentinean rural economy. In the early 20th century, the Argentinean rural oligarchy specialized in improving breeding and fattening methods for cattle and neglected improvements in cereal production (Scobie, 1964). Domestic beef consumption has decreased since 1975 due to sluggish economic growth and declining domestic purchasing power.

Brazil has historically been an agricultural frontier economy for longer periods than Argentina. From the first years of colonization, new regions have successively been cleared for agricultural purposes, most recently the Center-West and and the Amazonian region. Ranching has been a prominent activity in the agricultural areas delivering food to the workers participating in the various export booms throughout Brazilian history (Albert, 1983, p. 42, Dickenson, 1982).

From an environmental point of view, ranching expansion in the Amazon region has been particularly destructive, causing the bulk of deforestation in this region since the 1960s. As a consequence of these historical trends, beef makes up a very important part of Brazilian diets, and Brazil has recently become a top beef exporter (cf. table 2).

In Mexico, beef and veal consumption/capita was quite similar to Brazilian consumption levels in 1985, but lagged behind during the 1990s. Mexican agricultural history parallels Brazil's history, being marked by large-scale cattle ranching as a centerpiece of frontier development. In addition, sheep raising has been important (Simonian, 1995).

In the US, which like the aforementioned economies is a frontier economy strongly focused on cattle, beef consumption has declined markedly, as indicated by table 1. An aging population and worries over documented negative health effects connected to high consumption of beef and other red meat has decreased beef consumption by 20 percent since 1975. That notwithstanding, the US remains at a very high level of beef consumption.

To summarize then, we have explored the dynamics behind beef consumption differences in two main world regions: East Asia and Crosby's "New Europes". We could also have explored differences within Europe and neighboring areas. Here, the same sources that we draw our information from would conclude that beef consumption is somewhere between these two extremes. However, the focus on East Asia and the Americas is merited by the instructive contrasts between the history of these regions and its impact on huge variations in our chosen indicator of consumption sustainability. The convergence between these marked contrasts in consumption patterns is linked to more recent developments in the specific development of trade relations between these regions. These dynamics will be explored below.

#### **4. Beef: Declining consumption among industrialized producers, increasing competition over Asian markets**

Table 1 demonstrates a substantial decline in US, Canadian and Australian beef consumption since the 1970s. This decline can largely be explained by increasing attention to already mentioned health risks, triggering consumer preferences to move towards poultry. While this trend seems to have leveled off somewhat over the last years both due to strong economic growth in Australia, the US and Canada as well as the increasing popularity of the “Atkins” high-protein diet recently, it is probably true that health worries have contributed to curb beef consumption also in these countries.

Although beef consumption in these countries is still very high, and a change towards poultry also would involve specific environmental problems, it is still so that a reduction in beef output could have reduced many of the environmental problems caused by beef production in many producing countries.

However, the choice has been to instead expand exports. The US role in such beef trade expansion has been pivotal, and deserves a short discussion. As formulated by Bayard & Elliott (1994, p. 243) with reference to the US beef market problem: “To keep growing, the American industry needed export markets”. In 1997, the US Department of Agriculture (USDA, 1997, p. 1): “Future exports of beef depend, in large part, on the US ability to maintain and expand market access, ensure fair competition, and further level the international playing field for US producers and exporters”.

“Market opening” was particularly focused on East Asia both because of the highly protected beef markets here, the low level of beef consumption and the trade-deficit with the US which skyrocketed during the 1980s. Bayard and Elliott (1994) have analyzed trade disputes

between the US and other countries with a particular focus on Section 301, Special 301 and Super 301 provisions of the 1974 US Trade Act, which gives the President broad authority to retaliate against the trade practices of other countries. These provisions have been disputed as they cover any government actions that seek to increase the international competitiveness of specific companies and or economic sectors, thus potentially limiting the freedom of states to pursue industrial policies (Haggard, 1995, p. 33). According to Nollen & Quinn (1994, p. 496), the Super 301 provisions were introduced in the 1988 Trade Bill with a special view to Japan and other East Asian industrial sectors.

Agricultural products, including beef, have been a major focus for US trade policy actions against Japan, Korea, and Taiwan. The 1988 beef (and citrus) agreement between Japan and the US bolstered by threats of trade sanctions by the US eliminated the previously tightly regulated quota system with tariffs. Given the rapid appreciation of the Yen during these years, US beef exports to Japan soared. Domestic prices of high-quality beef in Japan declined by between 25 and 50 percent, and imports of beef increased from 177.000 tons in fiscal year 1987 to 462.000 tons in fiscal year 1993 (Bayard & Elliott, 1994, pp. 260-261). While US policy actions were pivotal for opening the Japanese market, big beef producers like Australia and New Zealand also benefited greatly (Bayard & Elliott, pp. 260-261).

South Korea has also been exposed to aggressive US actions to liberalize its beef imports. In 1988, the American Meat Association filed a Section 301 complaint against Korean licensing routines for beef imports. In order to avoid a 301 investigation, Korea increased its quotas for US beef imports in 1988 and 1989 and changed its licensing practices (Bayard & Elliott, 1994, p. 441).

Facing the threat of US trade retaliation, including Section 301 actions, Korea increased its beef import quotas from the US during the early 1990s. A beef agreement guaranteed

increased import quotas from 1993 to 2000. Korea agreed to remove quota restrictions protecting its beef market by 2001 (AMCHAM, 1997, p. 23). Increasing quotas and the removal of a series of other trade barriers have decreased domestic prices of beef in Korea and led to an increase of US beef exports to Korea from USD 5.6 million in 1985 to USD 151.1 million in 1993 (Bayard & Elliott, 1994). Indeed, as beef imports fell short of the expected quotas during the Asian crisis which hit Korea with unprecedented force in 1997 and 1998, in 1999 the US and Australia used this chance to file a wide-ranging complaint against Korean import barriers with the WTO. The WTO verdict of 2000 forced Korea to accept a wide-ranging opening of its beef market – and a corresponding shock to its farmers and adding to long-term unemployment – in a situation in which the country still suffered from the problems produced by the massive Asian crisis. While short-term prospects for beef consumption were gloomy, US and Australian exporters - interestingly enough inspired by some of the same transnationally based producer groups as demonstrated below - already then saw strong opportunities for market expansion and squeezing out domestic producers in the medium and long term (Australian Department of Foreign Affairs and Trade, 2001). Other kinds of pressure also emerged during the Asian crisis. During the negotiations over fresh US funding for the IMF bailouts in 1998, US conditions for funding included a general pressure to open all borrowers' markets to agricultural imports.<sup>2</sup>

Most interestingly, this process of foreign market penetration went along with a movement towards unprecedented concentration among US beef processors, or indeed, the whole US food production system. During the late 19<sup>th</sup> century, US agriculture was dominated by trusts rendering individual farmers powerless. Malicious conditions in a beef industry dominated by a powerful trust of producers were famously portrayed by Upton Sinclair in *The Jungle* (1906). Ranchers also suffered under the domination of meatpackers due to their dependence on supply

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<sup>2</sup> Reuters, October 13, 1998.

to a buyer monopoly, which in turn exploited its market position to squeeze the profit margins of the ranchers. However, trust-breaking efforts culminating in the 1921 Packers and Stockyards Act that reduced the power of the beef trust and further reforms during the New Deal Years helped to improve the economic situation of ranchers and to retain a more open and competitive market for agricultural products (Schlosser 2001, Hefferman, 1999). However, technological change in meatpacking during the 1960s as well as removal of anti-trust regulations during the Reagan years secured the re-entry of strong concentration in meatpacking. In the late 1990s, the four biggest meatpackers – IBP, ConAgra, Cargill and Farmland controlled 79 percent of the meatpacking capacity in the US (Hefferman, 1999, pp. 17-19). These groups are also main players in other parts of the food system. They have large numbers of cattle in feedlots, are important players in pork packing, broilers, animal feed plants, multiple elevator production, flour, corn, soybean and ethanol production – all strongly concentrated sectors (Hefferman, 1999, pp. 17-19). Moreover, Cargill, Conagra & IBP control 80 percent of the Canadian beef industry. In addition, ConAgra owns the largest Australian beef industry company Australia Meat Holdings. Together with Mitsubishi and Cargill, they control about 75 percent of Australian meat production (Schlosser, 1998).

In the debate on farming liberalization and farming subsidies particularly following the Freedom to Farm Act of 1996, there have been quite convincing claims about implicit and explicit subsidies to the recent expansion of the beef industry in the US. The current meatpacking trust seems to dominate pricing for US farmers through systems of "captive" pricing, canceling the old free market auction systems, harming farmer income and ultimately threatening to make sharecroppers out of farmers (Schlosser, 2001, Frank, 2004, Mattera, 2004). Economic problems of farmers following overproduction in the wake of the 1996 Freedom to Farm Act have apparently been tried solved by US government transfers to the larger farmers (Ray et al., 2003,

Frank 2004). According to Ray et al. (2003), these transfers make up enormous subsidies mostly passed to big agribusiness through substantial farm production far below costs, also having the effect of squeezing out producers in developing countries. Moreover, these implicit subsidies imply huge subsidies to the feedlot system of livestock production. For beef, such subsidized overproduction means expanding supplies of cheap corn to feedlots, expanding profits for meatpackers, and most probably increasing beef production-further increasing also environmental problems related to the US beef industry complex.

For the environment, it is important that the current wave of subsidies that in reality support large agro-industries have also produced environmental problems. Support to the establishment of Concentrated Animal Feeding Operations (CAFOs) has been done under the auspices of the national environmental program EQIP (Environmental Quality Incentives Program) (Mattera, 2004).

For beef supply, there is mounting evidence that the expanding and increasingly internationally focused US beef industry is a corporate complex that simultaneously contributes to decreasing farm and food-industry living standards in the US, environmentally unsound government-subsidized expansion of cereals and meat production, and increasing trouble for local farmers in many developing countries. At the same time, aggressive US trade policy pressure linked to a domestic complex of environmentally destructive over-production clearly contributes to tilting consumption patterns in many countries in a less sustainable direction.

It is interesting to see that the rise of US pressure against East Asian beef import regimes emerged in parallel with the emergence of unprecedented domestic and global concentration of the beef – and other food – business. While more evidence is needed to draw strong conclusions, it seems likely that the extreme concentration of the beef industry may have increased the pressures on the US government to take trade policy actions against countries with different

dietary and agricultural traditions; even more so because this trade policy shift took place in a period in which the more general trade policy influence of US corporate interests and a consequent narrowing of the definition of US national interests has been on the rise (Haggard, 1995, Milner & Keohane, 1996). However, we also see that while the US through its bilateral actions has been highly important for the opening of these markets, multilateral action towards liberalization of agricultural trade during the Uruguay round and later efforts under the auspices of the WTO have facilitated coordinated action by several large beef producers when confronted with Asian trade barriers. The stronger dispute settlement mechanisms of the WTO have certainly favored also less powerful beef producers, like Australia and the Latin American countries. The following table provides information about the importance of these exporters as compared to the US. European Union exports, which are irrelevant for this paper as they are absent from most Asian markets, declined as a consequence of declining export subsidies in the wake of the Uruguay round agreements. Brazil is rapidly picking up as a major exporter. In preliminary calculations for 2003, the same source suggests that Brazil is the leading exporter of beef.

**Table 2: Major Beef Exporters - 2003 (1000 metric tons, carcass weight equivalent).Export percentage share of production.**

	<b>Beef exports</b>	<b>Percentage export share of production</b>
<b>Australia</b>	1300	63
<b>European Union</b>	437	5
<b>Brazil</b>	1175	16
<b>United States</b>	1143	9
<b>Argentina</b>	386	14
<b>Canada</b>	384	32

**Source:** USDA(2004): Beef and veal summary selected countries

## **5. Concluding remarks: Trade, environment and the politics of agricultural liberalization**

Initially, we asked the question whether the convergence of global lifestyles towards a "Westernized", less sustainable consumption pattern could be seen as a "natural effect" of trade liberalization and consumer sovereignty or freedom. The alternative explanation was that consumption changes are framed within wider systems of corporate and national power and domination. As diets are important parts of the environmental burden of consumption, we looked more deeply into the multiple environmental impacts of the consumption of one important "Western" diet component, namely beef. Following this, we analyzed differences in beef consumption between various world regions and described some of the basic ecological and agricultural dynamics behind these differences. We focused particularly on the large differences between beef consumption in the scarcely populated settler colonies of America and Australia/New Zealand on the one hand, and key North East Asian countries on the other hand. We traced a process of convergence between these countries, with beef consumption picking up recently in Japan and South Korea. While economic growth is a key factor, trade liberalization and increasing imports from the US and, consequently, Australia also plays an important role in explaining this process of convergence. The alignment US political power and the market power of transnationally based producer interests are indeed key explanatory factors behind this change of consumption patterns. Thus, it seems that the process of convergence towards less sustainable consumption in this case is more adequately explained by looking at consumption patterns as the endpoints of complex interactions between powerful states, powerful corporate groups and international relations rather than as outcomes of simple market expansion and consumer

adaptation.

A discussion of consumer preferences, politics and agriculture is pertinent here. Korean and Japanese consumers indeed have started eating more imported beef and thus express a certain appetite for these goods as consumers, there is considerable resistance among the populations of these states, not only farmers, to decrease tariff barriers and subsidy systems and in this way destroy traditional forms of agriculture. Traditional forms of agriculture are perceived as important for cultural identity and landscape preservation. Thus, with reference to the initial approaches, Korean or Japanese consumers express a certain appetite for beef when they visit their shops, but when casting their votes, they express a high level of solidarity with traditional forms of agriculture. In Japan, and particularly in Korea, there are strong popular movements to protect local agriculture (Magellan Project, 2003). There is no obvious reason that this resistance can be discarded just by pointing to the "welfare losses" imposed on these population groups by more expensive agricultural goods. One problem with this kind of reasoning is of course that the "externalities" to the biosphere from beef production is in no way "internalized" in current beef prices; a strong economic argument against seeing processes of convergence as simply consumer-driven. In the US, the operations of the modern "beef trust" obstruct any kind of correct pricing of nature and labor. And in a country like Brazil, the recent massive expansion of beef production for exports into the immeasurably valuable Amazon region is indeed a serious symptom that "prices are not right". Another problem is of course that there is indeed a question whether agricultural land can be left to market forces alone. Ray et al. (2003) demonstrate the many economic problems connected to current liberalized production systems in the US. Most interestingly, their conclusion is that the solution for securing food production stability in the US is not further trade liberalization and elimination of subsidies, but rather various socially and politically negotiated interventions for securing producer livelihoods. This conclusion recalls the

conclusions of as diverse writers as Polanyi (1944) and Daly & Goodland (1994). Polanyi perceived full liberalization of agricultural trade into a global system as a social threat because it neglected the diverse functions of land (Polanyi, 1944, p. 178): "The economic function is but one of many vital functions of land. It invests man's life with stability; it is the site of his habitation; it is a condition of his physical safety; it is the landscape and the seasons". Daly & Goodland (1994) indicate that some kind or degree of protectionism may be a precondition for developing sustainable agricultural systems and to protect against the kind of "eco-dumping" exemplified by the modern global beef business. Of course, such processes of boundary renegotiation may not be satisfactory for securing the multifunctionality and sustainability of agriculture alone, but they may leave more room open for political processes that may include both the economic, social and environmental roles of agriculture. An alternative to this kind of "eco-protectionism" is of course stronger multilateral governance of the multifunctional character of agriculture. This is currently tried within the framework of multilateral trade negotiations by East Asian and other states; until now with mixed success. However, whether nationally or internationally based, ecologically sustainable solutions in global agriculture seem to demand a broader basis than the narrow abstraction of "consumer welfare" as the basis of future solutions. If the current environmental problems linked to expanding beef consumption in East Asia are created by a contestable political process rather than a simple and "natural" drive towards increasing consumer welfare, the basis of future efforts to increase sustainability in beef production and consumption must also be based in political deliberation rather than simple economic calculation.

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