

THE SUSTAINABLE PRODUCTION AND CONSUMPTION OF FOOD



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The Sustainable Production and Consumption of Food:

A SPAC Watch Working Paper

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Production-Consumption Cycle

Food is one of the most basic objects of consumption and production. As such, it offers a valuable entry point in exploring the challenge of achieving sustainable production and consumption patterns throughout society. This challenge is essentially the task of establishing sustainable development as the world's method of providing "a higher quality of life for everyone," for both current and future generations.¹

For many people, the topic of sustainable consumption tends to refer mostly to the over-consumption by affluent populations of limited natural resources, and the over-production of wastes and pollution resulting from that consumption. Too often the discussion of "sustainable consumption" surrenders to a reductionism narrowing the focus to separate topics such as ecoefficiency or personal lifestyles without linking these as parts of a broader system of production and consumption.

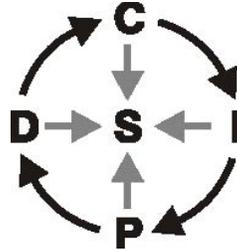
In the *Programme for the Further Implementation of Agenda 21*, the UN General Assembly agreed that "the need for integration is important in all sectors"² and proceeded to identify poverty/production and consumption patterns as "overriding" cross-cutting issues to be highlighted in each year of the planned five-year program. **Making consumption of food, water, shelter and other basic needs sustainable requires not simply changing individual behavior and preferences, but also the system of investment, production and distribution for meeting those needs.**

Seen as a cycle, moving from consumption (C) to investment (I) to production (P) and distribution (D) back to consumption, each of the various stages can be analyzed both in terms of their impact on sustainability (S) and quality of life as well as the policies and changes needed to orient them towards these priorities.

This paper examines some of the points within this cycle which many NGOs have identified as crucial obstacles/opportunities requiring attention and action in the transition to a sustainable food system.

Consumption of food

As with other areas of consumption, achieving the sustainable consumption of food requires confronting problems of both under-consumption and over-consumption. With over 800 million people hungry or starving, the under-consumption of food is one of the world's most urgent albeit shamefully neglected issues. Hidden behind the cruel myth that it is part of the human condition, hunger cries out as a salient indicator of the unsustainability of the global food system. The World Health Organization (WHO) describes this situation as "a continuing travesty of the recognized fundamental human right to adequate food and nutrition, and freedom from hunger and malnutrition," especially so "in a world that has both the resources and knowledge to end this catastrophe."³



The over-consumption of food is also a serious issue. In the past eight years, obesity has increased in the United States by 50%, accounting for 18% of the population. This trend appears in both developing as well as affluent industrial nations. In addition, vast numbers of people – in the North and South -- regularly and willingly consume foods putting them at risk of heart disease, cancer and other illnesses. These are all dimensions of the unsustainable consumption of food.

These consumption patterns -- together with their interdependent investment, production and distribution patterns -- not only undermine the quality of life but also have other negative environmental, social and economic impacts. Policies and programs to counteract those impacts are not necessarily straightforward or easy. Because of the interdependencies involved, solutions require not just analytic but integrative approaches.

At its 8th Session in 2000, the Commission on Sustainable Development is discussing, among other topics, food and sustainable agriculture. In addition to exploring progress in promoting sustainable agriculture and rural development (Chapter 14 of Agenda 21), the session reiterates the priority of sustainable food security -- particularly for both the urban and rural poor. The U.N. Food & Agriculture Organization (FAO) describes *food security* as "access to the food required for a healthy and productive life." This priority includes pursuing the 1996 World Food Summit goal of halving the

¹ United Nations, *Agenda 21*, "Rio Declaration on Environment and Development," Principle 8 (1992).

² DPI, 1997: 29.

³ World Health Organization, "Malnutrition -- the global picture." WHO website.

number of undernourished people in the world by the year 2015.

However, **the need is to achieve sustainable consumption of food by all people.**

The United Nations Guidelines on Consumer Protection defines *sustainable consumption* as including "meeting the needs of present and future generations for goods and services in ways that are economically, socially and environmentally sustainable."⁴ The 1994 Oslo Symposium offered another definition: "the use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations."⁵

Sustainable food consumption can be defined as **access and use by all present and future generations of the food necessary for an active, healthy life, through means that are economically, socially and environmentally sustainable.** Sustainable food consumption thus implies sustainable agricultural production and distribution.

Table 1 - Number of undernourished people (1969-1997)

	Undernourished people (millions)			
	1969-71	1979-81	1990-92	1995-97
Sub-Saharan Africa	89	126	164	180
Near East & North Africa	45	22	26	33
East & South-East Asia	504	406	283	241
South Asia	267	338	299	284
Latin America & the Caribbean	54	46	59	53
Industrialized countries	n/a	n/a	9	8
Countries in transition	n/a	n/a	20	26

Source: FAO (1999)

While global food production has been increasing, the need and demand for food is increasing at a faster rate. With global population increasing from 6.1 billion to 8.9 billion by 2050, the need for adequate food security strategies cries out. The situation in Sub-Saharan Africa and South Asia is particularly dire. Observing the shift in developing countries away from traditional food staples, the Consultative Group on International Agricultural Research (CGIAR) warns "changing consumption patterns in

⁴ United Nations, *Guidelines for Consumer Protection with Proposed New Elements on Sustainable Consumption*, 1999.

⁵ Symposium: Sustainable Consumption, 19-20 January 1994, Oslo, Norway.

much of the world will make this challenge even more difficult."⁶

Under-consumption of food

According to the FAO, the number of hungry people in the developing countries declined from 830 million in 1990-92 to 790 million in 1995-97 -- an annual decrease of eight million hungry people. However, this is hardly sufficient to reach the World Food Summit target. To achieve the Food Summit goal of halving the number in hunger, the decrease must reach 20 million per year. Specific attention needs to be concentrated on Sub-Saharan Africa, where between 1969-71 and 1995-97, the number of undernourished people has doubled, from 89 million to 180 million.⁷

Hunger is not only the problem of developing countries but also exists in the industrial and countries in transition, where altogether 34 million lack sufficient food. In the United States, 10% of households are hungry, on the edge of hunger, or worried about being hungry.

Under-consumption of nutrients

The problem of unsustainable food consumption goes beyond that of hunger and access. The problem of "hidden hunger" -- deficiencies in vital micronutrients such as iron, iodine, and vitamin A -- strikes at 1.2 billion, leaving a devastating wake of illness. The WHO claims that "nearly 30% of humanity . . . are currently suffering from one or more of the multiple forms of malnutrition."⁸

⁶ Shah, Mahendra and Maurice Strong, *Food in the 21st Century: from Science to Sustainable Agriculture*. CGIAR, 1999: 19.

⁷ FAO (February, 2000).

⁸ WHO, "Malnutrition - the global picture."

Problems linked to malnutrition claim the lives of 40,000 people each day, with 19,000 of these deaths among infants and children. Worldwatch points out that "roughly half the population in all nations -- wealthy and poor -- suffers from poor nutrition of one kind or another."⁹

Overconsumption of food

The third category of unsustainable food consumption involves the over-consumption of food. "Worldwide, the number of overweight people now rivals the number who are underweight," says Gary Gardner and Brian Halweil of Worldwatch.¹⁰ This situation brings serious risks to health, such as cardiovascular disease, diabetes, and cancer. In the last decade, obesity has increased in England from 10 percent to 16 percent. In the United States the figures are worse, with 55% overweight and the share of the population who are obese climbing from 15 to 23 percent since 1980.

The problem of overconsumption of food is also not restricted to the industrialized countries. Gardner and Halweil also point out a similar increase in China; between 1989 and 1992 the share of overweight adults climbed from 9 to 15 percent. In Brazil, 31 percent of the population are overweight; in Columbia, the figure is 43 percent. The WHO warns that obesity in both developed and developing countries has reached the level of an emerging "global epidemic," and "should be regarded as one of today's major principal neglected public health problems."¹¹

Food safety

For food to contribute to consumers' health, it has to not only be sufficient in quantity and nutrients but also safe. Thus, a fourth obstacle to sustainable food consumption is the problem of unhealthy food additives, toxic residues, and other byproducts of chemical-intensive food production and processing. In 1962 Rachel Carson sounded the alarm about the impacts of DDT and other chemicals on ecosystems and human health. Today, consumer and health advocates continue the fight with industry and government over appropriate standards and methods of preparing, preserving, flavoring and other types of food processing which might pose health risks.

More recently, health advocates express concerns about genetically modified (GM) foods and persistent

organic pollutants (POPs). GM foods present a risk to the public, says Consumers International, through "adverse allergic reactions, build-up of resistance to antibiotics and the potential for new, or more virulent, toxins in foods."¹² Of the top twelve POPs, nine are agricultural pesticides.¹³ In addition, families coming to the dinner table face threats from residues of agro-chemicals, other pollutants, such as heavy metals present in contaminated soils, fallout of dioxins from incinerators and other industrial facilities.

Table 2 - Percent of population overweight

Country	% over-weight
United States	55
Russian Federation	54
United Kingdom	51
Germany	50
Columbia	43
Brazil	31
China	15
Source: WHO	

These toxins have a special affinity for the fat tissue of living organisms wherein they bioaccumulate up the food chain, magnifying their effects -- such as disrupting or interfering with the body's endocrine system -- at each link. This effect reaches its peak in animal products (meat, fish, milk, cheese), the source of 90% of bioaccumulative POPs in humans.

Growing concerns about food safety are a major impetus to the rapid growth during the 1990s in organic food sales. In Western Europe, the United States and Japan, consumer demand for organic food

Table 3 - Sales of organic foods (1997)

	Billion US\$
Western Europe	5.3
United States	4.2
Japan	1.0
Total	10.5
Source: CSD Division for Sustainable Development	

⁹ Gardner, Gary and Brian Halweil, "Nourishing the Underfed and Overfed," in *State of the World 2000*, Worldwatch Institute: 59.

¹⁰ Gardner and Halweil: 62.

¹¹ WHO, "Malnutrition -- the global picture." WHO website.

¹² Consumers International, *Our Food, Whose Choice? Consumers Take Action on Genetically Modified Foods*, 2000.

¹³ Aldrin, Chlordane, DDT, Dieldrin, Endrin, Heptachlor, Hexachlorobenzene, Mirex and Toxaphene.

has grown by about 25% per year.¹⁴ In 1997, sales of organic foods came to \$10.5 billion. This year, sales of organic food should reach about \$20 billion. By 2005, the market share for organic food should expand in some countries to 5-10% of overall food sales.

Consuming sustainably

On the individual or household level, sustainable food consumption means obtaining, eating and hopefully enjoying sufficient amounts of nutritious and safe food to stay healthy and active. The individual consumer is also an active part of the global food system, one that unfortunately condemns millions to starvation or illness and at the same time wastes and destroys innumerable tons of food while providing more than enough for others. For food consumption to be sustainable, it also has to be through means that are economically, socially and environmentally sustainable -- minimizing waste and pollution and not jeopardizing the needs of other generations. Put in other terms, the social, economic and environmental costs of food consumption -- the negative impacts from the investment, production and distribution of food -- must not be externalized to the environment or passed down to communities, countries at a disadvantage or future generations. Unfortunately, this externalization of costs is a characteristic of the current food system and food consumption.

Poverty is the most obvious obstacle to sustainable food consumption. According to the World Bank, 1.3 billion people exist on incomes of US\$1 a day or less. Food security will only come from rising out of this poverty as well as ensuring against the slide into poverty. The goal may be self-sufficiency for rural sustainable livelihoods, or economic empowerment through forming organizations and alliances to increase political strength and visibility.

One's consumption of food -- if it is to be sustainable -- involves more than choosing, buying and eating nutritious and safe food (if that option is available). **Sustainable food consumption also requires active and responsible participation in the decision-making processes which shape investment, production and the distribution of food.**

Table 4 - Populations living on less than \$1 a day

Region	Million
South America	515
Latin America	110
Africa	229
East Asia & Pacific	446
Total	1,300

¹⁴ Commission on Sustainable Development, "Changing consumption and production patterns: organic agriculture," Background paper no. 4. Division for Sustainable Development, February 2000.

Investment in food

After identifying people's consumption needs, the next set of questions focuses on *investment*. What resources (money, land, labor) are needed and are being invested to achieve sustainable food consumption? Who will mobilize these resources, i.e., who will pay the costs and receive the benefits?

According to the UN Development Programme (UNDP), in order for the world to achieve universal access to basic health and nutrition, an additional annual expenditure of \$13 billion is needed. This is slightly more than the \$12 billion spent annually by Sub-Saharan African countries on debt repayments, while far below the \$17 billion a year spent on pet food in Europe and the United States, or the \$50 billion spent by Europeans on cigarettes.¹⁵ Perhaps even more scandalous is the \$345 billion spent each year on environmentally damaging agriculture subsidies.

Private sector investment in food

While overall foreign direct investment (FDI) has significantly increased during the past decade, it largely bypassed the agricultural sector. The lack of investment in agriculture, particularly in the developing countries, has been partially attributed to support and protectionism in the developed countries, depressing commodity prices. Investment in food security, it is said, will come only after governments reduce tariffs and export subsidies and open markets. For the OECD, the UN and like bodies, the answer to increased investment in food is trade liberalization.

Most NGOs have no illusions about corporate interests in food security, despite the many television and magazine commercials portraying big agro-food companies such as Phillip Morris and Archer Daniel Midland as dedicated to "feeding the world." Most investment in food and agriculture does not aim to provide sustainable food security or a higher quality of life for everyone, but is dedicated to achieving high financial returns to investors. As in other sectors, the business of food and agriculture is to make money.

Rather than find ways to "feed the hungry," most large companies show more interest in identifying new market opportunities offered through changing consumer demographics and preferences -- including a growing preference for organic foods and the aversion (mostly in Europe) to genetically modified foods.

Governments and international agencies highlight the importance of attracting FDI and domestic investment by the corporate and financial sectors to finance increased food production in general as well as environmentally sustainable products and methods. In this discussion we hear about the profitability of "greening" industry, next to calls for greater corporate responsibility and accountability. However, for the FAO "private investment can only be attracted if adequate levels of public goods -- including infrastructure and other measures to promote easy access to markets -- are provided."¹⁶

Table 5 - World's leading food corporations, ranked by foreign assets, 1997

Corporation	Country	(\$US billions)		Total Employees
		Total Sales	Foreign Assets	
Nestle SA	Switzerland	48.3	31.6	225,808
Unilever	Netherlands/UK	46.4	25.6	269,315
Seagram Company	Canada	9.7	21.8	31,000
Philip Morris	United States	56.1	19.4	152,000
Diageo Plc	United Kingdom	22.6	--	79,161
McDonald's Corporation	United States	11.4	10.0	267,000
British American Tobacco Plc	United Kingdom	34.5	8.1	117,339
Danone Groupe SA	France	14.8	7.5	80,631

Source: UN World Investment Report (1999)

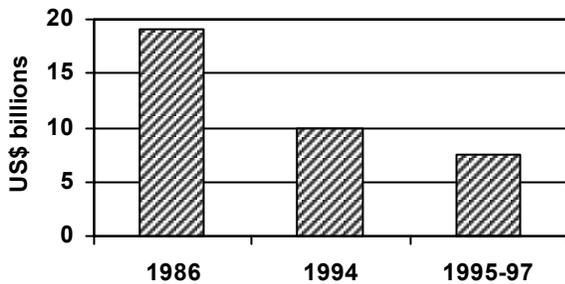
¹⁵ UNDP, *Human Development Report 1998*.

¹⁶ Commission on Sustainable Development, "Sustainable agriculture and rural development: report of the Secretary-General," prepared by the FAO (April, 2000).

Public sector investment in food

Food aid in response to disasters and other emergencies is one of the more immediate, short-term government investments in food security.¹⁷ In 1993, public-sector agencies generated a record 17 million metric tons of food, with 25% going to Somalia, Rwanda and other Sub-Saharan African countries, and 41% going to CEE/NIS countries. However, according to the World Resources Institute, "24 to 27 million metric tons would have been needed to raise the per capita global caloric intake to recommended minimum levels."¹⁸

Overseas Development Assistance (ODA) to Agriculture



One of the more heated discussions at the Commission on Sustainable Development, as well as many other international fora, is about the increase of overseas development assistance (ODA), the need to call for "new and additional resources" to pay for the Agenda 21 and other such commitments. However, the trend is in the opposite direction. The Secretary-General's 1997 report to the CSD highlighted the decline of external assistance to agriculture from \$19 billion in 1986 to \$10 billion in 1994. The Secretary-General's report in April 2000 reports agriculture ODA to have dropped to an average of \$7.5 billion for 1995-1997.¹⁹

Although "development banks and other donors are reorienting their investing strategies towards sustainable agriculture and rural development (SARD)," the CSD pointed out that international

funding is "still well below the levels required to fulfil the expectations raised" in Agenda 21.²⁰ This is an understatement, considering that food aid was cut in half between 1993 and 1996, and that food aid needs in 2005 are projected to rise to four times the amount available in 1996.²¹

Financing food security is not only a matter of getting industrialized countries to increase ODA and for business and industry to invest in sustainable agriculture projects. Another important step is to reduce and eventually eliminate the huge financial subsidies currently invested in activities with environmentally and socially destructive consequences.

Subsidy and tax reform

At its Special Session in June 1997 to review progress during the previous five years in implementing Agenda 21, the UN General Assembly emphasized the importance of "promoting measures to internalize environmental costs and benefits in the price of goods and services."

Governments were asked to "consider shifting the burden of taxation onto unsustainable patterns of production and consumption," helping to internalize environmental costs. In particular, "such tax reforms should include a socially responsible process of reduction and elimination of subsidies to environmentally harmful activities."²²

One NGO from the Philippines points out that the arguments supporting "free trade" priorities do not sufficiently address the issue of agricultural subsidies in the North. Because food exports from the North are subsidized and at the same time externalizing their social and environmental costs. Thus, "food exporting countries have an unfair advantage over poor countries that may be producing food in an environmentally sound way."²³

David Roodman, of Worldwatch, describes in his book the *Natural Wealth of Nations* how during the Green Revolution of the 1960s "pesticides, fertilizer,

¹⁷ NGOs also point out the potential danger of food aid undermining local agricultural production by eliminating the local market for local produce. Local farmers cannot compete with free food.

¹⁸ World Resources Institute, *World Resources: A Guide to the Global Environment*, 1996.

¹⁹ Commission on Sustainable Development, "Promoting sustainable agriculture and rural development." Report of the Secretary-General, April-May, 2000, para 18.

²⁰ Commission on Sustainable Development, "Promoting sustainable agriculture and rural development." Report of the Secretary-General, January 22, 1997.

²¹ Brown, Lester. *The Agricultural Link: How Environmental Deterioration Could Disrupt Economic Progress*, Worldwatch, August 1997: 54.

²² United Nations, *Programme for the Further Implementation of Agenda 21*, June 1997: 19.

²³ Gonsalves, Julian. "Challenges for proponents of sustainable agriculture in the new millennium." International Institute for Rural Reconstruction (IIRR), December 15, 1999.

and water were practically given away, through favorable tariffs, subsidized loans, and government-funded irrigation projects" with "serious environmental and social side effects."²⁴ Now, long after this period, subsidies that the Green Revolution helped spawn persist, distorting assessment of the actual costs and health risks.²⁵

Table 6 - Harmful US agriculture subsidies

US subsidies identified by Green Scissors	5-year savings (millions US\$)
Cotton Program	2,000
Irrigation Subsidies	2,200
Market Access Program	450
Mohair Subsidies	n/a
Tobacco Program	n/a
USDA Peanut Program	n/a
Wildlife Services Livestock Protection Program	50

Globally, over \$650 billion a year (about 9% of government revenue) is spent subsidizing activities harmful to the environment. Of this, Roodman estimates \$288 billion in agricultural payments and price supports in western industrial countries alone,²⁶ with "billions more in subsidies for pesticide and fertilizers in developing countries."²⁷ UNDP estimates a yearly average of \$345 billion spent on environmentally damaging agriculture subsidies during the early 1990s -- with \$335 billion from OECD countries.²⁸ In the industrial countries, families pay more than \$1,000 a year through higher food prices and taxes to fund subsidies. Furthermore, "most of that money goes not to the small farms deemed most deserving, but to the minority of large farms that produce the majority of the food."²⁹ It should not be surprising that these subsidies "lock in"

a pesticide-dependent industrial agriculture system producing increased soil erosion and water pollution.

For several years now, Friends of the Earth, Taxpayers for Common Sense, and the U.S. Public Interest Research Group have worked with a range of other NGOs in the US to produce and recommend the elimination of a list of environmentally harmful subsidies, costing taxpayers \$50 billion. Included in the *Green Scissors* recommended cuts are a number of agricultural subsidies. These subsidies include "both direct payments to commodity growers and indirect subsidies, including import quotas, 'non-recourse' loans (loans that the borrower can opt to repay in either money or crops), tax breaks, insurance payments, disaster bailouts, marketing assistance, and price supports." These subsidies tend to "encourage overproduction and agricultural systems that are dependent upon growing pesticide- and water-intensive crops." In some cases, this kind of farming has "severely jeopardized sensitive ecosystems."³⁰

Not all subsidies are destructive, and NGOs encourage the constructive use of subsidies where they can enhance sustainability and the quality of life rather than undermine it. As one Columbian NGO urges, "Environmental policy related to agriculture must necessarily establish subsidy policies or other policies in order to pay ecological costs to those peasants who work in poly-cultivation or who try to develop organic agricultural projects."³¹

Many NGOs remain hopeful that at some point business and industry will recognize the necessity of responding to environmental and social sustainability priorities. Other NGOs remain skeptical of both government and the agro-food industry's willingness to take the necessary steps to take sustainable agriculture beyond its minor market niche. For these NGOs, the primary initiative must be taken by civil society, by informed and concerned consumers, workers and citizens.

Consumer investment in food

Ultimately, investment by business and government is dependent upon consumers and citizens. If consumers refuse to buy what is marketed to them, investors lose and tend to quickly change priorities. If citizens -- especially when organized and persistent -- express widespread unhappiness and anger about how their taxes are being misused, as with perverse subsidies, eventually governments will also tend to

²⁴ Roodman, David. *Natural Wealth of Nations: Harnessing the Market for the Environment*, W. W. Norton and Company, New York, 1998:135

²⁵ Roodman: 135.

²⁶ "By 1996, governments in western industrial countries were spending \$144 billion on agriculture every year and effectively transferring another \$140 billion from consumers to producers through high prices, for an average total of \$15,900 per farmer--with richer farmers generally getting even more. In other words, government policy inflated the annual food budget of a family of four in these countries by an average of \$1,400." Roodman: 68.

²⁷ Roodman: 38.

²⁸ USDP, *Human Development Report*, 1998: 93.

²⁹ "In 1996, 61 percent of U.S. agricultural support payments--\$4.5 billion--went to the 18 percent of farms grossing more than \$100,000 a year (and typically netting at least \$50,000)."

³⁰ Friends of the Earth, *Green Scissors 2000*.

³¹ Navia, Jose M. *The Ecological Debt*, Fundacion para la Investigacion y Proteccion del Medio Ambiente (FIPMA), 1994.

shift their public investment priorities. Thus efforts to influence consumer and citizen perceptions and values, especially the belief that business and government are actively responding to consumer and citizen demands.

One way concerned citizens -- those with sufficient discretionary income -- may directly invest in sustainable food companies is through socially responsible investment (SRI) services, using social and environmental screens on potential firms. SRI, especially when linked with large pension funds, is gradually increasing its influence within the larger investment community and slowly revealing itself as an alternative to traditional commercial investment funds.

However, as separate and isolated individuals and households, citizens easily feel they have little influence over the investment policies and practices of business and government -- except where mutual interests naturally converge within the market or general public opinion. Advertising, marketing and public relations campaigns have great sway in shaping perceptions about what is desirable or harmful. This public impotence is especially the case while consumers remain uninformed or unconcerned with the social, environmental or economic impacts of those policies and practices.

For the most part, consumers are preoccupied with managing their own household budgets, how they will invest their time, income, land, labor or other resources to acquire the food, clothing, housing and other goods they need and desire for themselves and their family. Food is the most immediate priority of the household budget.

For those who do not produce their own food, the majority who are dependent on the cash economy and must buy their food from retailers, the key questions are of availability, desirability, price and ability to pay. For those without land, access or ability to pay, there are no opportunities; their investments must be in immediate survival strategies. If food aid or technical assistance is available, this means knowing about it and getting access to it. For the hungry and the poor it means taking whatever action is needed to change their situation, whether to obtain or retain the use of productive land or to find sufficient income to purchase food products. The desperation of poverty motivates the burning of rainforests to enable farming of small plots of land, despite low soil productivity. It drives the acceptance of debt to buy fertilizers and dangerous pesticides to squeeze additional produce from the land. It also leads to abandonment of rural

family homes and communities for hopes of a paid job in the city.

In order to effectively mobilize the political capital needed to influence public and private investment towards sustainable food security priorities, citizens need to educate themselves about the nature of the obstacles and the possibilities of collective action and mutual support. One example is meaningful product labeling, such as whether a particular food includes genetically modified contents. Such information -- when not provided by government, the media or the education system -- is the responsibility of nongovernmental or civil society organizations, including consumer rights advocates, health and environment NGOs, and others whose priorities are more directly focused on sustainability and quality of life than profitability or elections.

Production of food

To be sustainable, food production must improve the quality of life while ensuring social, environmental and economic sustainability. This should be understood as the goal of sustainable agriculture. Agenda 21 identified the objective of increasing food production in order to meet the needs of a rapidly growing population, particularly in the developing countries. Earth Summit delegates and those of the CSD recognized that in the face of population growth of 80 million a year and continued urbanization, arable land is not just limited but shrinking. Furthermore, the productivity from the chemical-intensive Green Revolution had reached a plateau of now diminishing returns. Thus, "major adjustments are needed in agricultural, environmental and macroeconomic policy, at both national and international levels, in developed as well as developing countries to create the conditions for sustainable agriculture and rural development (SARD)."³²

In Agenda 21, the main objective of SARD is "to increase food production in a sustainable way and enhance food security." In 1997, the UN General Assembly announced that "the greatest challenge for humanity is to protect and sustainably manage the natural resource base on which food and fibre production depend, while feeding and housing a population that is still growing."³³ As with other chapters and commitments in Agenda 21, these general recommendations are easier to say in speeches than to implement.

Crisis of industrial agriculture

NGOs such as World Hunger Year (WHY) and others point out that while the conventional, industrial food system tends to be perceived as modern, efficient and able to produce cheap and abundant food, the unsustainable environmental and social costs of this system are becoming increasingly apparent.³⁴

Chee Yoke Ling of Third World Network (TWN) describes the situation as the crisis of industrial agriculture. The symptoms of this crisis include soil erosion and productivity loss, pollution of surface and groundwater, loss of cropland to urban

development, loss of wild plant and animal genetic resources, elimination of pests' natural predators, chemical contamination and the destruction of natural control mechanisms. This crisis, she explains, "is the systematic result of more than 40 years of the prevalent socio-economic system that promotes monocultures and the use of high-input technologies and agricultural practices."³⁵ Agricultural policies emphasize production targets rather than "an integrated approach towards sustainable livelihoods, human development and poverty eradication in rural areas." These policies are in turn based on an unsustainable model of economic and social development that assumes small farmers need to be integrated into the global agricultural market -- regardless of the impact on local communities and the ecosystems sustaining them.

According to Lester Brown of Worldwatch, "the food system is likely to be the sector through which environmental deterioration eventually translates into economic decline."³⁶ For Brown, "all the key food

Table 7 - Share of Agricultural Land with Degraded Soils, 1945-90

Region	Degraded share (%)
Central America	74
Africa	65
South America	45
Asia	38
North America	26
Europe	25
Australia	16
Source: Worldwatch (1996)	

security indicators signal a shift from surplus to scarcity." With scarcity come rising food prices followed by political instability. "If the price of grain were to double, as it already has for some types of seafood, it could impoverish hundreds of millions more almost overnight," Brown warns. "In short, a steep rise in grain prices could impoverish more people than any event in history." In response, people would hold their governments responsible and likely "take to the streets."

NGOs, international organizations and others have highlighted the following impacts and costs of industrial agriculture:

³² United Nations, *Agenda 21*, Chapter 14, para 14.2.

³³ United Nations, *Programme for the Further Implementation of Agenda 21*, June 1997, para 62.

³⁴ Mann, Peter; Christian Castellent, et al. "Knowledge for a sustainable food system: Identifying and providing for education, training, knowledge-sharing and information needs," SAFS Caucus, NGO Dialogue Paper 4, February 2000.

³⁵ Chee Yoke Ling.

³⁶ Brown, Lester. *The Agricultural Link: How Environmental Deterioration Could Disrupt Economic Progress*. Worldwatch, August 1997.

- **Soil degradation:** The area of cropland per capita has been steadily declining, from 0.43 hectares (ha) in 1961 to about 0.26 ha in 1996.³⁷ Since 1945, nearly two billion hectares became degraded -- more than one-sixth of the world's productive land -- because of poor agricultural practices.³⁸ About 5-6 million hectares are lost each year to soil degradation. Near half the world's degraded lands in Asia and one half billion hectares in Africa are moderately to severely degraded. NGOs like Worldwatch recommend governments provide incentives to farmers to remove from cultivation land that cannot be farmed sustainably; governments can promote through extension services soil-conserving methods such as conservation tillage, terracing, alternative cropping arrangements, use of shelter-belts.³⁹ The German NGO Forum on Environment and Development urges that "agricultural practices that damage soils such as the use of chemical and synthetic pesticides and easily soluble mineralic fertilizers as well as large-scale livestock farming unlinked to farm acreage -- should be made more difficult (e.g., by taxing such substances)."⁴⁰
- **Cropland loss to urbanization:** While the future jump in demand for food should motivate protection of arable land, this is generally not the case. Prime farmland continues to be lost at a serious rate due to urban development. Although losing almost 4 million hectares of cropland between 1987 and 1992, China continues towards its goal of building 600 new cities by 2010.⁴¹ In turn, the United States lost almost 2 million hectares between 1982 and 1992. *Recommendations:* Require greater densities in urban and suburban building; establish zoning that protects urban "greenbelts;" enact farmland conversion taxes; provide better access by women to education, economic security and family planning resources -- key factors in reducing population growth.⁴²
- **Yield loss:** The dramatic rise in grain yields between the 1960s and 1980s tended to outweigh

the loss of arable land. However, since 1984, grain yields have slowed to such a degree that they no longer compensate for the steady elimination of grainland.

- **Water pollution:** The "increasing use of inorganic fertilizers is resulting, in some areas, in the contamination of drinking water with nitrates and damage to aquatic ecosystems from eutrophication."⁴³
- **Overpumping of groundwater:** In many irrigation-dependent countries, including China, India, North Africa, Middle East, southwestern United States, water tables are falling because of overpumping.⁴⁴
- **Overfishing:** According to CSD, overfishing has resulted in reduced productivity of fisheries, with the marine fish harvest now stagnant.⁴⁵ UNDP claims fish stocks are declining, with about one-fourth currently depleted or in danger of depletion and another 44% being fished at their ecological limit.⁴⁶

Organic vs. chemical-intensive production

The rise of industrial agriculture with its high-yield seeds depending on high chemical inputs is associated with the Green Revolution of the 1960s. The assumption was that higher yields would mean more income for poor farmers and thus less poverty, and that more food would mean less hunger. By the 1970s, the traditional farming method of using saved seeds from local plant varieties -- practiced by farmers in developing countries -- was exchanged for the new hybrid seeds with their accompanying need for petrochemical fertilizers, pesticides and controlled irrigation. Local farmers thus became unable to save seeds from one year to the next, now dependent on the transnational seed dealers. By the 1990s, approximately 40 percent of Third World farmers were using Green Revolution seeds, mostly in Asia and Latin America.⁴⁷

Unfortunately, the immediate high-yield output from these methods have been paid for by degraded natural fertility of the soil, the evolution of pesticide-resistant pests, not to mention the damage to environment and health. In turn, the amounts or concentration of

³⁷ Commission on Sustainable Development, "Comprehensive review of changing consumption and production patterns: Report of the Secretary-General." E/CN.17/1999/2. April 19-30, 1999.

³⁸ World Resources Institute, *World Resources: 1998-99*: 156.

³⁹ Gardner, Gary (1996): 44.

⁴⁰ German NGO Forum for Environment and Development, "Sustainable agriculture and rural development," position paper circulated at CSD Intersessional, February 2000.

⁴¹ Gardner, Gary. "Shrinking fields: cropland loss in a world of eight billion," Worldwatch Paper 131, July 1996.

⁴² Gardner, Gary (1996): 44.

⁴³ CSD.

⁴⁴ Worldwatch, *Vital Signs 1999*: 19.

⁴⁵ Commission on Sustainable Development.

⁴⁶ UNDP, *Human Development Report 1998*: 4.

⁴⁷ Rosset, Collins, and Lappe, "Lessons from the Green Revolution."

fertilizers and pesticides needed are now starting to outpace yields, with farmers also facing a cost-price squeeze. In the 1990s, production costs have risen from half to over 80 percent of gross farm income. The result has been the abandonment of small family farms and a "gutting of rural communities," with an increase in rural unemployment, and the rise of large "super farms."⁴⁸

As to the impact of expanding pesticide use, WRI reports one estimate of 50 to 100 million people in developing countries receiving intensive pesticide exposure, with another 500 million receiving lower exposures. The result is 3.5 million to 5 million acute pesticide poisonings per year, with a larger number suffering from subacute effects.⁴⁹ Most of these occur in developing countries, especially from organophosphates and carbamates, many of which are banned or restricted in developed countries. In the United States, nearly 4 million agricultural workers are at risk of significant pesticide exposure, resulting in 10,000 to 20,000 poisonings treated each year, with at least as many going untreated.⁵⁰ In addition to agricultural workers, people living near farms or plantations are also victims of pesticide poisoning, with children the most vulnerable.

The other major chemical input associated with industrial agriculture, nitrogen fertilizers, increased in use more than five-fold between 1960 and 1990. In developing countries, fertilizer use is expected to double by 2020, growing especially in Africa and South Asia. One of the main pollution concerns with fertilizers is contamination of surface and groundwater with nitrates, threatening both health and environmental quality. Human health risks from nitrate contamination include "blue baby syndrome" and cancer. Unfortunately, nitrate is now one of the most common chemical contaminants in drinking water. "In the United States . . . nitrate contamination is the nation's most widespread groundwater pollution problem," says WRI, with "22% of wells in agricultural areas in excess of the federal limit."⁵¹

Organic farming, on the other hand, avoids such chemical dependency. Organic agriculture, explains the International Federation of Organic Agriculture Movements (IFOAM), "dramatically reduces external inputs by refraining from the use of chemo-synthetic fertilizers, pesticides and pharmaceuticals." Instead, these methods allow "the powerful laws of nature to increase both agricultural yields and disease

resistance."⁵² Integrated pest management (IPM), for example, with techniques using natural pest predators and other non-chemical methods, is increasingly being recognized as a suitable alternative to heavy pesticide-based pest control. As a result, organic agriculture improves the fertility and structure of the soil, using crop rotation, recycling of crop residues, applying organic manures and mulches to encourage development of soil micro-organisms.⁵³ In addition to strengthening soil fertility, organic farming methods protect surface and ground water and helps preserve biodiversity.

For many NGOs, agroecology/organic agriculture is the approach most suited for meeting the challenge of creating food security while conserving the environment and natural resource base of agriculture and providing a path out of poverty.⁵⁴ *Sustainable farming* has been described as seeking "to make the best use of nature's goods and services whilst not damaging the environment." This is done by "integrating natural processes such as nutrient cycling, nitrogen fixation, soil regeneration and natural enemies of pests into food production processes." Furthermore, it "minimizes the use of non-renewable inputs (pesticides and fertilizers) that damage the environment or harm the health of farmers and consumers."⁵⁵

Unfortunately, only a small percent of agricultural producers are organic farmers. Within the European Union, only 1.3% (about 100,000) of all farms are organic. By country, organic farms tend to be more common in Sweden (12% of all farms), Austria (9%) and Finland (4%).⁵⁶

Biotechnology: Fear of "Frankenfoods"

Another controversial development of industrial agriculture is biotechnology, eliciting strong resistance by NGOs to the push by the life sciences industry to integrate genetically modified (GM) food -- dubbed "Frankenfoods" -- into the global food system. While Agenda 21 uncritically promotes biotechnology as offering opportunities to "transform biological resources so that they serve the needs of

⁴⁸ Ibid.

⁴⁹ WRI, *World Resources 1998-99*: 44.

⁵⁰ Ibid.

⁵¹ WRI, *World Resources: 1998-99*: 47.

⁵² CSD, "Changing consumption and production patterns: organic agriculture," February 2000.

⁵³ CSD, "Organic agriculture."

⁵⁴ Pretty, Jules and Miguel Altieri, "Ecological and socio-economic foundations for defining best practices for sustainable agriculture and rural development," draft of NGO position paper 3, January 2000.

⁵⁵ Pretty and Altieri.

⁵⁶ European Commission. *Agriculture, Environment, Rural Development: Facts and Figures*, 1999: 113.

sustainable development"⁵⁷ -- defining these needs more in terms of increased production than health and safety -- NGOs are more likely to highlight the aggressive lobbying by the life sciences industry in promoting genetic engineering in agriculture, the downplaying of risks and willingness to pass these risks to consumers and farmers.

As to the claim of reducing chemical dependency, some of the new genetically engineered seeds require increased use of chemicals, as well as high-quality soils and major investment in machinery, asserts the Center for Ethics and Toxics. "Two-thirds of the genetically engineered crops now available, or in development," they say, "are designed specifically to increase the sale of pesticides produced by the companies that are selling the genetically engineered seeds."⁵⁸ One example is of Monsanto's "Roundup Ready" products, whereby farmers using Roundup Ready seeds are required to also use Monsanto's Roundup Ready herbicides.

The FAO, claiming that "the application of agricultural biotechnology techniques can increase food security," identifies the key problem in the lack of attention in research to "pro-poor objectives that could positively impact on sustainable agriculture and rural development objectives."⁵⁹ In their recommendations to the CSD, the FAO stress "the moral imperative for making modern agricultural biotechnologies, such as genetically modified (transgenic) crops readily and economically available to developing countries who want them."

However, for NGOs and critics such as Vandana Shiva, biotechnology tends to represent companies -- such as Monsanto, Novartis and Pioneer-Dupont -- aiming "at controlling vital resources necessary for survival, converting them into a market and using public finances to underwrite the investments."⁶⁰ Rather than addressing the needs of the poor, many NGOs see the danger of a small number of American and European biotech companies gaining a monopoly over the seeds needed to produce the world's food crops.

For these NGOs, the problem is not lack of research or even lack of food, but rather the concentration of

⁵⁷ UN, *Agenda 21*, para 16.1.

⁵⁸ Lappe, Marc and Britt Bailey, *Against the Grain: Biotechnology and the Corporate Takeover of Your Food*. Monroe, Maine: Common Courage Press, 1998.

⁵⁹ FAO, "Biotechnology for sustainable agriculture," Report of the Secretary-General, Commission on Sustainable Development, February 2, 2000, para 2.

⁶⁰ Shiva, Vandana. "Monsanto's expanding monopolies from seed to water" 1999.

economic power among large chemical and agribusiness corporations, exerting "unprecedented control over the products and processes of life -- the biological basis for commercial food, farming and health."⁶¹ The Rural Advancement Foundation International (RAFI) identifies the transnational enterprises dominating the commercial sale of pesticides, seeds, pharmaceuticals, food and animal veterinary products as the "gene giants." The trend of increasing mergers and acquisitions is a shift by chemical companies -- such as Monsanto, Bayer, Dupont, Aventis (Hoechst+Rhone-Poulenc) -- into the new business of biotechnology, "shifting out of commodity petrochemicals into biology -- away from hydrocarbons to carbohydrates." Rather than an opportunity to enhance food security, "the hungry, like the well-fed, will have to pay the corporate owners of this new technology for permission to eat."⁶²

Farmers big and small

One source of confusion in the discussion is the term "farmer." Agro-food industry representatives frequently use this term when they describe the interests of their large industrial food-producing constituents, while giving the impression they are speaking for small family farmers. Likewise, the term "sustainable agriculture" will in turn take on different meanings depending on who is speaking.

Table 8 - Percent employed in agriculture (1994)

	Men	Women
East Asia & Pacific	67	72
Europe & Central Asia	23	22
Latin America & Carib.	29	12
Middle East & N. Africa	29	55
South Asia	59	75
Sub-Saharan Africa	65	75

Source: World Bank¹

Farmers are defined by Agenda 21 as a major group comprising "all rural people who derive their livelihood from activities such as farming, fishing and forest harvesting." Over half the world's population is engaged in agricultural production, most of whom are women. Agenda 21 identifies these people as "stewards of much of the Earth's resources" and asserts that "a farmer-centered

⁶¹ Rural Advancement Foundation International (RAFI), "The gene giants: masters of the universe?", 1999.

⁶² Lappe and Bailey, *Against the Grain*, 1998.

approach is the key to the attainment of sustainability in both developed and developing countries."⁶³

However, there is a big difference between small farmers, particularly those engaged in subsistence farming and local consumption and the large agribusinesses whose main interest is in imports and exports. One concern of many small farmers is the effort by bodies such as the WTO to further liberalize trade in agriculture, this effort is seen, as one Filipino NGO explains as "the single most important factor which could determine the survival of the small farm (both in the North and the South) in the next millennium."⁶⁴ In his view, "small corn and rice farmers the world over are already beginning to lose their historical comparative advantage to large scale producers (that have the economies of scale and are assisted by subsidies.)"

"In contrast with holistic farming systems with their close links between agriculture and ecology," explains Chee Yoke Ling of Third World Network, "modern production systems in the post-World War II period are reductionist in their approach." This approach favors "large farms, specialised production, crop monocultures and mechanisation, and compromising on ecological principles and human health."⁶⁵

A threat exists also from large corporations to dominate organic food production at the expense of small farmers. "In our countries we are being confronted with the fact that big landowners are incorporating organic agriculture practices and inputs as they see a niche in the market for organic products," says Friends of the Earth Uruguay.⁶⁶ "As they are capitalized, they have more possibilities to get credits and have more access to markets." The problem is that small family farmers who have been doing ecological agriculture for many years do not have this market access and will not survive this competition.

Furthermore, this capital intensive industrialization of organic agriculture "is resource intensive, employs high external organic inputs, does not take into account ecological cycles, and in most cases is based on exploitation of rural workers." There is no sustainable rural development because these so-called "farmers" do not live in the rural areas nor participate

in the community's life. Rather, rural communities are undermined.

Concerned with the impacts of corporate concentration and control within agriculture, the trade unions also express their concerns that agricultural production and trade are "increasingly dominated by powerful transnational corporations" of which "a handful now control most of the world's agricultural trade and . . . have managed to 'internationalise' production and consumption."⁶⁷ This internationalization "divides North from South and separates increasingly larger, intensive agricultural operations that tend to be mechanised and which use many more commercial inputs from small-scale, subsistence agricultural operations, which are based on traditional methods."

Achieving market dominance is one important objective of private sector investment and is a major motivation behind the large flows invested in mergers and acquisitions of food companies. The majority of mergers and acquisitions has not been in the primary agricultural, forestry and fishing sector (with sales of US\$ 1.6 billion in 1998) but rather the secondary processing and distribution sector (sales of US\$ 18.3 billion).

Transition to a new mainstream

"Organic/ecological agriculture is now beyond just vision and potential," points out Third World Network, adding that "it is therefore timely for the CSD to promote the mainstreaming of organic/ecological agriculture amongst governments, bilateral and multilateral agencies."⁶⁸ **Overall, the major task and challenge is to find the strategy by which sustainable agriculture can successfully make the transition to become the standard operating framework for producing food and achieving sustainable food security.**

As the OECD observes, there are two conflicting groups at the heart of the policy debate. On one side there are the concerns of environmentalists, consumer and business organizations which "focus on conservation and sustainable development as well as safer and healthier products" and who are leery of the "allegedly negative impacts of free trade." On the other side are the farmers and "food organizations" (i.e., industry associations) who are concerned "that

⁶³ Agenda 21, section 32.3.

⁶⁴ Gonsalves, Julian F.

⁶⁵ Chee Yoke Ling, "Choices in agriculture production..."

⁶⁶ Nansen, Karin and Alberto Villarreal, Uruguay (FOE/Sustainable Uruguay - urusust@redes.org.uy)

⁶⁷ ICFTU, et al. "Plough to plate."

⁶⁸ Chee Yoke Ling, "Choices in agricultural production techniques, consumption patterns and safety regulations: potential and threats to sustainable agriculture." NGO Dialogue Paper no.1, January 2000.

stricter food and environmental standards will weaken their international competitiveness."⁶⁹

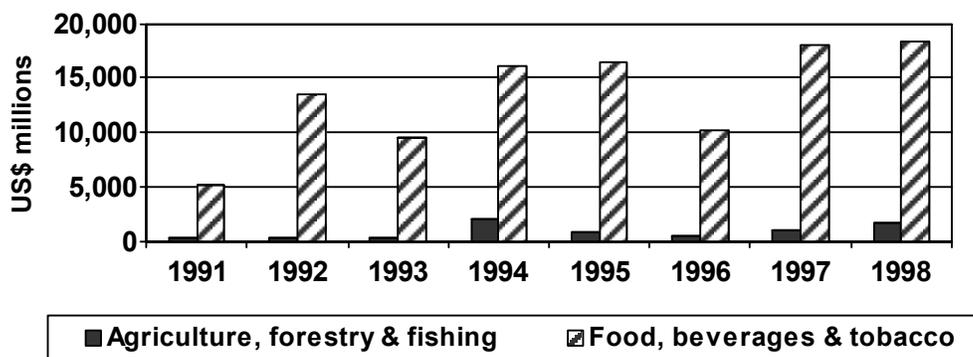
NGOs have highlighted the "key policy challenge" of formulating "a strategy founded on the informed participation of relevant stakeholders at all levels of discussion, that enhances food security, provides paths out of poverty and conserves the natural resource base of agriculture."⁷⁰ One of the NGO recommendations for the CSD8 Dialogue on Sustainable Agriculture is to form an ongoing multi-stakeholder working group on sustainable agriculture and rural development.

However, it is obvious to many that the transition from industrial agriculture to a sustainable global food system is going to need a lot more than informed discussion. For this multi-stakeholder discussion to be substantive, **the players who now define economic and political policy and receive the benefits from business-as-usual need to feel increasing pressure from informed consumers, workers and citizens** -- those who ultimately pay the externalized costs in health risks and environmental damage.

In their position paper for the 8th session of the CSD, the trade unions posed an important question: "For what public purpose should increased food productivity rises be encouraged in the future and how should the benefits be more directed to

promoting a sustainable food system?"⁷¹ In the current system, food is primarily produced for profit and this overshadows all other concerns about health or environmental protection. "The lion's share of profits from productivity," they point out, "goes to those who own, market and control production and distribution. From the trade union's point of view, as well as many NGOs, **the dominant problem is not insufficient production of food but "with the distribution of the benefits."**"⁷²

Mergers & Aquisitions of Food Companies



⁶⁹ Viatte, Gerard and Josef Schmidhuber, "Long-term policy issues and challenges for agro-food," in *The Future of Food*, OECD (1999): 178.

⁷⁰ Pretty, Jules; Miguel Altieri, et al. "Ecological and socio-economic foundations for defining best practices for sustainable agriculture and rural development," NGO Dialogue Paper No. 3, January 2000.

⁷¹ ICFTU, et al. "Plough to plate' approaches to food and agriculture: workers and trade unions in the agriculture and food system." International Confederation of Free Trade Unions (ICFTU), Trade Union Advisory Committee to the OECD (TUAC), International Union of Food and Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations (IUF), February, 2000.

⁷² *ibid.*

Distribution of food

The final phase of the cycle is the distribution of the goods and services produced in response to consumers' needs. Key questions are: (1) What are the outlets and through what process do people get access to nutritional and safe food? (2) To what degree does the distribution system provide for people's nutritional consumption needs? (3) Does the distribution process improve or undermine environmental, social and economic sustainability?

Getting food to the table

Those who do not grow their own food must buy from those who do -- or one of the many intermediate sellers of farmers' goods. Generally in capitalist societies, food distribution is a marketing function. This activity involves transportation, packaging, sales and advertising -- with trade representing one dimension of sales.

Once food is produced it is then packaged, transported and delivered to a sales outlet. Some food is moved by cart to the local village market, hopefully to wind up that evening stewing in the family cooking pot. Other food -- an increasingly major share -- is loaded into huge cargo boxes and shipped or flown thousands of miles away, later carried by refrigerated railroad cars and/or trucks to a warehouse to perhaps wait for weeks or even months. Eventually the product ends on the grocery shelf or serving platter.⁷³

Grocery stores are roughly divided between supermarkets, usually owned by commercial groups, and "secondary" retailers, including independent grocers and specialists (bakers, butchers, fish-sellers, etc.) as well as convenience stores and kiosks. In Chile, supermarkets now account for over 70% of food purchases.⁷⁴ A basic trend is the growing concentration and power of the large supermarket retailers. In 1996, the \$92.3 billion earned by the top five supermarket chains in the United States accounted for 23% of total supermarket sales (about \$400 billion).⁷⁵

In 1995-96, secondary food retailers accounted for 28-33% of all food and drink sales in the UK, France, Germany and Italy, with about 200,000 outlets per country. Major growth is in gas station/convenience

stores and snack food vending machines. In the United States, secondary retail outlets include 93,000 convenience stores with total sales of \$144 billion in 1995. Most of these stores are linked to gas stations (52% of total secondary food sales).⁷⁶

Restaurants. In the United States, slightly less than half (45.3%) of the money people spend on food is for eating outside the home.⁷⁷ Over half (52%) of this out-of-home eating takes place for dinner, followed by lunch (37%) and breakfast (11%). Altogether, spending on food prepared throughout the 831,000 restaurants across the country in 1999 amounted to over \$358 billion -- more than \$ 1 billion a day. Almost two-thirds of this amount was spent at either full-service restaurants (\$121 billion) or fast-food outlets (\$110 billion). The rest is spent for food in cafeterias, ice cream shops, and contractors for hospitals, colleges, airlines, military and other settings.

High in calories, sodium, fat and cholesterol, **fast foods** increase the risk of obesity, coronary heart disease, hypertension, diabetes and cancer. Unfortunately, a major indicator of development in developing countries, countries-in-transition, and urbanizing rural areas is the appearance of the highly advertised fast food chains (McDonald's, Burger King, Kentucky Fried Chicken, etc.) Between 1991 and 1996, the number of McDonald's restaurants in developing countries quadrupled -- growing especially in Latin America and Asia, from 448 to 1,824 outlets.⁷⁸ This number is still far behind the 19,198 McDonald's outlets in the industrial countries.⁷⁹ In Western Europe, market penetration of the fast food chains is as follows: France (29%), United Kingdom (28%), Germany (24%), Spain (17%), and Italy (6%). In the United States, where fast foods accounts for half of restaurant revenues,⁸⁰ the top ten chains represent 10% of the total commercial food service market.⁸¹

The organic food market

While organic farm products represents only about one percent of the global food market, production and consumption of certified organic products keeps

⁷³ In Europe, 80% of food is distributed through retail food outlets, 20% through food service/catering sources. Gordon, Alan D., "Changes in food and drink consumption, and the implications for food marketing," in *The Future of Food*, OECD, 1998.

⁷⁴ UNDP, *Human Development Report 1999*: 62.

⁷⁵ Gordon.

⁷⁶ Gordon.

⁷⁷ National Restaurant Association, www.restaurant.org

⁷⁸ UNDP, 1998: 47.

⁷⁹ In 1996, according to UNDP.

⁸⁰ Worldwatch, *Vital Signs 1999*: 150.

⁸¹ Gordon.

growing by about 20% each year.⁸² Nevertheless, this share is projected to remain relatively small and "not likely to become a dominant agricultural production method in the near future."⁸³

For many NGOs, this is not simply an objective business forecast but a self-fulfilling prophecy, considering how industrial agriculture, chemical-intensive production and products are actively promoted by both industry and governments.

One major problem in building an adequate market for organic produce is the higher price, compared with food produced with high chemical inputs. Because of government subsidies to mainstream agriculture, the lack of a large and established market, and other reasons, "ecological or organic agriculture and traditional peasant farming cannot compete with the industrialized agriculture of high-agent usage."⁸⁴

Sales and advertising

In addition to the process of moving food from farm to consumers is the work of moving consumers towards the food. While some food advertising may communicate the nutritional value of bran and fiber-based cereals, the need for calcium and other minerals, its main function is to create brand awareness and to impel a need to buy. In the arena of advertising, sellers aggressively compete for the attention and income of potential buyers. "Advertising is a synonym for Consumer choice," explains Michael Perry, Chairman of Unilever, one of the world's biggest advertisers. "Only by knowing what's available out there can the Consumer exercise his or her right to choose."⁸⁵

However, for the multi-billion dollar advertising industry, with its armies of creative writers, artists, social scientists and strategists, the objective is not to

reveal the possible paths towards a higher quality of life but to win the battle for market share. To distract the targeted demographic segment away from competing messages and instill brand awareness with specific emotional associations. The target is qualified as either those who can pay or who have influence over those with the money. However, "while conspicuous consumption is . . . confined to the well-to-do in developed and developing countries," points out Maria Elena-Hurtado of Consumers International, "even the poor are being sucked into the increasing commercialisation of every sphere of life."⁸⁶

Those who cannot pay, while denied access to the product, are nevertheless a part of the audience for sophisticated media messages disguised to arouse strong desires and feelings of need. Through the medium of advertising, physical objects that might otherwise seem irrelevant become charged with symbolic significance, claiming the power to grant social acceptance, respect, belonging, and love.

While only those who can pay are targeted, most of the world is audience to the messages of advertising -- including the poor and children. Although theoretically consumer demand is supposed to drive the cycle, the

multi-billion dollar industry of advertising is devoted to shaping and stimulating demand, creating desires and perceptions, converting commodities into fantasies, and transforming social and community-based values -- such as status, belonging, respect -- into attributes of brand names and products. For example, McDonald's, among the world's top 20 largest advertisers, teams with Walt Disney Productions using popular cartoon characters to promote fast food cravings in children.

In the 1999 "A Spoonful of Sugar" study of television advertising to children in 13 developed countries, Consumers International shows that much of the advertising -- from companies such as McDonalds, Nestlé, Kellogg's, Mars and Cadbury's -- promotes food high in fat, sugar or salt



⁸² Commission on Sustainable Development, "Sustainable agriculture and rural development: report of the Secretary-General," prepared by the FAO (April, 2000).

⁸³ UN Division for Sustainable Development, "Changing consumption and production patterns: organic agriculture." February 2000.

⁸⁴ Navia, Jose M. Borrero, *The Ecological Dept*, 1994.

⁸⁵ Perry, Michael. "Advertising--the link in the chain of supply and demand," January 24, 1996, at International Advertising Association web page, www.iaaglobal.org

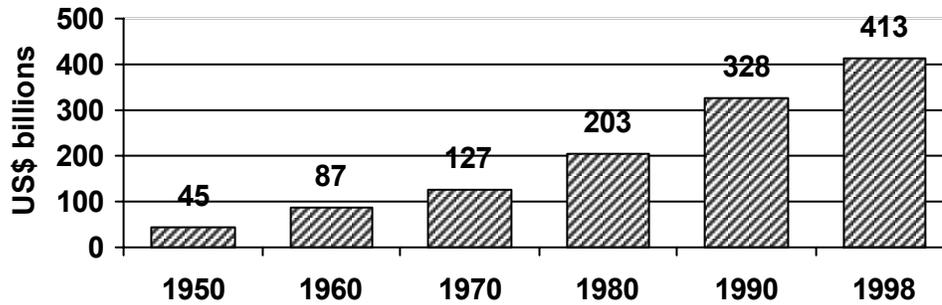
⁸⁶ Hurtado, Maria-Elena. "Creating artificial needs: How advertising drives consumption," in *Consumers and the Environment: Meeting Needs, Changing Lifestyles*, Consumers International, 1997.

antithetical to a healthy, balanced diet.⁸⁷ Most children's advertising is for candies, sweetened breakfast cereals and fast food restaurants.⁸⁸ While regulations of children's advertising are in place in many of these countries, regulatory agencies are lax in attention and enforcement.

desserts, pizza, fried chicken and soft drinks are all big investors in "educating" consumer choice.

While nutritious fruit juice with more than 10-20% of actual juice is difficult to find at the grocery store, high-sugar fruit-flavored beverages and soft drinks

World Advertising Expenditures, 1950-98



Source: Worldwatch, 1999

In addition to often lacking adequate information and education about food nutrition and safety, especially among the poor, consumers are continually faced with the powerful and persistent onslaught of global marketing. Advertising that encourages the shift away from traditional diets of vegetables and grains to nutrition-poor diets high in fat and sugar represents a major obstacle in both developed and developing countries.

In 1998, McDonald's spent US\$ 1.16 billion on advertising, devoting \$209 million to Asia and \$46 million to Latin America, reserving more than half its budget for the United States (\$572 million) in order to make "somebody say McDonald's."⁸⁹ With almost 25,000 restaurants worldwide, McDonald's advertising campaigns support sales in the 5,055 outlets in Asia/Pacific, 1,405 in Latin America, 4,421 in Europe, as well as the 12,472 in the United States.⁹⁰ As to information about "what is available out there," the huge and expanding budgets spent on advertising throughout the world ensure awareness of the availability of junk foods compared to nutritious alternatives. Children, teenagers and parents of children are primary targets. Candy, cakes and

are in superabundance -- as well as persuasive messages placed everywhere to sell them. Coca-Cola spent over US\$ 1.3 billion advertising that it is "the real thing" -- devoting \$269 million of this budget to Latin Americans, \$265 to Asians and \$22.6 million to Africans. The competition is not an international association of fruit juice producers but PepsiCo, which invested only \$705.7 million in ads.

Thus, critical media literacy skills as well as access to nutritional food, adequate education about nutrition, strong consumer information and right to know legislation are all important components in achieving food distribution that serves food security and sustainability. While most of these components may be noted and encouraged by politicians and business leaders, consumers -- both poor and affluent -- more often than not have to actively struggle for these as part of their basic rights.

The food trade

The huge increase of global advertising is an indicator of the rise in global trade. According to one of the more controversial parts of Agenda 21, "trade liberalization should . . . be pursued on a global basis across economic sectors so as to contribute to sustainable development."⁹¹ However, from the viewpoint of Third World Network, "industrial agriculture, coupled with the impetus of international

⁸⁷ Consumers International, www.consumersinternational.org/campaigns/tvads

⁸⁸ Consumers International, "A spoonful of sugar: television food advertising aimed at children." July 1999

⁸⁹ AdAge, February 2000, www.adage.com.

⁹⁰ McDonald's Corporation, *Annual Report 1998*.

⁹¹ Agenda 21, para 2.7.

trade and consumption patterns that strain the planet's natural resources, has also destabilized the social and cultural fabric of farming communities."⁹² This impact is even more dramatic for Southern societies and indigenous peoples.

The trade unions note with irony that "the decade of the most rapid expansion in world trade in history saw a marked drop in access to adequate food by the people producing it."⁹³ The trade unions point out that in developing countries, the debt squeeze has induced governments to produce export crops for foreign exchange to pay off crushing debts." This situation threatens local food security by diverting production from local needs and making production dependent on fluctuating world prices.

The Institute for Agriculture and Trade Policy (IATP) and other NGOs call for the CSD and FAO to develop a methodology to determine the full-costs of production and exports, including externalized environmental costs.⁹⁴ The Worldwide Fund for Nature (WWF) also calls for the CSD to take the lead in developing and implementing "sustainability assessments" of agricultural trade liberalization. In particular, a sustainability assessment working group could then focus on items such as the World Trade Organization's Agreement on Agriculture -- one of the controversial topics at the recent WTO meeting in Seattle. One reason for such an assessment, says WWF, is that increased demand and trade has led to increases in agricultural output at the expense of environment and rural communities. "Agricultural liberalization can also lead," claims WWF, "to an inflow of cheap food imports in a number of developing countries with negative impacts on domestic production and on the livelihood and survival of local farming communities."⁹⁵

In general, NGOs tend to be skeptical of the corporate concentration and control behind the calls for trade liberalization. Setting up a working group on sustainability assessment focused on the impacts of agricultural trade offers a way to address these concerns.

Not buying it: The Nestle Boycott

One type of choice available to consumers is to not buy or consumer a product. When the influence of

⁹² Chee Yoke Ling, NGO discussion paper No. 1.

⁹³ ICFTU et al. "Plough to Plate approaches to food and agriculture." February 2000.

⁹⁴ Suppan, Steve. "Globalization, trade liberalization and investment patterns," NGO discussion paper no.4, February 2000.

⁹⁵ WWF. "Sustainability assessment of agricultural trade liberalization." February 2000.

advertising and sales to influence choice results in harm, as charged in the well-known protest against Nestle's export and marketing of breastmilk substitutes in Africa and other developing countries, consumers have the option of organizing themselves to counteract this influence. The consumer boycott against Nestles represents an important example of the difficulties which consumers and consumer health advocates face competing with the marketing budgets and expertise of large corporations to get the information they need about the food they choose to consume.

Spanning from 1977 to 1984, the Nestle Boycott it is said to be the "largest non-union consumer boycott in history."⁹⁶ It began with church groups and other civil society organizations concerned that "contaminated water, improper labeling and misunderstanding of instructions in regions of high illiteracy were leading to infant malnutrition and deaths."⁹⁷ Very quickly consumers around the world also became concerned and in response stopped buying Nestle products in general.

The consumer boycott quickly took on many characteristics of a war campaign. In response to the boycott, Nestle hired the advertising firm Ogilvy and Mather to conduct research and develop strategies which were apparently described a "proactive neutralization" of the global campaign. Finally, in 1984, the boycott was called off, with Nestle receiving praise from many different quarters for

Table 9 - Top global food advertisers

Rank	Advertiser	Total world spending (US\$ millions)
2	Unilever	3,428.5
3	Nestle	1,833.0
8	Coca-Cola Co.	1,327.3
11	Mars Inc.	1,069.6
13	Philip Morris Cos.	1,980.3
20	McDonald's Corp.	1,164.0
22	Danone Group	588.6
28	Kellogg Co.	705.7
31	PepsiCo	705.7
42	Diageo (Burger King)	917.1
56	Sara Lee Corp.	340.2
65	Bestfoods	220.1
72	Tricon Global Rest.	637.0
73	Cadbury Schweppes	256.3

Source: Advertising Age

what was perceived as their positive change in its marketing policies.⁹⁸ However, after public monitoring revealed Nestle "had broken many of its promises," Nestle's boycott leaders reactivated the campaign in 1988. However, the initial momentum of the boycott was lost and most people today do not know realize the boycott is still active.

The long-term goal, according to one of the leading members of the International Baby Food Action Network (IBFAN), is "to get companies out of the business of actively promoting their formula by organizing consumer pressure against them and by working towards the passage of pro-breastfeeding legislation and policy." As to Nestle, these NGOs lament that "consumers have been hoodwinked, and infant health has declined as a result."⁹⁹ While the visibility and initial success of the boycott demonstrate the power of consumer action, the results indicate the difficulty of taking on a corporation with annual sales of 50 billion dollars.

Delivering the goods

Distribution involves more than simply transporting food from the field and farm to the grocery shelf. In addition to transportation there is the marketing of the product, an activity which includes packaging, advertising, pricing and sales. Trade, tending to dominate the policy discussions, is only one part of the marketing and distribution function -- the selling of goods among rather than within countries. These elements of distribution form the bridge between production and consumption. The problem is when the necessary product does not reach its destination, where the market may be served but not the rest of the planet's hungry and malnourished.

Agricultural production at current levels could feed everyone on the planet, but it does not. Beyond the nutritional minimum requirement of 2,300 calories per day, each person could regularly be provided 2,650 calories.¹⁰⁰ World Resources Institute reports that there is enough food in the world to feed 12% more than the actual population.¹⁰¹ Despite relief efforts, international aid "safety nets" and political commitments to "eradicate poverty," 800 million people remain hungry. At the same time, one-third of

the food wasted each day in the United States could feed 26 million people.¹⁰²

One important lesson from the Green Revolution, explains Food First, is that "increased food production can -- and often does -- go hand in hand with greater hunger."¹⁰³ One example is Asia, where high-yield Green Revolution seeds contributed the greatest successes in increased agricultural production, yet two-thirds of the world's undernourished live. While granaries are overflowing in India because of Green Revolution technology, 5,000 children continue to die each day from malnutrition. While there is more food the poor cannot afford to buy it.

The Green Revolution produced 11% more food over two decades and the number of hungry people dropped 16% -- from 942 million to 786 million. While this appears to indeed be progress, Food First points out that if you take China out of the analysis "the number of hungry people in the rest of the world actually increased by more than 11%, from 536 to 597 million." While more food was produced, the unequal access to food and food-producing resources left more people hungry.¹⁰⁴

⁹⁸ Lydenberg, et al.

⁹⁹ Action for Corporate Accountability.

¹⁰⁰ Paillot, Guy. "The impact of biotechnology on the agro-food sector," in *The Future of Food: Long-term Prospects for the Agro-food Sector*, OECD, 1999.

¹⁰¹ World Resources Institute, *World Resources: 1998-99*: 154.

¹⁰² Economic Research Service, USDA, in *WorldWatch*, May/June 1999, p.39.

¹⁰³ Rosset, Peter; Joseph Collins and Frances Moore Lappe, "Lessons from the green revolution: Do we need new technology to end hunger?" *Tikkun Magazine*, vol. 15, no. 2, March/April 2000.

¹⁰⁴ "In South America, for example, while per capita food supplies rose almost 8 percent, the number of hungry people also went up, by 19 percent. In south Asia, there was 9 percent more food per person by 1990, but there were also 9 percent more hungry people." Rosse, Collins and Lappe.

Completing the cycle

Completing our movement through the production-consumption cycle, we return to the beginning, considering the various ways each element in the cycle contributes to or undermines the goal of achieving sustainable food consumption. Considering the degree of hunger, malnutrition, contamination and overeating and the inadequacy of efforts to change these patterns, we clearly have a long way to go.

Changing unsustainable food consumption patterns is not simply a matter of revising personal behavior, values and knowledge -- though they play a significant part. The causes and solutions are systemic and require systemic thinking and integrative strategies. Thus, "sustainable consumption" has to be seen both in terms of under-consumption as well as over-consumption, and both have to be seen within the context of the system which generates and sustains this situation.

Insufficient and misdirected investment by both the private and public sectors plays a major part, for example through the destructive subsidies given by governments and the corporate lobbies keeping those subsidies in place. Another major cause driving unsustainable food consumption is in the increasing corporate concentration and globalization, gradually eradicating and replacing the family farm with large-scale, chemical-intensive agribusiness, gaining productivity and profit at the expense of sustainability and quality of life. These are aspects of the "crisis of industrial agriculture" -- where more food means more waste but not necessarily an end to hunger and malnutrition. Another obvious factor contributing to unsustainable food consumption is the constant flood of advertising using the latest advances in psychology and media artistry to sell audiences on food that will clog their arteries and increase their chances of obesity, cancer and other illnesses.

Interdependence of problems and solutions

Achieving food security and sustainable food consumption requires changing not just individual consumption patterns but the entire food system. This change requires responsible leadership, policies and action within government and business as well as civil society. This kind of change especially requires looking at the kinds of problems detailed in this paper from a perspective that recognizes the interdependence of problems as well as solutions.

This paper has looked at these problems and issues from a nongovernmental perspective, drawing upon the views and priorities of NGOs throughout the world working in these areas. Part of the job of NGOs -- whether focusing on environmental quality or poverty eradication -- is two-fold to monitor and pressure government and industry to act responsibly, and to help inform, educate and empower citizens and communities in achieving a higher quality of life that is sustainable and just. In achieving sustainability and that higher quality of life, significant changes need to take place throughout the whole cycle of production and consumption.

These changes require qualitatively different thinking and action by people in different but overlapping sectors of society: civil society (i.e., consumers/citizens, NGOs), business and industry, and government. Following are some recommendations for moving forward:

1. Consumers must take personal responsibility for the impacts on themselves and others of their eating and purchasing choices and behavior.

One's role and responsibility as a consumer is intertwined with responsibility as parent, citizen/voter, worker/producer, investor, and other ways in which we have an impact on our neighbors, locally and globally. Each choice -- whether to buy a steak or steal a loaf of bread -- has implications beyond the individual. Thus, individuals must embrace their role and power as members of a community. In democratic societies, voting is a key responsibility for everyone, the results being the political leaders, policies and laws which then shape our daily actions. Of course for those in poverty and without access to food or human rights, the choices are minimal.

2. Consumers, producers and policymakers must take responsibility for informing and educating themselves about the foods they and others are eating.

This includes knowledge about the health impacts of the food being marketed and the impacts of their purchases on ecosystems and other people. Each act of consumption has environmental, social and economic consequences and affects other generations. Individual consumers as well as policymakers must understand these broader consequences of their food purchases and eating habits. Certain requirements apply, such as literacy and availability of meaningful information. For the poor, information and education may be even more difficult to obtain than safe and nutritious food. In some societies access by women to information and education women is not just unavailable but

prohibited. Thus, economic and political constraints are an obstacle, which puts more responsibility on policymakers to take corrective actions.

3. Consumers, producers and policymakers must take responsibility for the impacts of the food system which they are supporting. Consumers, producers and policymakers must understand how the food investment, production and distribution system affects the environment, the health of communities and families perhaps thousands of miles away, and the safety of food workers, as well as on the quality of life for future generations.

Food corporations must especially take responsibility -- or else be held liable -- for the environmental and health damages caused by their operations within this system. Companies must stop externalizing the social and environmental costs of their operations and governments must stop them from externalizing their responsibility for those costs. Governments at meetings such as the Commission on Sustainable Development, must move beyond safe rhetorical statements about the goals of food security and safety and the merits of partnerships, voluntary initiatives and subsidy reform. Such statements need to be turned into actions creating and implementing the necessary policies and policy mechanisms to ensure that companies indeed take responsibility for the social and environmental effects of their investments, production processes, products and marketing campaigns. *For those companies unwilling to be socially responsible, governments must enact the necessary mechanisms to hold these companies accountable for their actions. Political lobbies and pressure by the business community must not be allowed to undercut this accountability.*

Government policymakers must also take the necessary steps to prevent large agribusiness from using its size and economic power to destroy small family farmers, especially those whose livelihoods are oriented towards feeding their own local communities. Trade liberalization -- especially where the benefits mostly go to a small handful of investors -- must not take precedence over community sustainability and quality of life.

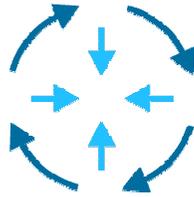
4. Consumers -- in their role as citizens, voters, workers, investors, and neighbors must act to change the policies and priorities of business and government so that these institutions promote and not undermine sustainability and quality of life. Food consumption patterns are ultimately dependent on the patterns of investment, production and distribution by which food is made available.

However, these patterns are also influenced by the actions of workers through their unions, consumers through their purchases and opinions, and citizens through their votes and political pressure on their public representatives. This influence is especially powerful when organized and well-informed, as the Nestle boycott, the campaign against the tobacco industry, and other consumer actions have demonstrated.

While we may expect government and business leaders to be responsible, they are limited by the institutional structures within which they work. Governments are often constrained by pressures from business to promote economic growth and trade, just as businesses are compelled by pressures from competitors and investors to increase their profitability. Thus, individual and collective action by citizens, especially through strategic campaigns and lobbying by citizen organizations is necessary to provide both government and business with the political voice and power of the "consumer" -- especially those consumers who cannot afford the costs of living.

Among other things, *consumption is a political act.* People do not behave in a vacuum; while they are individuals they are also members of a wider interdependent community and ecosystem. Thus, they are responsible not only for their own health and well-being but also that of the larger community in which they live.

5. Agro-business and the rest of the food industry must learn to become truly more socially and environmentally responsible as well as accountable to the communities and societies in which they do business. Rather than simply seeking a better public image through clever public relations and limiting responsible actions only to those cost-saving improvements in efficiency or green product marketing, companies must learn an entirely different way of doing business and measuring "profitability." Through the internalization of externalized costs and the incorporation of full-cost accounting, companies will hopefully measure their success not simply through financial returns to stakeholders or market dominance, but through the social and environmental benefits and returns on investment. That is, food companies must learn to regard "wealth" and "prosperity" not just in terms of money but in terms of their success in improving the quality of life of communities and society. They must learn to not simply be in the business of making money but of making business do good.



A Civil Society Initiative to Monitor Progress
Toward Sustainable Production & Consumption

SPAC Watch (Sustainable Production and Consumption Watch) is a collaborative global assessment by the International Coalition for Sustainable Production and Consumption (ICSPAC).

Drawing upon the experiences, knowledge and insights of civil society organizations and networks from around the world, SPAC Watch reports will examine progress that countries, governments and international institutions have made, as well as identifying the obstacles in achieving the sustainable production and consumption (SPAC)-related commitments made during the 1992 Earth Summit in Rio.

As a contribution to the World Summit on Sustainable Development, a special SPAC Watch global report will be available in 2002 to help provide civil society input, perspectives and recommendations on the actions needed for meaningful change in policies and practices.

If you or your organization is interested in participating or in learning more about SPAC Watch or ICSPAC, please contact us at info@icspac.net or visit our website at www.icspac.net/spacwatch.