Week 5 Lecture 1. The Global Agri-Food Industry: For the Global Connoisseur
GEOG 2200 Global Connection 2012

A changing industry
The production, distribution and consumption of food have been transformed in dramatic ways since the Second World War. For many hundreds of millions of people globally, the struggle for basic subsistence is still an everyday reality – and starvation is always an ever-present possibility. BUT for millions of others – including ourselves – this transformation **is as much a statement about lifestyle as it is about survival**.

As Watts and Goodman wrote in 1997, at the end of the last millennium:

> "The food economy is on the one hand increasingly differentiated in new sorts of ways at the level of consumption – some within LDCs are eating better at a time when others in Africa are descending into a universe of ever-greater food insecurity; millions in California go hungry while others consume 'designer' organic vegetables shuttled around the world in sophisticated 'cool chains.'
>
> "On the other hand, at the level of production and distribution, the food economy is being restructured in radically new ways … increasingly driven by global demand and internationalization of the agro-food industry. The giant food companies and the large retailers are aggressively transforming the world agro-food economy."

In some respects, the modern agri-food industry may seem little different from clothing, automobiles or electronics when it comes to global organization. Sanderson, in 1986, predicted the creation of the "world steer or cow" as a direct parallel to the "world car."

But it does have more profound and immediate impacts that we will come back to later. And the basic fact remains that, unlike other industries, the food industry is grounded in biophysical processes. Therefore, the analysis of the industrialization of food production greatly oversimplifies the highly complex and geographically differentiated industries that make up the agri- (or agro-) food industry.
While food production remains an intensely local process, bound to specific climatic, soil and often socio-cultural conditions, at the same time, certain kinds of local production – specifically high-valued foods such as fresh fruits and vegetables, poultry, dairy products and shellfish – have increasingly become global in terms of their distribution and consumption.

Why is this? Or perhaps a better question is: who benefits from this globalization?

What has permitted this globalization of food? There are three components to this globalization:

- Processes of globalization – 'freer trade'
- Advances in transportation and communications technologies, notably cold storage technology
- Harmonization of national food safety and, to a lesser extent, quality regulations

Today producing food requires huge capital investments, giving immense power to multinational food producers and big retailers. Industrial agriculture has also created huge environmental disturbances in terms of excessive exploitation of sensitive natural ecosystems. From a North perspective, it is characterized by increasing attempts to genetically modify seed, plants and even animals and to 'patent life' [to create 'designer life'], and there are serious human health issues linked to industrial forms of

agriculture. Today debates are not focused solely on prices, but also on: food safety/security; and ethics – of our use of science to create GM life. From a South perspective, there remain crucial issues of food security, land ownership and human rights.

The global agricultural base

Biophysical foundation

Let's begin with what is where. This is not a grade nine geography class so we are not going to spend time summarizing the actual distribution of agriculture and agricultural resources. Let's simply summarize it as follows:

Agricultural depends upon a complex interaction of soils, water and climate. Agricultural land now forms a significant proportion, some 38%, of the world's total land area.
Like all natural resources, agricultural lands (and fresh water) are not evenly distributed geographically on our planet. [Map of agricultural lands]
And like the food producing lands, fresh water is not available evenly either geographically or in terms of time throughout the year. For example, the agriculture of south Asia (India, Bangladesh, Sri Lanka and Pakistan) is defined by the monsoons. [map of fresh water]
And finally, the earth's climate ranges from the tropical to the temperate to the polar.
The different combinations of these factors produce a vibrant and diverse global agricultural tapestry of food types and agricultural practices.

Types of agriculture

The many types of agriculture can be classified into two basic groupings: subsistence agriculture and commercial (or industrial) agriculture.

In general subsistence agriculture is also referred to as peasant agriculture. **Subsistence agriculture** is the kind of agriculture done by poor farmers who have small plots, only grow enough food for themselves.

Industrial agriculture is defined as a modern form of capital intensive farming in which the machinery and purchased are substituted for the labor of human beings and animals. Industrial agriculture requires huge amounts of innovation in agriculture machinery and their utilization, synthetic fertilizers and pesticides, genetic technology, large amounts of irrigation water and creates new markets for consumption. The method of industrial agriculture is used mostly in the developed countries.

Subsistence, or peasant, agriculture can be further broken down into the dominant activities or crops:

- Shifting cultivation or 'slash and burn' or swidden agriculture
- Pastoral nomadism
- Intensive subsistence (wet rice dominant)
- Intensive subsistence (wet rice not dominant)
- Plantation

Commercial agriculture can also be further broken down primarily by the dominant activity:

- Mixed crop and agriculture
- Dairy
- Grain (and oilseed)
- Livestock ranching

- Mediterranean
- Truck (Corporate)

In addition to these broad categories, there are emerging forms of agricultural production – such as organic – in the periphery, semi-periphery and core countries.

The local and global: Where does our food come from?
It's pretty obvious to state that different types of foods come from different places in the world. In Canada, we cannot grow oranges or grapefruits, rice or a wide range of spices because of our climate. We also grow only one crop per season (with perhaps the exception of hay which we can harvest up to three times per year). In tropical regions of the world – including China, southeast Asian countries, India, Pakistan and Sri Lanka, and the Amazon – farmers can grow two crops of rice per year.

Agri-food production circuits
Food has increasingly been incorporated into global trade and global networks since the beginning of trade. It has accelerated under the period of European colonialism, that provide the foundation of today's global connectiveness.

How do we see agri-food production? Food is manufactured through circuits. In the case of clothing, automobiles and semiconductors, it is possible to identify a common basic production circuit for all of these. But agri-food production circuits vary immensely from one food type to another. For traditional, basic commodities, such as grains and oilseeds, this production circuit is relatively simple. But the circuit for high-value foods (HVFs) such as fresh fruits and vegetables, dairy products and meat products, these circuits are much more complex and are driven by differ actors.

History and agri-food production
These agri-food commodity chains are not part of globalized capitalism. Trade in foods has existed since the dawn of settled humankind. [the agricultural hearths]

Agriculture has been traced back 10,000 years, with four distinct 'hearths' or centres of agriculture. These were located in China, Mesopotamia (Fertile Crescent), the Andes and Mesoamerica. Six other secondary centres of agriculture have been proposed as well: eastern North America, Amazonia, West Africa, the Sahel, Ethiopia, and New Guinea.

Foods, seeds and livestock have moved along those same trade routes I spoke of a few weeks back, diffusing new food crops and domesticated animals, and agricultural practices, from one region to another. Wheat and cereal crops, for example, made their way from the Mesopotamia hearth to Europe.

As has also been mentioned, European colonialism was the principle catalyst for a truly global networks of trade. Remember what I have said about the core-periphery relations between the European centres and their colonies. This relationship rewrote the agriculture of many parts of the world, with local foodstuffs being replaced by crops grown for the Imperial markets of Europe (and later North America). Vast plantations replaced local subsistence agriculture in European colonies in Africa, Asia and both South and North America. [How has history altered food production?]

Globalized food production today

Friedland makes two general observations. First, agri-food commodity chains are highly uneven in terms of their global reach, or globality. Second, a similar unevenness is found in economic concentration. Agri-foods are complex. Overall, what should be noted is the slow tendency toward economic concentration in agri-foods and for concentration to take place in specific segments of commodity systems. **To Friedland, most agri-food commodity chains are somewhat less than global.** The degree of globality depends upon the nature of the food product itself.

Consider, as an example, the **U.S. chicken production circuit**. It is highly complex, drawing upon many different individuals both in the growing of poultry, in supportive roles and then in the processing and distribution of the chicken. A major, lead actor in this circuit is the **integrator** – a large company through which the farm activities are coordinated and managed. From a producer's perspective, integrated poultry production facilitates the coordination of chicken processes that are subject to intrinsic biological lags. But the process seeks to retain many of the principles inherent in the 'just-in-time' system adopted by the auto industry.

These integrated operations are supported by a host of technology and input suppliers, such as primary breeders, equipment suppliers, pharmaceutical and chemical firms, feed ingredient suppliers, as well as a host of research and technological support entities. And the influence of the integrated reaches beyond its own operations and activities to relations with other actors – contract producers and processing facilities. **Ultimately, through the actions of the integrator, the system seeks to replicate the functions of an industrial network.**

A second agri-food production circuit is that of the **fresh fruit and vegetable production circuit** and for this we turn to Europe. This circuit presents the fresh fruit and vegetable circuit between Europe and the producing African countries of Kenya and Zimbabwe. It is more concerned with the distribution and marketing functions of the system than the actual production side as was the case of chicken in the US. This production circuit is driven by the large supermarket chains rather than by the producers of the crops. Specific standards, as perceived as being expected by the consumers, drives production practices, crop types and quality controls.

These two production circuits reflect the existing industrial agriculture forms of productions and manufacturing of most of the food products available today. In addition to setting out the types of crops or breeds of livestock, the means of production of the basic products, their manufacturing, packaging and marketing, they also reflect **complex sets of relationships between different people engaged in the circuit**, from the capitalists to the farmers to the farm labourers.

Other examples of global agri-food production circuits

Agri-food commodity systems are generally different. A few are globalized, at least in some segments. Others are much more regional, national, or local. This can be seen by comparing commodities such as grains and flowers. **Grains** are a cluster of commodities, particularly wheat, rice, and corn. While each has its own particularities, these are bulk, storable, relatively low-value commodities whose distribution is primarily globalized even when production and marketing remain primarily national. In contrast**, flowers** — which are found increasingly in transnational movement — are primarily the product of nationally owned capital, i.e., where capital has not yet aggregated at the transnational level but where distribution is increasingly long distance.

Example 1: Frozen Concentrated Orange Juice

FCOJ is a commodity that never appears directly as juice or as frozen concentrate. In its traded commodity form it appears as super-concentrated slurry. It is a commodity that is an input to juice re-manufacturers and other value-adding manufacturers, primarily for mixed juices and drinks. Brazil is the leading producer of FCOJ and the oranges are grown on a number of sizeable plantations, many owned by a small number of very large processors. A somewhat similar situation exists in the United States in Florida, also a major FCOJ producer. Coca-Cola, for example, is engaged in primary agricultural production but also is a concentrator of juice from its own orchards and for oranges produced by other growers.

Once harvested, the oranges are squeezed it their juice that is then concentrated by removing water. In Brazil, the partially-frozen slurry is pumped into trucks and transported to ports where it is pumped into containers and onto tanker ships which transport it to ports in the well-developed world where it is stored and reprocessed with the augmentation of water. This is canned and sold as (consumer) concentrate or remanufactured "reconstituted" orange juice.

The FCOJ system is highly globalized. It is produced in a few countries. It is then shipped to secondary processors for mixing and preparation for retail sale or direct consumption in other countries around the world. Juice is reconstituted from FCOJ produced in Florida, Brazil, California, Mexico and Israel. From a limited global land base, FCOJ is a thoroughly globalized commodity in long-distance movement and is comparatively economically concentrated at the grower, processor, re-processor, and retail levels.

Example 2: Wine

Wine is a global commodity that is very different from FCOJ. It is produced in a great many countries and is characterized by having incredibly differentiated markets. It can be bought by consumers for several dollars or several hundred dollars (and even higher) a bottle. Wine differs significantly between countries and regions. Anyone who drinks wine knows of the great appellations – of France, Germany, Spain and Portugal, and Italy of the 'Old World' as well as the emerging wine producing nations of the 'New World' – Canada, the United States, Chile, Argentina, Australia, New Zealand, and South Africa.

Within the older production locations, wine follows a pattern of very slow concentration with a few large firms, many growers and small winemakers organized in larger co-operatives for making wine. Globally, the wine industry is still relatively unconcentrated except in distribution where, at the global level, a handful of firms have become dominant. The large global firms include: Diageo, Allied-Domecq, Constellation, Foster's, and Gallo. Two of the five (Diageo and Allied Domecq) are primarily large alcohol and food firms; one (Foster) is primarily a beer firm; and only two are primarily focused in wine (Gallo and Constellation, with the latter also being heavily into spirits). Of these, Diageo is the most globalized and Gallo the least. Two of the transnationals are U.K.-based (Diageo and Allied Domecq); two are mergers between Australian and California drinks/alcohol companies (Foster's of Australia and Beringer of California; and Constellation of New York and California, and BRL Hardy of Australia). Gallo is strictly California and privately owned whereas the other four are public corporations.

The buyer also plays a major role in the wine industry. What organization is the largest single purchaser of wines and spirits in the world today? The LCBO.

Example 3: Fresh fruits and vegetables

After the Second World War, in North America and western Europe most people consumed most of their fresh fruits and vegetables (FFV) grown locally or regionally, and certainly nationally. Beginning in

the 1970s, this trade expanded to include a wider variety of tropical FFV, the development of non-traditional export agriculture (NTEA) from tropical and southern hemisphere locations to take advantage of counter-seasonality. By the early 1980s, extended filières from Chile and South Africa were producing table grapes and other FFV for North America and western Europe so that there was year-round supply for FFV which had previously been seasonal.

The explosion in consumption of FFV was driven by the changing structure of labor forces in advanced capitalist countries which required a shift from manufacturing employment to highly-skilled, -educated, and -remunerated technology workers. Concern about food safety and general health contributed to the "explosion." Entry into the extended FFV chains required heavy capital investments in transportation, refrigeration, and coordination of the different segments of the commodity systems and logistics to ensure that reliable transportation segments would be available for transport of FFV over enormous distances.

Getting table grapes and stone fruits from Chile or asparagus from Peru or flowers from Columbia to North American ports and major distribution centers in Europe called for unprecedented chain organization. Companies such as Chiquita (formerly the United Fruit Company), Dole, and Del Monte in the U.S. sought to take advantage of the ostensible "openness" of trade developed under GATT and the World Trade Organization to expand distribution networks to Europe. Two new actors appeared on the scene: Polly Peck International (PPI) and Albert Fisher. PPI became a major actor after Asil Nadir, a Cypriot Turk living in the U.K., saw the opportunity of taking a small clothing manufacturer and growing it into a major shipper and distributor of FFV to Europe. Based on dirt-cheap Northern Cyprus citrus, Polly Peck became one of the hottest items on the London stock market. Albert Fisher represented the same trajectory; entrepreneur Tony Millar bought a small U.K. FFV distributor and proceeded to acquire dozens of FFV distribution firms in the U.K. and the continent before turning to the U.S.

By the early 1990s, these five firms had emerged as the dominant actors in fresh fruits and vegetables in western Europe and North America. Polly Peck bought Del Monte Tropical in 1989 and held it briefly until 1990 when PPI collapsed after Asil Nadir was charged with insider trading. Albert Fisher had a brief exciting life in the U.S. before selling off its American holdings and returning to Europe. Most other FFV firms engaged in long-distance sourcing tended to specialize in a few specific FFV rather than seeking to incorporate the gamut from artichokes to pineapples. Driscoll of California is an example of the specialists focusing exclusively on strawberries and a few other berries and prepared to ship their product not only to North America but to Europe and Asia.

There were anomalies affecting the concentration process. Grower export organizations in New Zealand saw and invented opportunities with kiwifruit, which spread like wildfire, and apples. Washington State, which had been a dominant factor not only in the U.S. but in the export trade, found themselves with outmoded varieties (Red Delicious) no longer wanted by a market that was absorbing Braeburn, Gala, and Fuji apples from New Zealand. It took ten years Washington growers could respond to the new market demands. The Netherlands, major suppliers through co-operatives to the German market, responded by developing seven different colours of bell peppers and, after complaints about tasteless tomatoes, "invented" cluster tomatoes (attached to the vine) to show how ripe their fruit was. This was so popular that Dutch tomatoes were being sold in Santa Cruz, California at three times the price of local tomatoes that had not yet graduated to cluster tomato production.

Example 4: Processing tomatoes

Pritchard and Burch (2003) examined the processing tomato networks in the United States, Australia and Canada, Europe, Thailand, and China, They included growing, processing and reprocessing, and marketing. They (2003: xi) summarize their argument:

> "What passes for 'the global food system' consists of a set of heterogeneous and fragmented processes, bounded in multiple ways by the separations of geography, culture, capital and knowledge…. Global agri-food restructuring needs to be understood as an intricate set of processes operating at many scales, and on many levels, rather than a unilateral shift toward a single global marketplace. "

The Pritchard-Burch study revealed a comparatively small set of filières consisting of production systems built on national and regional bases, producing a commodity similar to FCOJ which "disappears" as a component of prepared foods, such as, pizzas, pasta sauces, and soups. Only a small percentage of the product goes directly to consumers. Growing tomatoes for processing is still relatively unconcentrated although, as a result of mechanization, concentration has taken place among growers in California. In contrast, processing tomatoes have become significantly concentrated with only small numbers of processors in national or regional production.

Most processors prepare tomatoes for use by value-adding companies that make such products as soups, ketchup and sauces. Some companies further process the product into forms appropriate for retail consumption either with specific corporate labels (Heinz, Hunts) or for retail supermarket own-labels.

> "The world processing tomato industry consists of hundreds of thousands of farm and factory workers, tens of thousands of tomato farms, thousands of processing tomato factories, hundreds of specialist processing tomato companies, a dozen key transnational corporations, tens of thousands of individual products, brand names, trademarks and patents, and millions of consumers. "(Pritchard and Burch 2003: 247).

The geographic or spatial concentration is very high. The U.S. produces 42% of world production, the European Union 34%. The remaining percentages of production are small and include: Australia, Canada, Chile, China, Latin America (without Chile), and the Middle East and Africa. Consumption, unsurprisingly, is also substantially spatially concentrated with the U.S. and the EU accounting for 63% of output, mostly from their own locations. Processing tomatoes consists of a series of discrete commodity systems, the two major ones being in the United States. At the global level, despite the fact that we are dealing with an important food commodity, little global economic concentration has taken place unlike the case of FCOJ.

Processing tomatoes, unlike some other agrifood commodities, are not globalized at the level of capital. Its global picture has to be understood less as a globally integrated system but as a handful of regional systems only partially connected to each other at the global level although a closer integration between the various subsystems may be underway through the dynamics of acquisitions, mergers and strategic contracts.

Global shifts in the agri-food industries: How has this been made possible?
The globalization of food has been made possible for two reasons.

Let's begin with a question: what do you see in the supermarket today in terms of fruits and vegetables? First off, you see much **more variety** – exotic fruits and vegetables. You have come to expect avocados, mangoes, and exotic fruit juices in your supermarket. If Queen Victoria reigned today, she would no longer have to offer up a 10,000 pound Sterling reward to anyone who could transport a mangosteen from Sri Lanka to London – she would merely have to command some subject to dash off to the store and pick her up one or two. But secondly, you see a distinct shift in sourcing. The global trade of such produces is strongly regionalized – and perhaps becoming more so through the existence of regional trade agreements. An important factor in this regionalization is the **relationship between producers in the southern hemisphere and retailers in the northern hemisphere**.

Why is this? Because the seasons are flipped between the two hemispheres. As Knox *et al* (2005) write, "With a crop production cycle opposite to that of the Northern Hemisphere, the Southern Hemisphere exporters play a vital role in making year-round supply of 'fresh' fruits and vegetables possible." This is referred to as '**seasonal complementarity**.' This is the first reason for the drive to globalized agri-commodity chains and supply. You end up with globalized production circuits wherein the pattern of production and trade in high-value foods combines elements of global, regional and local scales.

Second, there is, of course, a suite of enabling technologies. Innovations in refrigeration and food-freezing technologies have lead to the creation of what has been termed '**global cool chains**.' **Controlled atmosphere technologies** have extended the shelf life of perishable products. This technology allows operators to lower the respiration rate of produce by monitoring and adjusting oxygen, carbon dioxide and nitrogen levels in the refrigerated container. Coupled with controlling relative humidity, other fresh produce, such as grapes and broccoli, can be transported significant distances as well. A survey in the UK of a basket of 20 fresh foods bought from a collection of UK retailers averaged – taken together – a total distance of more than 160,000 kilometres in travel.

Geographic outcomes: Specialized agri-food production spaces

Cutting across these scales are large, highly specialized agri-food production spaces – or areas of specialized production. Examples of these pre-date today's globalized world. What would be a Canadian example? David Ricardo would be proud of those engaged in the global agri-food sector.

These spaces are the result of highly favourable biophysical conditions that have been exploited increasingly by big integrated food companies who organize both highly efficient, localized production networks and geographically extensive distribution and marketing networks. These developments also reflect specific local geographies, histories and socio-cultural institutions and practices.

Returning to the US chicken complex, the integrators have become highly concentrated in the southern States. This is due to specific local dynamics. First there existed a class of small marginal farmers, located on the periphery of the cotton belt, who were confronted by an agricultural crisis and were looking for alternative forms of livelihoods. Second, you had a class of merchants and feed dealers who readily extended credit to these farmers, providing the institutional basis for the creation of contract grow-out arrangements during the 1950s between these small farmers and chicken processors. They also provided the foundation for the development of tacit knowledge. Third, there was a pool of surplus rural labour available to work in the processing facilities.

An example of the 'new agrarian regions' is the São Francisco Valley of north-east Brazil. It is the largest irrigated agricultural development in Latin America. And it is based on export agriculture, producing mangoes, grapes and tomatoes primarily for North American markets. It possesses a complex agri-food

production complex around the service centre of Petrolina. What has made this new agrarian region unique is its climatic and biological conditions. These allow grapes to ripen in only 120 days – compared to the norm of 180 days – allowing for two crops per year. But again, it is this in combination with the local history and conditions that have created this region.

There has been violence associated with these developments – especially in the semi-periphery and periphery. [Consider, next Thursday, the apple lords of Indonesia.]

Alternative emerging agri-food production circuits

Other 'alternative' networks or circuits exist. These include the production of organic foods and/or various kinds of non-economic actors, such as 'fair trade organizations.' There are two basic driving forces behind these alternative circuits:

- Increasing concerns over food quality and food safety; and
- Fairer treatment of farmer/growers in developing countries.

These networks seek to "redistribute value through the network against the logic of bulk commodity production, [to] reconvene trust between food producers and consumers [and] to rearticulate new forms of political association and market governance."

And more recently, there has also appeared a re-emergence of explicitly territorially-based food production networks with a more local focus. As Sonnino and Marsden (2006) write

> "A key characteristic of the new supply networks is their capacity to re-socialize or re-spatialize food, which comes to be defined by its locale … by drawing upon an image of the farm or the region as a source of 'quality,' alternative food networks 'relocalize' food."

This is done through such actions as the '100-mile diet' and through marketing promotions such as Foodlands Ontario. This is also increasingly being done through Community Supported Agriculture (CSA) networks. But, just how reasonable is this effort? How much of our food can we obtain from/through local production systems?

The reality is that most foods today are still produced through conventional, commercial circuits that seek to rationalize two main sets of processes. First there are standardized, yet specialized, production processes responding to economic standards of efficiency and competitiveness. Second, there are those localized, specialized production processes that attempt to promote trade on the basis of environmental, nutritional and health qualities.

What this globalization of agri-food means to the consumer – the Northern, affluent consumer that is…

Different food sectors have come to organize differently on a global scale. For example, the global chicken sector is concentrated in three countries – the US, China and Brazil (with Mexico coming in fourth). Brazil recently surpassed the US as the world's leading exporter for chicken products. Fresh fruits and vegetable production is also heavily concentrated at the global scale. China is by far the world's biggest producer (and consumer) followed by India, the US and Brazil. But the global production and trade of fresh fruits and vegetables have changed dramatically in recent decades.

Some have argued that the industrialization of food has come at a cost – they say that today's food has lost some of the most desirable traits – taste, texture, colour and uniqueness. In their place, we have created a bewildering array for food additives, preservatives, antioxidants, emulsifiers, flavourings and

colourings. One estimate is that there are some 4,500 different flavouring compounds are used by food manufacturers and that more than 90% of these additives are purely cosmetic.How many of you actually read the list of ingredients before buying a food product?

For the Northern consumer (the consumer in the core economies of post-industrial nations), the question is not will we have food to eat (either because we can or cannot afford it, or because there simply is no food available); the question is what will we eat. Food has changed in its meaning. In developed economies, consumers still only spend around one-tenth of their income today on food, compared with one-third 50 or 60 years ago. But how we 'consume' food differs fundamentally from other commodities. It is uniquely central to human social life. Foods are carriers of historically constructed meanings, both intimate and political. Different peoples also retain different ideas of food purity and danger, of the 'proper' meal, taboos that are often based on historic experience. People also hold differing ideas concerning the proper treatment of animals, the role of governments and the issue of good health. These complexities have made food the subject of bread riots, trade wars and media scares. **Ultimately, what we choose to eat – or not eat – is a complex process mixing taste, religion, health concerns, ethical position, and lifestyle, as well as disposable income.**

While for the majority of global humanity the issue is still one of availability, for affluent consumers – globally – the changing pattern of demand and consumption, rather than the overall levels of consumption, are especially important. This includes:

- Greater choice
- Distancing of urban consumption patterns to rural and national patterns
- Market for food has become increasingly segmented

At one level, this is reflected in the sheer choice found in supermarkets, the rapid growth of new food products and every changing dietary fashions. We witness new shifts every year – for example, the creation of '**lifestyle drinks**' such as the '**latte revolution**' driven by Starbucks. At the same time, there is growing consumer resistance to many of these food products. And there are pressures to re-localize food production [and to give visibility to the many engaged in food production]. As Blythman (2004) writes, 'fresh' supermarket food

> "is predicated on a new nature-defying order where every conceivable fruit and vegetable grown anywhere is available all the time … PGST [**permanent global summertime**] may look good but in the name of consumer choice and public health the irregularity and diversity that is part of the natural order has been eliminated, not to benefit consumers but to fit the way our big food retailers like to do business. In essence, this means sourcing vast quantities of easy-to-retail, long shelf-life standard varieties, grown to rigid size and cosmetic specifications, that can be supplied 365 a year … High-tech, low-taste, odour-free produce is the norm."

What this globalization of agri-food means to the labourer – Changing labour relations

The emergence of the global production circuits have also had a profound impact on the farmers and other workers found in the agri-food sector in both the North core or the south periphery, whether on farms or in processing plants. The proportion of labour has shifted from the field to the factory. The seasonal rhythms of agricultural work – and its associated celebrations and festivals and social/community – has been displaced by Taylorism and time sheets of the processing and packaging lines. Because all governments are heavily involved in regulating their food industries, for health and safety reasons, the working conditions in processing and packaging plants are more tightly monitored

than is the case in some other industries, such as clothing. But much of the work is still mind-numbingly boring and often gruesome.

[the 'family farm' of the north core economies – are they workers or capitalists?]

Division of labour has emerged in the farm sector as well as in the processing (manufacturing) sector

On many industrial farms, there is a clear division of labour – whether you are reading of the fuit and vegetable farms of California or the tobacco farms of Southern Ontario. Not all these jobs are permanent or full-time. Agri-food is probably the largest user of causal labour of all modern industries. The majority of such workers are foreign-born migrant, with virtually no bargaining power and very little protection from abuse. As Oxfam wrote in its report on migrant workers:

> "Thirty percent of migrant workers (or 17 percent of all crop workers) are characterized as 'follow-the-crop' migrants, moving year-round like those portrayed in John Steinbeck's *The Grapes of Wrath* … These migrant farmworkers generally follow one of three migration streams: the eastern stream originates in Florida and extends to the Great Lakes and Great Plains states; the western stream originates in California and extends along the West Coast as far as Washington"

What this globalization of agri-food means to the State

The State plays an important role in the agri-food sector but in more ways than simply dealing with food safety issues. The agri-food sector is the

- most highly regulated,
- heavily subsidized and
- vigorously protected of all sectors.

Regulating agri-food industries

Most countries have a vast array of government institutions and departments involved in monitoring and regulating the agri-food sector. In Canada we have, at the federal level:

- Health Canada
- Agriculture and Agri-Food Canada
- Canadian Food Inspection Agency
- Canadian Pesticide Agency
- Industry Canada
- Environment Canada
- Department of Foreign Affairs and International Trade.

Before the 1970s, as much as 90% of world food production was consumed in the country in which it was produced. This has changed dramatically. And as food trade has become globalized, so have the institutions and regulations dealing with food become increasingly internationalized. These **globalised regulations** have been consolidated under *Codex Alimentarius* – the international code for food. Codex was created by the FAO and WHO. It consists of more than 200 standards, 40 codes and guidelines for food production and processing, maximum levels for about 500 food additives and 2700 maximum-residue levels for pesticide residues in food crops and foods.

Of particular importance has been the emergence of HACCP approaches in the past two decades.

Just how political is this? Braithwaite and Drahos (2000) write

> "The biggest funder of the establishment of the *Codex Alimentarius* Commission was not the US state but the US food industry … Indeed, the Codex has become one of the most industry-dominated international organizations. More corporations have members of delegations to Codex committees (140) than nations (105). [However] the most strategic bargaining in Codex expert committees is done by government representatives of the key states."

Nevertheless, there is a substantial amount of 'private' regulation being integrated into global regulatory frameworks.

Subsidizing and protecting agri-food industries

For reasons that are deeply embedded in national emotions most countries continue to adopt policies to nurture, sustain and protect their agricultural industries. In Europe, and the French in particular, regard the rural economy as sacrosanct. More than half the budget of the EU's Common Agricultural Policy (CAP) is devoted to agriculture although this is becoming increasingly controversial both within the U and in the WTO. Subsidies to US farmers began in the 1930s under the New Deal programme. And they continue to rise in more recent history. In the 1980s, US farm subsidies quadrupled and EU subsidies doubled ["Farm Wars"]. This lead to the floor dropping out under world prices for many agricultural products.

Today, the average subsidy per cow in the EU is more than US$2 per day, the same amount that more than half of the world's population has to live. US farm subsidies continue to allow farmers to export wheat at 28% less than it costs to produce, corn at 10% less, and rice at more than 25% less that cost of production price.

What this globalization of agri-food means to the Corporation

Not surprisingly we are witnessing massive concentration and consolidation occurring at the global level at all stages of food production and processing. The dominant firms in the agri-food sector are familiar names:

- The top five seed companies, each with annual sales exceeding US$1 billion: DuPont (Pioneer); Monsanto; Syngenta [Switzerland]; Groupe Limagra in [France]; and KWS [Germany].
- The top five pesticide companies, with sales exceeding US$3 billion annually: Bayer; Syngenta; BASF; DOW; and Monsanto.
- The top five food and beverage companies with sales nearing or exceeding US$30 billion annually: Nestle; ADM [USA]; Altria Group; Pepsico; and Unilever.
- The top five food retailers, with sales approaching or exceeding US$70 billion annually in food sales: Wal-Mart; Carrefour; Metro [Germany]; Ahold [Netherlands]; and Tesco [UK].

In general:

- Almost half of the world seed market is controlled by the leading 10 companies
- Four-fifths of the world pesticide market is controlled by the leading 10 companies
- One-quarter of the world packaged food market is controlled by the leading 10 firms
- One-quarter of the global food market is controlled by the top 10 global retailers

And they are getting bigger through mergers and acquisitions.

Is this a good thing? Has this lead to the global consumer and global products? The agri-food industries are certainly dominated by the drive to introduce, develop and sustain branded products. It is through

branding that companies seek to convince consumers that there is something special – in terms of quality, reliability, safety – about the foods they are purchasing. Many of these global giants have inherited vast product lines. Nestle, for example, has around 8000 brands and up to 20,000 variants. Most of these have evolved through acquisitions and mergers. The ideal for the producer is to create global brands without any need to modify them, but we have already seen that regional variations in taste do not make this possible.

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As a result of this, many of the food MNCs operate more in the multinational model I referred to in the classes dealing with MNCs. Unliever, for example, describes itself as operating a decentralized multinational strategy with regional production sites. Under its 'Path to Growth,' Nestle has sought to rationalize its operations regionally. Under its 'Centres of excellence' programme, the company has established such centers for production of breakfast cereals in the Philippines, chocolate and confectionary in Malaysia, non-dairy creamers in Thailand, soya sauce in Singapore and instant coffee in Indonesia for the Asian market.

And finally, we also witness the growing interaction of **'big food' and 'big retail.'** Several authors argue that they need each other. Blythman (2004) writes: "'Big Food' and 'Big Retail' are really two sides of the same coin. Big global food manufacturers need big supermarket chains to get their products on the shelves and our big supermarkets need big food processors. … Industrial food lends itself to the supermarkets' heavily centralized, highly mechanical distribution systems." And big food retailers – Wal-Mart, Carrefor, Metro and Tesco – are all expanding into new regions of the world, notably Asia and Eastern Europe. These retailers are also gaining significant power through their ability to shift suppliers.