

IBON Primer on Food Sovereignty and the Food Crisis



IBON Center

114 Timog Avenue, Quezon City

1103 Philippines

Tel: +633 9377060 to 62 loc 202

Fax: +632 9276981

Website: <http://www.international.ibon.org>

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IBON International



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IBON International

3rd Floor IBON Center
114 Timog Avenue, Quezon City
Philippines 1103

Tel: +632 9277060 to 62 ext. 202
Telefax: +632 9276981
Website: <http://iboninternational.org/>

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I Global hunger in the midst of plenty

In 1986, Francis Moore Lappé and Joseph Collins wrote a book that tried to explode twelve myths about world hunger.¹ Two closely-related food myths tackled in that book are, first, “*There’s not enough food to go around,*” and second, “*There are just too many people for the planet to feed.*” So much evidence has been brought out to prove their falseness. Surprisingly, more than thirty years later, many people are still holding on to some of these myths helped to some degree by increasing population and climate change. Here we aim to review and update the same debate in the context of people’s movements calling for food sovereignty in the early 21st century setting.

1. Is the world producing enough food for its growing population?

Yes, the world is producing more than enough food. The global economy, with all its advances in agricultural and food technology, has the capacity to provide every man, woman and child on the planet with adequate food and nourishment for a healthy and active life. This also holds mostly true even at the country level, considering that most poor countries are in fact net exporters of food.

a. Food production outpaces population growth

Increases in global food production have consistently outpaced population growth in the last 50 years. This is shown in a year-by-year comparison of food and population statistics from United Nations agencies. The world’s population has steadily increased at the average annual rate of 4.59 index points from 1961 to 2009. (See Table 1 and accompanying Figure 1.) Global food production, meanwhile, grew more rapidly at the average annual rate of 6.36 index points in the same period. Computed per capita, global food production also grew in 1961-

¹ Francis Moore Lappe with Joseph Collins. *World Hunger: Twelve Myths*. Grove Press, 1986, 1998.

Box 1. How FAO derives its Food Production Index

A technical note provided by the FAO in its statistical tables on food production explains that the “food production index presents net food production (after deduction for feed and seed) of a country’s agricultural sector relative to the base period 1999-2001. [For this primer, IBON recomputed the index to 1961=100.] The food production index covers all edible agricultural products that contain nutrients; coffee and tea are excluded. For a given year and country, the index is calculated by taking the disposable average output of all food commodities in terms of weight or volume during the period of interest and dividing that year’s output by the average of the 1999-2001 output.

“... Data are available for most countries and regions from 1961 to 2007. The Food and Agricultural Organization of the United Nations (FAO) posted the 2007 updates online in June 2009. ...For a complete discussion of this methodology, please see the ‘FAO Production Yearbook.’”

Source: FAOSTAT 2011b.

2009 at an average 0.83 points annually. (See Box 1 for a FAO note explaining food production index as a statistical device.)

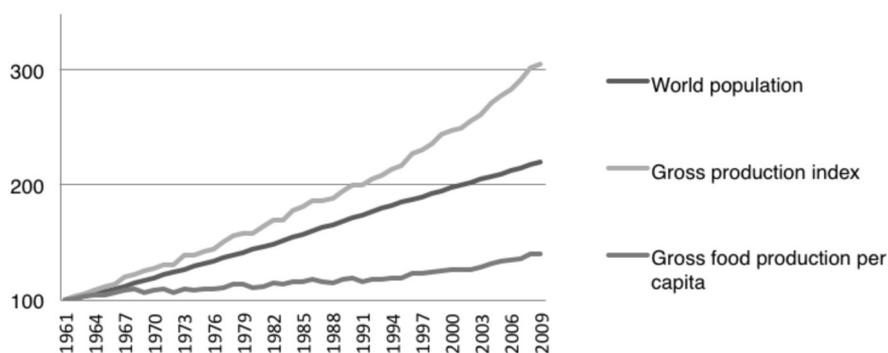
Based on these data, world food production has long surpassed the average minimum energy requirements (MER) for individuals to live healthy and active lives. The World Health Organization (WHO) estimates the average MER per person at between 1,800 and 1,900 kilocalories (kcal) per day.² In the past 50 years, the daily per-capita calorie supply available has already surpassed 2,000 kcal.

In 1961, the daily calorie supply available per person, as a global average, was already 2,254 kcal, or 25% more than daily MER of an average person. This was already the equivalent of three light meals of rice with tuna, soybean, and fruit or vegetable.³ In 2003, the figure rose to 2,809 kcal, or 56% more than the daily MER per person. (See Table 2 and Figure 2.) Theoretically, each man, woman and child living on this planet in this decade should be enjoying a much bigger

2 WHO defines MER for an average person, with due adjustments needed for differences in age, body size, activity level, and specific physiological conditions, and also with due consideration to other non-energy requirements such as proteins, vitamins and minerals.

3 IBON calculations using standard food calorie tables show that two cups or 370g of uncooked rice, 200g of tuna in oil, one cup or 354g of soybeans, and two pieces of banana fruit (or two cups of canned tomatoes) would convert into 2,300 kcal—the 1961 per-capita daily calorie supply available globally—and satisfy the equivalent of three light meals, thus providing the energy, proteins and micronutrients necessary for an adult person’s daily basic subsistence.

Figure 1. GLOBAL FOOD PRODUCTION AND POPULATION, 1961-2009



Sources: FAOSTAT, UN DESA Population Division (with own calculations by IBON)

food supply—nearly three-fifths bigger—than that available to their parents and grandparents in the early 1960s.

Some areas in the various global regions, most notably in Asia, have even performed better than others. In Africa, food production barely kept pace with population growth, while in the Caribbean it fell behind since the early 1990s. (See Figure 3)

Production data across major agricultural product groups have shown similar patterns of unparalleled growth in the past fifty years. Production of cereals, other crops, and livestock has tripled since 1961. Production indices for selected food crop groups, while showing some growth fluctuations, exhibit a generally upward trend—with cereals and vegetables showing the most outstanding increases. (See Figure 4)

Per-capita cereal and meat production also reflect the same general upward trend, despite often deep fluctuations in per-capita cereal production. Cereal and meat are key indicators, as they are basic sources of energy and protein supply, which is the main issue when discussing chronic hunger. (See Figure 5)

b. Sustained food production growth despite negative factors

These gains in food production are even more phenomenal if we consider several negative factors that prevailed in many parts of the world. These include: (1) a

Table 1. GLOBAL FOOD PRODUCTION AND POPULATION INDICES, 1961-2009 (1961=100)

Year	World population (000)*	Population index	Gross food production index**	Gross food production index per capita**
1961	3,093,909	100.0	100.0	100.0
1962	3,150,242	101.8	102.8	101.3
1963	3,208,212	103.7	105.6	102.7
1964	3,268,896	105.7	108.3	104.0
1965	3,333,007	107.7	111.1	104.0
1966	3,400,823	109.9	113.9	106.7
1967	3,471,955	112.2	119.4	108.0
1968	3,545,613	114.6	122.2	109.3
1969	3,620,652	117.0	125.0	106.7
1970	3,696,186	119.5	127.8	108.0
1971	3,772,048	121.9	130.6	109.3
1972	3,848,319	124.4	130.6	106.7
1973	3,924,668	126.9	138.9	109.3
1974	4,000,764	129.3	138.9	108.0
1975	4,076,419	131.8	141.7	109.3
1976	4,151,410	134.2	144.4	109.3
1977	4,225,864	136.6	150.0	110.7
1978	4,300,402	139.0	155.6	113.3
1979	4,375,899	141.4	158.3	113.3
1980	4,453,007	143.9	158.3	110.7
1981	4,531,799	146.5	163.9	112.0
1982	4,612,120	149.1	169.4	114.7
1983	4,694,097	151.7	169.4	113.3
1984	4,777,828	154.4	177.8	116.0

* UN DESA Population Division, World Population Prospects, the 2010 Revision, 2011.

** FAOSTAT, baseline moved to 1961.

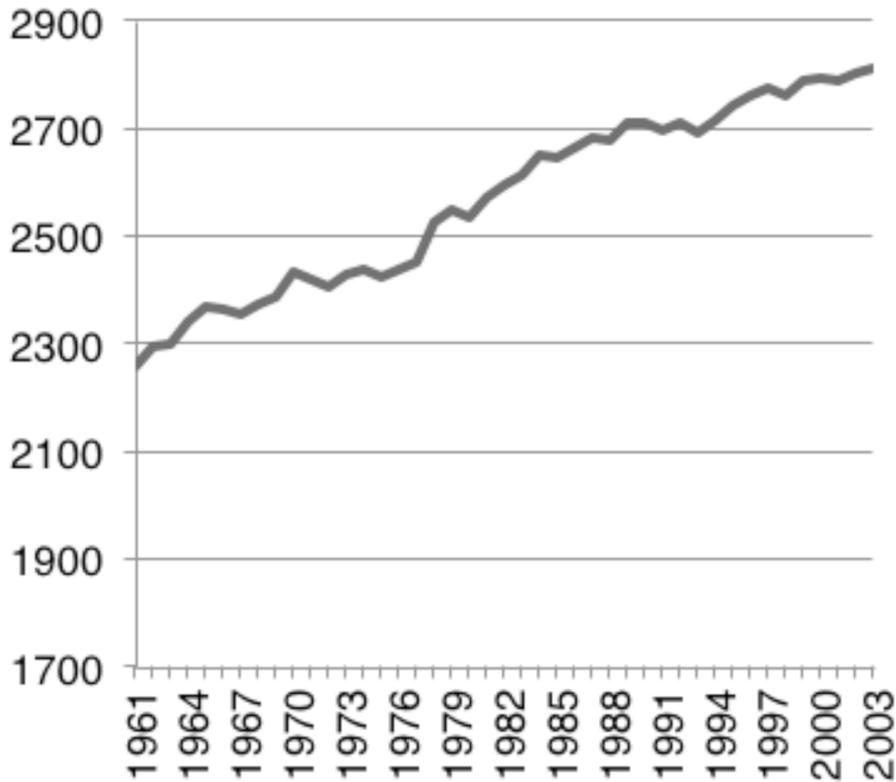
**Table 1. GLOBAL FOOD PRODUCTION AND POPULATION INDICES,
1961-2009 (1961=100) (continued)**

1985	4,863,290	157.2	180.6	116.0
1986	4,950,591	160.0	186.1	117.3
1987	5,039,478	162.9	186.1	116.0
1988	5,129,113	165.8	188.9	114.7
1989	5,218,375	168.7	194.4	117.3
1990	5,306,425	171.5	200.0	118.7
1991	5,392,939	174.3	200.0	116.0
1992	5,478,009	177.1	205.6	117.3
1993	5,561,744	179.8	208.3	117.3
1994	5,644,416	182.4	213.9	118.7
1995	5,726,239	185.1	216.7	118.7
1996	5,807,212	187.7	227.8	122.7
1997	5,887,260	190.3	230.6	122.7
1998	5,966,465	192.8	236.1	124.0
1999	6,044,931	195.4	244.4	125.3
2000	6,122,770	197.9	247.2	126.7
2001	6,200,003	200.4	250.0	126.7
2002	6,276,722	202.9	255.6	126.7
2003	6,353,196	205.3	261.1	128.0
2004	6,429,758	207.8	272.2	132.0
2005	6,506,649	210.3	277.8	133.3
2006	6,583,959	212.8	283.3	134.7
2007	6,661,637	215.3	291.7	136.0
2008	6,739,610	217.8	302.8	140.0
2009	6,817,737	220.4	305.6	140.0

* UN DESA Population Division, World Population Prospects, the 2010 Revision, 2011.

** FAOSTAT, baseline moved to 1961.

Figure 2. WORLD DAILY CALORIE SUPPLY PER PERSON, 1961-2003



Source: WRI EarthTrends

trend for the rural population and agricultural work force to shrink in relation to the total population and total work force, respectively; (2) the substantial lack of net expansion in arable land; and (3) a wide range of environmental problems that lead to land degradation, changes in weather patterns, and decreasing availability of “blue water” sources⁴.

Diminishing ratio of rural populations, agricultural work force. The world’s rural population has grown more slowly as compared to those living in urban areas;

⁴ “Blue water” refers to freshwater which can be collected, pumped and transported. It includes run-off, groundwater, and river and lake water. “Green water” is the water held in the soil and available for nearby plants’ transpiration processes.

the rural-urban ratio recently hit nearly 50% globally. In 1950, 1.80 billion people or more than 71% of the total world population lived in rural areas. Nearly 60 years later, in 2009, the rural population grew to 3.41 billion but this represented just 49.9% of the world's total. (See Table 2) In 1950, the rural-urban ratio was 48:52 in developed countries and 82:18 in developing countries. By 2009, the same ratios were 25:75 in developed countries and 55:45 in developing countries. (See Table 3)

Table. WORLD DAILY CALORIE SUPPLY PER PERSON, SELECTED YEARS

Year	Kcal/person/day
1961	2254
1970	2432
1980	2533
1990	2709
2000	2790
2003	2809

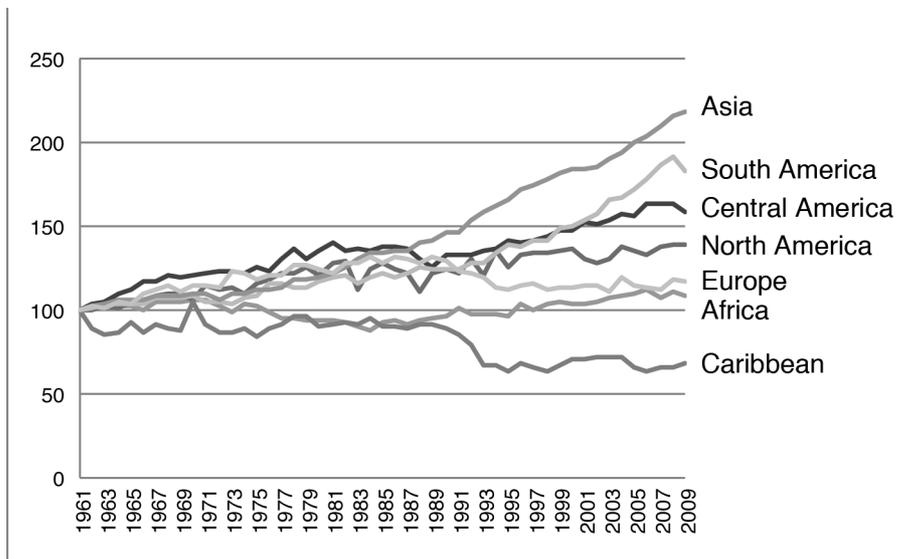
Source: WRI EarthTrends

In a parallel trend, the world's agricultural labor force also grew more slowly in the past 30 years as compared to the total labor force, gradually shrinking from 50.51% in 1980 to just 39.86% in 2010. This trend applies to all global regions, from Africa to Oceania. Numerically, their ranks are still growing globally although at a slower pace, and have actually shrunk in North America and Europe. Of the world's total agricultural labor force of 1.3 billion people in 2010, more than 76% are in Asia alone, and almost 95% are found in Asia and Africa combined. (See Table 4)

Therefore, from year to year, relatively less and less people have engaged in agriculture, even as they produce more and more food to feed not just themselves but a fast-growing non-rural and non-agricultural population. Nevertheless, the farmers and other rural people are still a major economic and social force globally, and particularly in most developing countries of Asia, Africa, Latin America and Oceania.

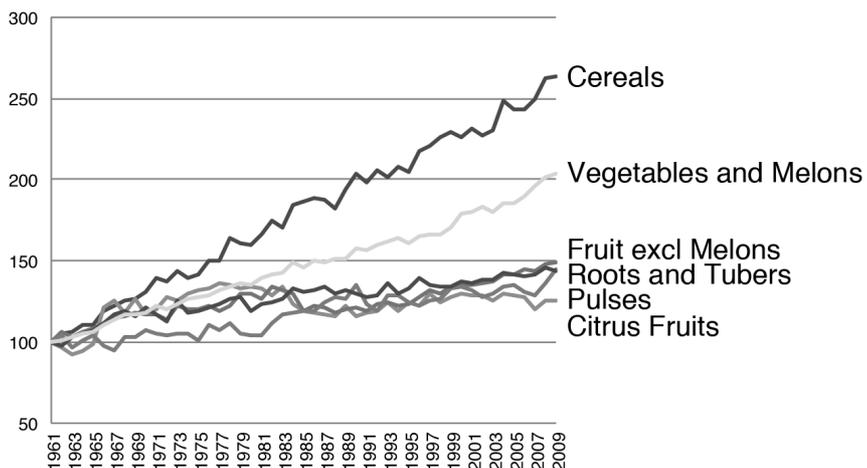
No substantial net increase in world's arable lands. The big food production gains become even more impressive against the backdrop of relatively small changes in total arable land worldwide, which has been fluctuating between 1.380 and 1.392 billion hectares (ha) in 1995-2008. Between 1950 and 1980, total arable land grew by more than 20% worldwide, and grew even faster in the developing

Figure 3. REGIONAL FOOD PRODUCTION INDEX PER CAPITA, 1961-2009



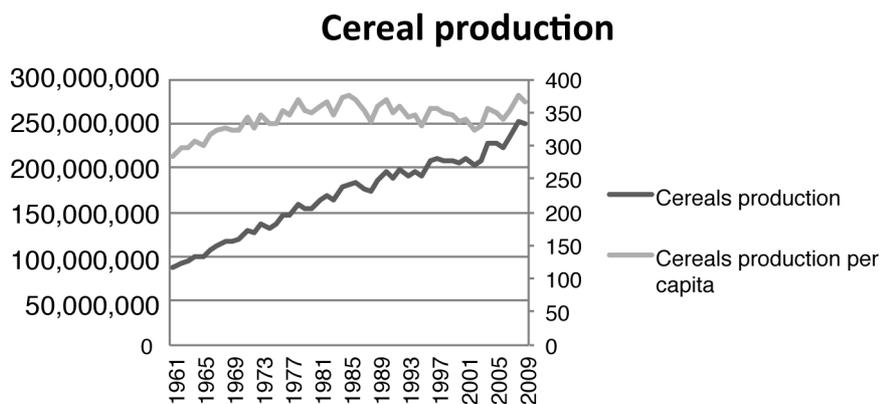
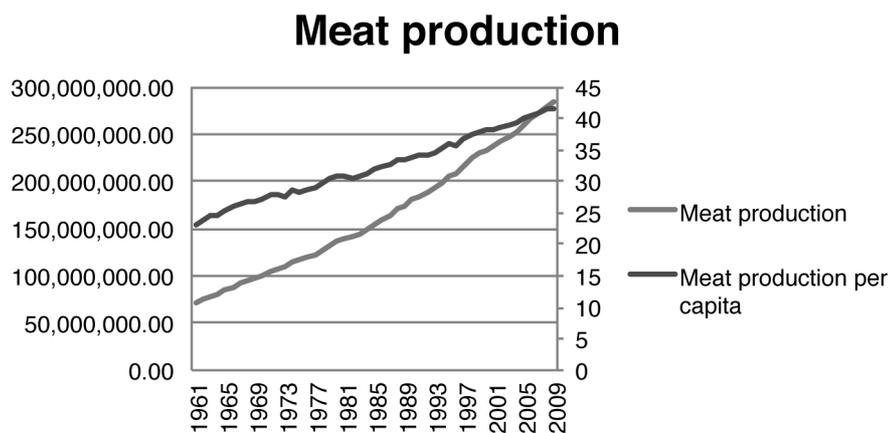
Source: FAOSTAT

Figure 4. PRODUCTIVITY GROWTH IN CROPS, 1961-2009



Source: IBON calculations based on FAOSTAT data

Figure 5. WORLD CEREAL AND MEAT PRODUCTION, 1961-2009 (tons)



Source: FAOSTAT, UN DESA Population Division

countries.⁵ But in the past two decades, it tended to flatline, and has even dipped to lower levels in 1995-2003. (See Figure 6)

Seen at the regional level, we see major differences in the pattern of arable land expansion. The biggest expansion of arable land was in Africa, with a net increase of 30.6 million ha in 1995-2008. But this was more than offset by net decreases of 25.8 million ha in Asia and 16.9 million ha in Europe during the same period. Upward and downward trends in America and Oceania were less marked. (See Table 5)

2. Therefore, has the world solved its problem of chronic hunger?

No. There is universal agreement that the global problem of chronic hunger has not been solved, despite the tremendous gains in global food production, and despite recent indicators showing lower malnutrition rates worldwide.

In many global regions and countries, chronic hunger has remained as bad as in past decades, or has even turned from bad to worse. A quick sampling of statistical figures proves this point⁶:

- Currently, 925 million people do not have enough to eat; 98% of them live in developing countries. (FAO 2011)
- 10.9 million children under five in developing countries die each year. Malnutrition and hunger-related diseases cause six out of 10 deaths.
- Women, who make up a little over half of the world's population, account for over 60 percent of the world's hungry. (UN ECOSOC 2007)
- Over half the world's population and nearly two thirds of the world's hungry people live in Asia-Pacific. (FAO 2011)

⁵ For a quick summary of the growth of arable land in the past 60 years, see <http://www.lewrockwell.com/north/north986.html>

⁶ Sources as cited by "Hunger Stats," World Food Programme website.

Table 2. TOTAL WORLD AND RURAL POPULATION BY COUNTRY GROUPING, 1950-2050 (SELECTED YEARS)

Country Grouping	Population (billion)					Average annual rate of change (%)				
	1950	1975	2009	2025	2050	1950-1975	1975-2009	2009-2025	2025-2050	
	Total Population									
World	2.53	4.06	6.83	8.01	9.15	1.89	1.53	1.00	0.53	
Developed countries	0.81	1.05	1.23	1.28	1.28	1.02	0.48	0.22	-0.01	
Developing countries	1.72	3.01	5.60	6.73	7.87	2.25	1.82	1.16	0.63	
	Rural Population									
World	1.80	2.55	3.41	3.48	2.86	1.39	0.85	0.12	-0.77	
Developed Countries	0.39	0.35	0.31	0.26	0.18	-0.53	-0.35	-1.01	-1.62	
Developing Countries	1.41	2.20	3.10	3.21	2.69	1.77	1.01	0.22	-0.71	

Source: UNDESA Population Division, 2009

Table 3. RURAL POPULATION AS PERCENTAGE OF WORLD POPULATION, 1950-2050 (SELECTED YEARS)

	1950	1975	2009	2025 (est.)	2050 (est.)
World	71.1%	62.8%	49.9%	43.4%	31.2%
Developed countries	48.1%	33.3%	25.2%	20.3%	14.0%
Developing countries	82.0%	73.1%	55.4%	47.7%	34.2%

Source: IBON calculations based on UNDESA Population Division, 2009

**Table 4. WORLD'S AGRICULTURAL LABOR FORCE, 1980-2020
(SELECTED YEARS)**

Region	Year				
	1980	1990	2000	2010	2020
Agricultural labor force (population in thousand)					
World	961,280	1,146,983	1,236,220	1,307,133	1,324,035
Africa	118,114	144,640	177,318	214,576	260,007
N. America	4,727	4,201	3,474	2,842	2,263
S. America	42,294	42,556	43,518	41,546	37,871
Asia	734,723	902,739	979,934	1,023,247	1,004,734
Europe	59,436	50,377	29,186	21,689	15,438
Oceania	1,986	2,470	2,790	3,233	3,722
Share of agricultural labor force in region's total labor force (%)					
World	50.51%	48.15%	44.08%	39.86%	35.99%
Africa	68.35%	62.99%	57.87%	53.17%	48.70%
N. America	3.76%	2.88%	2.11%	1.57%	1.18%
S. America	33.61%	25.42%	19.18%	14.79%	11.73%
Asia	65.76%	62.21%	56.11%	50.42%	44.73%
Europe	16.91%	13.43%	8.46%	5.92%	4.26%
Oceania	19.76%	19.21%	18.60%	17.52%	17.29%
Share of region's agri. labor force in world's agricultural labor force (%)					
World	100.00%	100.00%	100.00%	100.00%	100.00%
Africa	12.29%	12.61%	14.34%	16.42%	19.64%
N. America	0.49%	0.37%	0.28%	0.22%	0.17%
S. America	4.40%	3.71%	3.52%	3.18%	2.86%
Asia	76.43%	78.71%	79.27%	78.28%	75.88%
Europe	6.18%	4.39%	2.36%	1.66%	1.17%
Oceania	0.21%	0.22%	0.23%	0.25%	0.28%

Source: FAOSTAT with IBON's own calculations

Box 2. THE VARIOUS ASPECTS OF HUNGER

Malnutrition – A broad term for a range of conditions that hinder good health, caused by inadequate or unbalanced food intake or from poor absorption of food consumed. It refers to both **undernutrition** (prolonged low levels of food intake and/or low absorption of food consumed) and **overnutrition** (excessive food intake in relation to energy requirements).

Undernourishment – In common usage, this term is used interchangeably with undernutrition. In strict usage, it is a standard adopted by the UN FAO to help measure a country's ability to gain access to food; numerical values for the prevalence of undernourishment is normally derived from Food Balance Sheets prepared by the UN Food and Agriculture Organization (FAO).

Two basic types – There are two basic types of malnutrition.

- The first and most important is **protein-energy malnutrition**—the lack of enough energy (which all of the basic food groups provide, and measured in calories) and the lack of enough protein (from meat and other sources) that is needed for key body functions and tissue maintenance. This is the type of malnutrition that is referred to when world hunger is discussed.
- The second type of malnutrition, also very important, is **micronutrient (vitamin and mineral) deficiency**. This is not the type of malnutrition that is referred to when world hunger is discussed, though it is certainly very important. Iron deficiency and iodine deficiency are two examples of micronutrient deficiency that have an impact on public health worldwide.

Sources: FAO Hunger Portal(<http://www.fao.org/hunger/en/>); WFP Hunger Glossary (<http://www.wfp.org/hunger/glossary>); Wikipedia (<http://en.wikipedia.org>); World Hunger Education Service (<http://www.worldhunger.org>)

a. What is chronic hunger, and what are its main indicators?

Hunger pangs are a routine sensation, indicating a normal phase in the body's metabolic cycle and showing up as the desire to eat. It is merely “the body's way of signalling that it is running short of food and needs something to eat.”⁷

But a continuous physical state of hunger called **chronic hunger** or **malnutrition**, or more specifically **undernutrition** (also called **undernourishment**), is an abnormal condition. (See Box 2 for more specific definitions.) Since chronically hungry people are continually deficient in food and nutrients, they are prone to general weakness, nutrition disorders and weak immune systems, making them

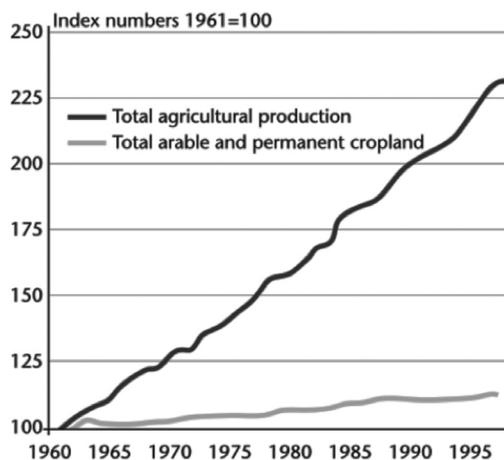
7 Quoted from the World Food Programme's “Hunger Glossary.”

Table 5. WORLD TOTAL AREA, ARABLE LAND AND LAND UNDER PERMANENT CROPS

Year	Total area (million ha)	Arable land (million ha)	Land under permanent crops (million ha)	Arable land over total area (%)
WORLD				
1995	13,435.0	1,392.7	127.9	10.4
2000	13,439.2	1,382.3	132.1	10.3
2005	13,439.3	1,391.8	142.2	10.4
2008	13,459.3	1,380.5	146.2	10.3
AFRICA				
1995	3,031.5	192.2	23.7	6.3
2000	3,031.5	196.7	25.0	6.5
2005	3,031.5	213.7	27.3	7.0
2008	3,031.5	222.8	28.1	7.3
ASIA				
1995	3,196.8	496.1	57.5	15.5
2000	3,196.7	485.2	60.5	15.2
2005	3,196.7	482.8	68.0	15.1
2008	3,196.8	470.3	71.0	14.7
AMERICA				
1995	4,050.7	368.4	28.5	9.1
2000	4,055.1	363.7	28.5	9.0
2005	4,055.1	366.6	29.3	9.0
2008	4,075.1	365.4	29.8	9.0
EUROPE				
1995	2,299.9	293.9	16.9	12.8
2000	2,299.8	287.4	16.7	12.5
2005	2,299.8	278.4	16.2	12.1
2008	2,299.9	277.0	15.9	12.0
OCEANIA				
1995	856.1	42.1	1.2	4.9
2000	856.1	49.3	1.4	5.8
2005	856.1	50.3	1.4	5.9
2008	856.1	45.0	1.5	5.3

Source: FAOSTAT 2010, p. 105

Figure 6. TRENDS IN AGRICULTURAL PRODUCTION AND CROPLAND AREA, 1961-1998



Source: Holmes 2001, 2.

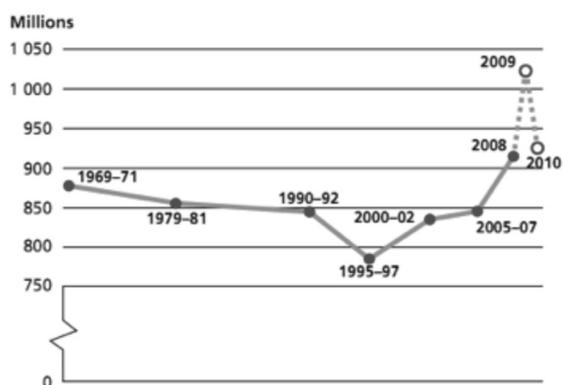
more vulnerable to disease, infections and other disabilities. They are also slower to recover from illness.

The World Hunger Education Service (WHES) restates a common medical fact: “Undernutrition magnifies the effect of every disease.” The percentages of cases worldwide where malnutrition is an underlying cause are markedly high for diarrhea (61%), malaria (57%), pneumonia (52%), and measles (45%). (WHES 2011) Malnutrition in the form of micronutrient deficiency, also called “hidden hunger,” is particularly prevalent. For example, iron-deficiency anemia is the most widespread nutritional disorder, affecting 2 billion people or over 30% of the world’s population, including significant numbers from industrialized nations. (WHO n.d. “Nutrition”)

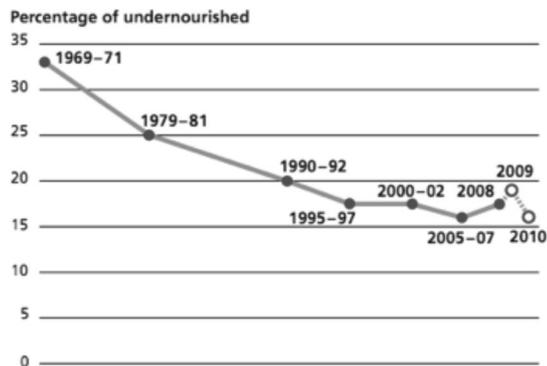
Chronic hunger, it must be emphasized, is not merely a health issue affecting individuals. Rather, it exists as a social condition and a public concern since it debilitates entire households, entire communities, and sometimes wider territories, especially under conditions of mass poverty or mass deprivation due to famines, disasters and wars.

Figure 7. NUMBER OF UNDERNOURISHED PEOPLE IN THE WORLD, PROPORTION OF UNDERNOURISHED PEOPLE IN DEVELOPING COUNTRIES, 1969-71 TO 2010

Number of undernourished people in the world, 1969-71 to 2010



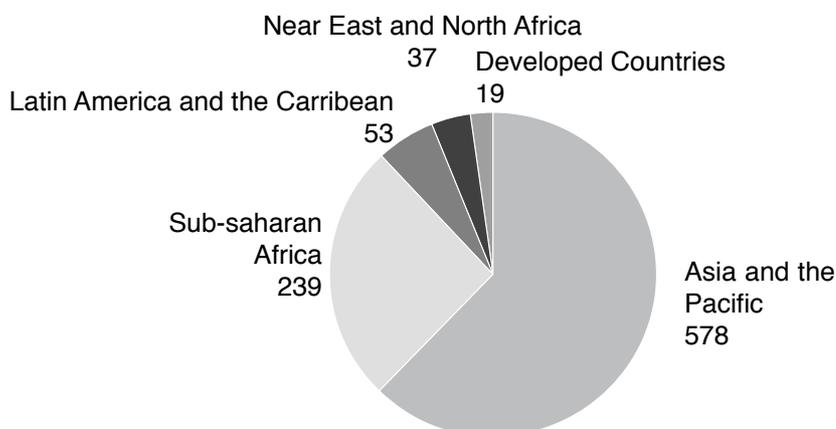
Percentage of undernourished people in developing countries, 1969-71 to 2010



Note: Figures for 2009 and 2010 are estimated by FAO with input from the United States Department of Agriculture, Economic Research Service

Source: FAO

Figure 8. WORLD HUNGER IN 2010, BY REGION (millions)



Source: FAO, State of Food Insecurity 2011

b. What is the state of chronic hunger in the various global regions today?

Chronic hunger remains at a high level worldwide despite the theoretical availability of sufficient food. Malnutrition rates generally tapered downward from the 1960s to the first half of 1990s. Then they worsened in the mid-1990s and remained at high levels in 2000-2007, followed by a severe upward spike reflecting the impact of the global food crisis in 2008-2009. (See Figure 7; see also Table 6.)

Between 1995 and 2005, the number of chronically hungry in developing countries increased at a rate of almost 5 million per year—from 800 million to 852 million. (Windfuhr and Jonsén, 2005, xi) As of 2010, there were an estimated 925 million malnourished people worldwide; 98% of them live in developing countries, with the biggest bulk in the Asia-Pacific and sub-Saharan Africa regions. This number is more than the combined population of the US, Canada, and the European Union. (See Figure 8.)

According to FAO, the malnutrition prevalence rates in 2000-2007 ranged from 13% to 14% as worldwide average and from 16 to 17% in the developing regions. In the same period, malnutrition rates were very high in certain regions: 51-55% in middle Africa, 35-40% in eastern Africa, 22-24% in the Caribbean, and 20-21% in southern Asia. (FAOSTAT 2010, 105)

Table 6. WORLD HUNGER STATISTICS

Country Groups	Number of undernourished persons (millions)					Prevalence of undernourishment in total population (%)				
	1990- 1992	1995- 1997	2000- 2002	2006- 2008	1990- 1992	1995- 1997	2000- 2002	2006- 2008		
World	848.4	791.5	836.2	850.0	16	14	14	13		
Developed Regions	15.3	17.5	15.4	10.6	-	-	-	-		
Developing Regions	833.2	774.0	820.8	839.4	20	17	17	15		
Least Developed Countries	211.2	249.4	244.7	263.8	39	41	35	33		
Landlocked Developing Countries	90.2	101.6	102.5	98.3	34	34	31	26		
Small Island Developing States	9.6	10.9	9.7	10.7	23	24	20	21		
Africa	170.9	193.6	203.3	223.6	26	26	24	23		
—Northern Africa	5.0	5.4	5.6	6.1	-	-	-	-		
—Sub-Saharan Africa	165.9	188.2	197.7	217.5	31	31	29	27		
Latin America and the Caribbean	54.4	53.4	50.8	47.0	12	11	10	8		
—Caribbean	7.7	8.9	7.4	8.3	25	28	22	23		
—Latin America	46.7	44.5	43.4	38.6	11	10	9	7		
Asia	607.1	526.2	565.7	567.8	20	16	16	15		
—Caucasus and central Asia	10.9	9.2	12.4	6.7	16	13	17	9		
—Eastern Asia	215.6	149.5	141.8	139.4	18	12	10	10		
—Eastern Asia - excluding China	5.5	7.9	9.0	9.8	8	11	13	13		
—Southern Asia	267.5	269.0	307.9	330.1	22	20	21	20		
—Southern Asia - excluding India	90.5	101.9	99.9	105.5	26	26	23	22		
—South-Eastern Asia	105.8	86.0	89.6	77.4	24	18	17	14		
—Western Asia	7.4	12.5	13.9	14.2	6	8	8	7		
Oceania	0.7	0.8	1.0	1.0	12	11	13	12		

Source: FAOSTAT 2010, p. 105

Box 3. MALNUTRITION AMONG CHILDREN: STUNTING, UNDERWEIGHT, AND WASTING

Stunting – This measure reflects shortness-for-age. Considered by WHO as the “best indicator” of chronic malnutrition among children, it is calculated by comparing the height-for-age of a child with a reference population of well nourished and healthy children. According to the UN Standing Committee on Nutrition’s 5th Report on the World Nutrition Situation (2005), almost one third of all children are stunted.

Underweight – This is measured by comparing the weight-for-age of a child with a reference population of well nourished and healthy children. A WHO study in 2004 estimated that the deaths of 3.7 million children aged less than five are associated with the underweight status of the children themselves or their mothers.

Wasting – This measure reflects a recent and severe process that has led to substantial weight loss in children, usually associated with starvation and/or disease. Wasting is calculated by comparing weight-for-height of a child with a reference population of well nourished and healthy children. Wasting as a measure of malnutrition is often used to assess the severity of emergencies because it is considered as a strong predictor of mortality among children under five. According to the UNICEF, there were 24 developing countries with wasting rates of 10 per cent or more in 2000-2006, “indicating a serious problem urgently requiring a response.”

Sources: “Hunger Glossary”, WFP; Comparative Quantification of Health Risks, WHO 2004; “Progress for Children,” UNICEF 2007.

During the food crisis of 2008-09, the global malnutrition rate shot up to nearly 20%, as can be seen in Figure 7.⁸

c. What are the various impacts of chronic hunger in the world today?

The most direct and urgent impact of chronic hunger is on the health of poor people who comprise the bulk of the malnourished, and on the condition of their dependents and other members of their households. At the same time, the wide extent and persistence of chronic hunger aggravate still other health, economic and social problems that affect entire communities and wider territories.

⁸ World data of the food crisis’ impact for more recent years are not available, however, since FAO has decided to review its statistical methodology and has not updated or provided estimates from 2009 onwards. (See Box 4 on FAO statistical methodology and limitations.)

Table 7. HEALTH IMPACTS OF MALNUTRITION ON CHILDREN									
Region	% of under-fives (2003-2009) suffering from				Under-5 mortality rate ^a		Infant mortality rate ^b		Neo-natal mortality rate
	Under-weight (moderate and severe)	Under-weight (severe)	Wasting (moderate and severe)	Stunting (moderate and severe)	1990	2009	1990	2009	2009
AFRICA	20	6	9	40	165	118	102	75	34
Sub-Saharan Africa	22	7	9	42	180	129	109	81	37
Eastern and Southern Africa	21	6	7	44	166	108	103	69	32
West and Central Africa	23	8	10	40	199	150	118	92	40

Source: UNICEF, The State of the World's Children 2011

Notes:

- Under-5 mortality rate indicates probability of dying under age 5 years, per 1,000 live births during a certain period.
- Infant mortality rate indicates probability of dying by age 1, per 1,000 live births.
- Neonatal mortality rate is the number of deaths during the first 28 completed days of life, per 1,000 live births in a given year or period.
- For definitions of underweight, stunting and wasting, see Box 3.

Table 7. HEALTH IMPACTS OF MALNUTRITION ON CHILDREN (continued)

Middle East and North Africa	14	5	10	31	77	41	57	32	19
ASIA	27	13	17	35	87	50	63	39	25
South Asia	42	15	19	48	125	71	89	55	35
East Asia and Pacific	11	-	-	22	53	26	40	21	14
LATIN AMERICA AND CARIBBEAN	4	-	2	14	52	23	41	19	11
CEE/CIS	4	1	3	16	51	21	42	19	11
Industrialized countries	-	-	-	-	10	6	8	5	3
Developing countries	22	9	12	34	99	66	68	47	26
Least developed countries	28	9	11	44	178	121	112	78	37
WORLD	22	9	12	34	89	60	62	42	24

Source: UNICEF, The State of the World's Children 2011

Notes:

- a. Under-5 mortality rate indicates probability of dying under age 5 years, per 1,000 live births during a certain period.
- b. Infant mortality rate indicates probability of dying by age 1, per 1,000 live births.
- c. Neonatal mortality rate is the number of deaths during the first 28 completed days of life, per 1,000 live births in a given year or period.
- d. For definitions of underweight, stunting and wasting, see Box 3.

Table 8. PERCENTAGE OF CHILDREN UNDER FIVE WHO ARE UNDERWEIGHT, BY AREA OF RESIDENCE

Region	Urban (%)	Rural (%)	Ratio of rural to urban
Latin America and the Caribbean	3	7	2.6
East Asia and the Pacific	4	10	2.4
Sub-Saharan Africa	15	25	1.7
Middle East and North Africa	8	12	1.5
South Asia	33	45	1.4
Developing countries	14	28	2.0

Source: UNICEF, Progress for Children 2010

Malnutrition's impact on children

Children's physical development is still too incomplete, especially during the first five years, and requires rapid growth needing tremendous amounts of nutrients. They are thus the most affected by chronic hunger—apart from being its most visible victims as depicted by wasting African babies in posters and media.

Malnourished children especially under five are more vulnerable to life-threatening, irreversible, chronic or long-term health problems. Some 10.9 million deaths among under-five children are recorded in developing countries each year.⁹ Of these, about 60% are caused by malnutrition and hunger-related diseases. Malnutrition among pregnant and nursing mothers is one of the biggest causes of neonatal mortality (infant death within the first four weeks of life). It is also an underlying cause for learning disabilities and mental retardation among children.

Under-5 and infant mortality rates have gradually gone down since 1990, but a big gap remains between developed and developing countries. In 2009, the under-5 and infant mortality rates in the developing countries were 66 and 47 per 1,000 live births, respectively, while the equivalent figures in the industrialized countries were 6 and 5, respectively. (See Table 7.)

⁹ Figure cited by the World Bank in a 2000 study. The UNICEF's State of the World's Children 2011 report gives an under-five mortality rate of 66 deaths per 1,000 live birth (UNICEF 2011).

Within developing countries, child malnutrition remains worse in rural areas than in urban areas. The incidence of underweight among children under five is twice more common in rural areas (28%) than in urban areas (14%). Even among urban children under five in some regions and countries, the underweight incidence remains at worrisome levels, such as in South Asia (33%) and sub-Saharan Africa (15%). (See Table 8.)

Malnutrition's impact on women

Malnutrition also has distinct impacts on women, based on their higher energy, protein, and other nutritional needs as required by distinctly female reproductive processes (menstruation, pregnancy, childbirth, and lactation). Their typical status under patriarchal society, such as heavier work or longer hours in agricultural tasks, wood-gathering, fetching water, food preparation and other household chores, apart from child-minding, also increases their nutritional needs.

Pregnant women require almost an additional 285 kcal per day, while lactating women require an additional 500 kcal per day. Their micronutrient needs are also higher, including adequate intakes of iron, folate, vitamin A and iodine to ensure the health of both mother and infant. (UNICEF 2009, 24) Yet a UNDP estimate concedes that iron deficiency, the most common micronutrient deficiency in the world today, affects more women (42%) than men (25%), and affects 48% of children under two years.

The intricately-connected health of mothers and newborns are both affected by malnutrition. A 2009 UNICEF report notes that low birthweight, which is related to maternal malnutrition, is a causal factor in 60–80% of neonatal deaths. (Lawn et al. 2005, 895) In what FAO has termed the “intergenerational reach” of hunger, malnourished mothers will beget malnourished children who, if they survive, “are likely to become disadvantaged adults . . . , face health and productivity constraints, and thus be faced with the chronic burdens of poverty. In sum, hunger begets hunger.”

(See also Table 9 below for a UNDP-developed typology of malnourished populations.)

3. How is chronic hunger related to poverty?

“Many people are hungry because they are poor.” This is a blunt and simplistic way of explaining the root causes of chronic hunger, which is indeed intertwined with the multi-faceted conditions of poverty. Most governments, global and regional

Box 4. FAO STATISTICS ON GLOBAL HUNGER

How is FAO involved in monitoring world hunger?

The 1996 World Food Summit (WFS) issued a call to reduce by half the number of undernourished people by the year 2015. This was followed by the Millennium Declaration (MD) in 2000, which integrated hunger and poverty reduction by setting the MDG target of “halving, between 1990 and 2015, the proportion of people who suffer from hunger” (target 1.C).

To monitor progress towards the WFS and MDG, FAO has been estimating and regularly updating the number and proportion of population below the minimum level of dietary energy consumption (MDG indicator 1.9). Such estimates, produced at global, regional and country level, are presented annually in the FAO State of Food Insecurity in the World (SOFI) report, which was first issued in 1999.

How does FAO estimate the number of hungry people worldwide?

FAO estimates on malnutrition are based on statistical aggregates. It first estimates the total food supply of a country and derives the average per capita daily food intake from that. The distribution of average food intake for people in the country is then estimated from surveys measuring food expenditure. Using this information, and minimum food energy requirements, FAO estimates how many people are likely to receive such a low level of food intake that they are undernourished.

Methodological framework

FAO methodological framework for estimating the prevalence of undernourishment consists of a frequency distribution of individual food consumption (expressed as dietary energy) and a cut-off point for intake inadequacy defined on the basis of minimum requirement norms. The population with food consumption below the minimum energy requirement is considered underfed or food deprived.

The cut-off point, which is the minimum level of dietary energy requirement, is estimated according to the guidelines set forth in the 2001 FAO/WHO/UNU Expert Consultation, which established energy standards for different sex and age groups performing sedentary physical activity and with a minimum acceptable body weight for attained heights.

The average food available for human consumption (Dietary Energy Supply, DES) is derived from the Food Balance Sheets, which are regularly prepared and updated by FAO and available for nearly all the countries.

Why hasn't the FAO published any hunger statistics published for 2011?

According to FAO, the reason has to do with reviewing its methodology to handle the recent influx of large household surveys. “During its meeting in 2010, the Committee on World Food Security (CFS) asked FAO to review its methodology for estimating undernourishment in order to provide more timely updates and incorporate all relevant information, including analysis of the large number of household surveys that have become available in recent years. Therefore, no updated estimates for the number of undernourished people in 2009 and 2010 are reported, nor has an estimate been made for 2011.” Source: <http://www.fao.org/hunger/en/>

The latest FAO hunger statistics available are for the period 2006-2008. These can be accessed at <http://www.fao.org/economic/ess/ess-fs/en/>.

Sources: World Hunger Education Service 2011, FAO Hunger Portal, FAOSTAT n.d., “Food security methodology.”

multilateral bodies, civil society and other development actors have accepted this. In fact, the UN system has adopted the eradication of extreme poverty and hunger as its topmost Millennium Development Goal (MDG), and drastic reductions in other indicators of poverty as among its other MDGs.

The most obvious conditions of poverty are the lack of the most basic means for the sustained survival and well-being of people—such as adequate food and water, shelter, clothing, health care and basic education. These in turn are clearly linked to the lack of adequate income, employment or other livelihood sources—key factors in the core definition of poverty that is now officially accepted by the UN and its constituent member-states and agencies.

Indeed, a “typology of hungry and undernourished populations” developed by an UN Millennium Project-commissioned study shows the tight correlation between chronic hunger and the various modes of poverty in rural and urban areas. (Scherr 2003, 15) Table 9 below, derived from that study, classifies and quantifies the sectors of people suffering from malnutrition, most of them found at or near the bottom of the social pyramid especially in developing countries:

- Low-income farm households – 400 million (50% of total malnourished population)
- Rural landless and low-income non-farm households – 176 million (22% of total)
- Poor herders, fishers, forest people dependent on community or public resources – 64 million (8% of total)
- Low-income urban households – 160 million (20% of total)

Although the study attempts to further trace cause-and-effect relationships between hunger and economic conditions, its analysis doesn't go deep enough. Hunger is linked to poverty; but what are the root causes of poverty? Clearly, this question must lead to a wider and deeper analysis of current social structures and economic systems.

Table 9. TYPOLOGY OF HUNGRY AND UNDERNOURISHED POPULATIONS

	Principal causes of hunger/malnutrition	%/# of undernourished	Distribution in developing countries	Geographic 'hotspots'
CLASS OF FOOD-INSECURE				
Low-income farm households	Increased production pressure on low-productivity, high-risk or degraded lands; remoteness from markets; poor market institutions	50% of total (400 million)	Of 633-million rural poor in higher-risk environments; 355-million rural poor in favoured lands (includes farm and non-farm households)	Drylands: Sahel, southern Africa, south Asia, N.E. Brazil; Mountains: Meso-america, Andes, E. Africa, Himalayas, SE Asia
Rural landless and low-income non-farm households	Inadequate income; weak social networks; lack access to productive resources; lack of employment	22% of total (176 million)	Of 437 million rural non-agric. people, probably 150-200 million are poor; number of poor landless farm workers hard to calculate	Asia, Central America
Low-income urban households	Inadequate income to purchase food; weak social networks, low productivity, wages	20% of total (160 million)	25% of the poor are urban; urban under-nutrition rates seem to be lower than rural in the largest countries	China, India, Zambia

Source: Scherr 2003, 15

Table 9. TYPOLOGY OF HUNGRY AND UNDERNOURISHED POPULATIONS (continued)

	Principal causes of hunger/ malnutrition	%/# of undernourished	Distribution in developing countries	Geographic 'hotspots'
Poor herders, fishers, forest-people dependent on community or public resources	Pressure on natural resources; pollution; disruption of resource flows; loss of local rights	8% of total (64 million)	25 million pastoralists; 60 million fishers; 250 million forest-dependent	Drylands: Africa, lowland Asia; forests: Amazonia, Himalayas, SE Asia
CROSS-CUTTING ABOVE GROUPS				
Pregnant and lactating women	Added dietary needs for pregnancy and breastfeeding, inadequate food and micronutrient intake	Several hundred million	60% of women in South Asia; 40% in Southeast Asia are undernourished	South Central Asia, Southeast Asia
Newborn infants	Inadequate fetal nutrition due to maternal malnutrition	30 million	Infants born undernourished; 11% of developing country births; 21% SE Asia	South Central Asia, Southeast Asia
Children under 5 years	Inadequate child care, poor feeding practices, infectious disease, poor water, low status of women	170 million	33% of under-5 children are malnourished; malnutrition a factor in 5 million child deaths per year	East Africa, South Central Asia, West Africa, Southeast Asia

Source: Scherr 2003, 15

Table 9. TYPOLOGY OF HUNGRY AND UNDERNOURISHED POPULATIONS (continued)

	Principal causes of hunger/ malnutrition	%/# of undernourished	Distribution in developing countries	Geographic 'hotspots'
Victims of extreme events (natural disasters, war and civil conflict, economic crises)	Disruption of food systems, loss of assets; aid not delivered, low farm investment	60 million	60+ million in 2002 (range 52 to 67 million, 1999-2002); 12 million refugees, 25 million displaced people	Recent victims in Sahel, Horn of Africa, southern Africa
HIV/AIDS and other adult disabilities	Inability to produce or access food; increased dependency ratio; depleted social networks	36 million infected	25 million in Sub-Saharan Africa; 150 million people affected by sick family member	Sub-Saharan Africa, but moving to Asia
Micronutrient-deficient individuals (includes at least 1.2 billion not otherwise under-nourished)	Teenage girls and women (iron); nutrient-deficient diets/ soils; lack of sunlight; lack of protein, fruit, vegetables	2 billion people	*Vit A: 100-140 million children *Iodine: 1.6 billion *Iron: 42% of women, 25% men, 48% of children under 2 years	Widely distributed

Source: Scherr 2003, 15

4. What other factors intensify chronic hunger?

Extreme poverty, especially in the form of widespread chronic hunger in a world overflowing with food, is among the most blatant symptoms of deeper structural problems in society—both within countries and among countries.

But such deprivation of basic human needs on large scales is also intensified by other factors. For example, armed conflicts, natural disasters, and economic and financial catastrophes also result in physical and economic disruptions, leading to mass destitution usually coupled with failure of public services. These even combine in complex ways to aggravate pre-existing poverty and enlarge its scope.

a. Economic and financial crises

Economic and financial crises, which are ultimately the result of the same structural problems at the root of chronic hunger, also generate their own chain reactions that worsen this chronic hunger in various ways. As the world had seen in 1997 and more recently in 2008, such sudden downturns in economic growth and collapse of speculative bubbles can ricochet across the global economy, multiplying the initial damage and prolonging the crises. Along with the 2008 financial crisis came shortages, high prices, and price volatility in food and fuel; job layoffs and depressed wages that reduced people's buying capacity; and budget cuts that further weakened basic services. The hardest hit were poor people, who had to cut back on their family budgets for food, daily fare, education and healthcare, or even forced to sell some assets.

b. Armed conflicts

In many armed conflicts, a military force often employs the deliberate use of hunger as a weapon particularly against a rural-based guerrilla movement by seizing or destroying food stocks, livestock, sources of potable water, and food-producing facilities; by imposing food blockades on rebel territories; and by misusing food relief. Extended fighting within a territory disrupt normal community life and farming cycles; the local population flees or are forced into refugee camps, where they suffer acute food and water shortages, apart from other forms of severe destitution. Due to the economic and social disruption, the food emergency may extend for years even when the fighting has already stopped. (WHES n.d.)

c. Environmental and other natural disasters

Overexploitation of natural resources and abuse of technologies, which have accelerated since the 20th century, have degraded or destroyed entire

ecosystems—as can be seen in wide swaths of deforested, eroded and desertified lands, poisoned water sources, and depleted soils and fisheries all over the world. Furthermore, unabated CO₂ emissions have worsened climate change—as can be seen in catastrophic changes in weather patterns. All these combine to continually debilitate agriculture and food systems in many parts of the world.

In recent years, for example, extended and extensive droughts and floods have led to repeated crop failures, livestock losses, and destruction of food stocks and food production facilities, as has happened in Africa, China, and South Asia. In addition, major disasters affecting wide territories have also displaced communities and generated refugee movements, resulting in food emergencies.

d. Colonial legacy of food deprivation

The three factors mentioned above—wars, disasters, and economic crises—have been in fact fuelled and compounded by a long world history of colonialism.

The histories of nearly all developing countries today will each show long periods of occupation or domination by a colonial (now big capitalist) power from Europe or North America, during which the colony was laid prone by land grabbing and plunder of its resources, decimation and destitution of its native peoples through disease, hunger, slavery and subjugation campaigns, and the dissolution of local self-sufficient economies as the colony was gradually sucked into the world market.

Certain key features of the old colonialism that ravaged its victim-countries persist to this day in the form of neo-colonialism. (The impact of colonialism and neo-colonialism on agriculture and food systems will be treated in greater detail in Chapter II.)

It is no exaggeration to state that the problem of global chronic hunger has reached disaster proportions. In fact, the International Federation of Red Cross and Red Crescent Societies have made “hunger and malnutrition” as its focus for its *World Disaster Report 2011*. David Nabarro, the UN Secretary-General’s Special Representative for Food Security and Nutrition, had this to say: “Current levels of undernutrition reflect a massive and avoidable disaster for millions of the world’s citizens. It is inexcusable and morally unacceptable that this situation persists to this day.” (IFRC 2011)

II Social inequities at the root of hunger and poverty

It is now incontrovertible fact—and even a basic premise of official development discourse—that the huge gains in agriculture and food production in the past 60 years have not solved global chronic hunger, which is inseparable from the wider conditions of poverty that affect billions of people worldwide.

Use of high technology and restructuring of agricultural systems in the name of “modernization” in recent decades have pushed agricultural productivity still higher, but have not solved problems of equitable food distribution and access. In fact, such agricultural “modernization” has worsened the social and environmental impacts of intensive and corporate-driven agriculture.

Hunger and other symptoms of poverty today are not caused by some generalized food shortage or material scarcity. Rather, they are caused by limited and unequal access to productive resources, especially land as one of the most basic resources. These inequities that underlie hunger and poverty are not accidental or peculiar to certain countries or certain years only. Rather, they are historically rooted and regenerated in complex and still unfolding social processes, which must be comprehended and resolved if humanity is to finally eradicate hunger and poverty.

1. Why have efforts to solve global hunger failed so far?

In the past 60 years, the bulk of efforts to solve chronic hunger and poverty globally have focused on three major approaches as they apply to agriculture, namely, (1) the industrial production approach; (2) the corporate market approach; and (3) the radical transformative approach.

The first two efforts achieved major gains in food production and distribution, in specific aspects and in particular periods. But they also created adverse effects in many other respects. Both are now increasingly considered as having generally

failed. Many efforts have also been undertaken using the third approach. However, they have not been given enough chance to bear fruit.

a. What is the industrial approach and why has it failed?

The ***industrial approach*** to increasing agricultural and food production is one that fundamentally depends on methods of production akin to manufacture and modern technological processes of conventional industry, while appropriate technologies based on nature conservation and ecological-based development efforts are denigrated as backward and thus sidelined.

Mainstream science and economics have correctly appraised the problem of low productivity in agriculture as due to lack of technological development. Due to this lack, the right combinations of natural and human action needed to optimize food production are not effectively harnessed and adapted to varying conditions. In fact, since nature and agriculture are continuously evolving, technology is rightly a matter of constant evolution and improvement as well.

However, the dominant social and technological forces that emerged from the Industrial Revolution have pushed the rigid imposition of the industrial model of synthetic chemical and mechanical processes on agriculture. In their view, chemical, physical-mechanical, and engineering sciences—which were indeed successful in creating new industrial products and processes—must also provide the main engines of technological innovation and growth in agriculture.

The result is industrial food production: the machinery-based mass production of crops, livestock and foodstuff heavily dependent on chemical processes, synthetic substitutes and factory assembly-line methods, which are considered superior to perceived-to-be slow biological processes and natural cycles.

In its extreme form, industrial agriculture relied on highly controlled environments and specialized technologies that were increasingly detached from natural and social environments and processes. Examples may be seen in industrial greenhouses, hydroponics, genetic engineering, biofarming, and other laboratory production methods.

It has been estimated that industrial agriculture contributes to climate change, accounting for at least 13-15% of global, man-made greenhouse gas emissions. In fact, industrial agriculture's GHG production grew nearly three times more than its productivity between 1990 and 2005. (De Schutter 2011, 2)

Two major examples of the industrial approach are the Green Revolution (agrochemical-based solutions) and the Gene Revolution (biotechnology-based solutions). In the so-called Green Revolution, agriculture revolved around synthetic chemical inputs like fertilizers, pesticides, animal vitamins, and supposedly high-yielding crop and livestock varieties that heavily relied on these inputs to artificially increase productivity. In the so-called Gene Revolution, biotech laboratories use genetic engineering methods and invoke patents on life to mass-produce synthetic substitutes for plant and animal crops, which further enhanced the use of chemical inputs.

The Green Revolution

The central concern of the Green Revolution program was to increase food production and agricultural efficiency (as measured in crop yields per hectare per unit of work) by employing high-yielding crop and animal varieties that required massive amounts of agrochemical inputs and fuel-consuming machinery. Other techno-fixes related to the Green Revolution have been widely implemented in different aspects of the food system cycle, from tillage techniques to post-harvest facilities to reduce spoilage and wastage.

Components of the Green Revolution include:

- a. promotion of seed and livestock varieties that are supposed to produce higher yields (HYVs) per land area through agro-chemical inputs;
 - b. promotion of use of chemical fertilizers that are supposed to provide for nutrients needed by HYVs that the soil could no longer self-replenish and provide in such big amounts;
 - c. promotion of use of pesticides, fungicides, molluscicides, and herbicides;
 - d. promotion of industrial feeds, growth hormones, vaccines and antibiotics that are supposed to speed up reproductive processes and growth in livestock and aquaculture, while flooding animals' bodies with medicines;
 - e. promotion of many other industrial-type farming, husbandry and aquaculture techniques such as monoculture and the technologies it requires; and
-

- f. establishment of financing, crop insurance and marketing structures essential for dissemination of technology and production resourcing, including cooperatives, rural banks, and retail chains.

Critique of the Green Revolution

In the nearly 70 years since the Green Revolution was first implemented and then pushed for worldwide dissemination by advanced capitalist states and giant agribusinesses, its key role in steadily pushing up global food production has been acknowledged. However very important adverse impacts have eventually negated that role. The damage brought by the Green Revolution includes:

- a. Consumption of tremendous amounts of resources, such as water, energy, industrial chemicals;
- b. Steep increases in chemical and biological pollution in soil, water, and air, which spread widely through groundwater and rivers, contaminating crops, drinking water sources, and many other ecosystems downstream all the way to coastal waters and marine life;
- c. Direct effects on farmers' and farmworkers' health as they handle agro-chemicals without sufficient protection;
- d. Diminishing returns, as the soil is ruined by continuous dumping of chemical fertilizers, and as pests and pathogens develop resistance against pesticides, antibiotics and vaccines;
- e. The spread of monocultures, which weakens agri-biodiversity
- f. Reduced food quality and safety, which are often sacrificed in exchange for high production volumes and initially low costs for farmers and consumers;
- g. Vicious cycle of dependence on agro-chemical inputs for millions of small farmers who bear the gradual increase of costs while farmgate prices of farmers' produce remain low, leading to growing farmer indebtedness and small-farm bankruptcies.

The Gene Revolution

The more recent strategy of developing and employing biotechnology products basically uses the same industrial approach as the Green Revolution to create "improved" crop seeds and livestock strains, or to harness bacteria for various agricultural or industrial uses. Genetic engineering techniques are used to redesign

organisms at the DNA level by splicing particular genetic traits into crops and livestock, or to microorganisms of potential commercial value, or even to weeds and pests designed to spread the trait to wider weed and pest populations, making them easier to control.

Components of the Gene Revolution include:

- a. Development and promotion of genetically modified crops, livestock, microorganisms of potential commercial value, and even lab-produced weeds and pests
- b. promotion of use of chemical and other industrial inputs
- c. intensification of industrial methods made possible through genetically enhanced crops

Critique of the Gene Revolution

- a. Release of GMOs to wide commercial use, or even just field tests, presents yet unknown, or barely known, or insufficiently tested, side-effects and possible contamination and other risks to environment, biodiversity, and people's health;
- b. Self-limiting genetic traits, such as "suicide seeds," which prevent farmers from exercising their time-immemorial right of control over seeds.
- c. MNC ownership of life patents ensure them of technological control and unjust, immoral profits from what should be a common human legacy

Why have the Green and Gene Revolutions failed?

Basically, the Green Revolution and Gene revolution or biotechnology solutions were able to drive up agricultural productivity—for certain periods and in selected areas—by forcing farmers to commercialize or else give way to big corporate farms. These solutions proved to be unsustainable because they tied down the mass of farmers to inequitable finance and trade arrangements, apart from many adverse environmental and health side-effects.

Raising food production statistics alone cannot eliminate chronic hunger, because the problems that create hunger are inseparable from those that perpetuate the broader phenomenon of poverty amidst plenty and wealth.

b. What is the corporate market approach and why did it fail?

The *corporate market approach* is focused on solving food problems solely or mainly from the perspective of market mechanisms, which are driven by supply-and-demand considerations and measured through cost, volume and price indicators. The basic premise is that it is best to rely on market forces in ensuring a steady food supply against cyclical and unexpected fluctuations.

The market approach implies abandoning the strategy and goals of self-sufficient and balanced food production, since the market becomes the arbiter and provider of people's needs in food and nutrition. Furthermore, producers, countries and communities are encouraged to compete in world trade, by specializing in the export of certain food or agricultural products. The assumption is that any gaps in their domestic food supplies are filled by imports.

The corporate market approach is premised not only on market behavior as the dominant mechanism, but also on the corporate control of the market. Corporate control makes this market dominance possible, as big corporations stand to gain through economics of volume thereby pushing out small and independent producers and traders. But this also makes their dominance illogical because they lead to monopoly and cartel practices, such as creating artificial shortages or gluts to drive prices up and down, thus distorting supposedly "unhindered" market behavior.

The promises of market solutions are increasingly enhanced by technology, with information systems supposedly capable of tracking fast-changing data and trends in food supply and demand and price fluctuations to better inform the plans and decisions of government, business, farmers and consumers. However, as the 2008 food crisis shows, real-time data merely amplifies the urge to food speculation resulting in volatility of food prices.

Instead of solving actual problems faced by the majority of small producers (such as spotty food distribution networks, lack of farm to market roads, and better storage facilities for perishables), market development geared towards centralization of the food supply chain. Instead of developing the supply chain to serve better the entire food system, the corporate market approach equates efficiency with a core profit motive resulting in disruptions of the supply market and consumer markets leading to high prices for consumers.

While the corporate market approach seemingly provides for greater variety of foods in retail markets, it actually fails miserably in ensuring food access in terms

of adequate and long-term food supply for the whole population at reasonable and stable prices.

The corporate market approach should not be confused with rational management or regulation of markets. The function of a corporate-driven market is drastically different from that of public corporations or of producers' and consumers' cooperatives, which act to mediate between suppliers and consumer markets for the benefit of the public. A rational food distribution system also recognizes the market's important role in distributing farm products to consumers and allowing consumers to exercise choice at the outlet or point of sale. This type of markets also needs to be reformed to ensure access to food, be equitable etc.

c. What is the radical transformative approach?

The ***radical transformative approach*** is focused on transforming the present social system—its underlying structures and its more specific components—based on a more holistic analysis of the roots of hunger and poverty, and of other forms of injustice as well. These more holistic analysis and projections of social change are based on an alternative development paradigm that rejects the basic premises of the present agricultural and food production and distribution systems, such as the industrial approach and the corporate market approach.

The radical transformative approach encompasses various strategies of social and economic change such as land reform programs, collectivization in production planning, production and distribution, and sustainable development. This approach also encompasses the principles and policies for an alternative, rights-based food system, which is called food sovereignty.

These efforts have achieved the most gains in minimizing hunger and poverty, and ensuring economic and social equity, especially in countries and periods where they were integral to democratic governance. However, in the past 60 years, they have not been given enough chance to be implemented, take root, and achieve the full range and objectives of transformation of agriculture and food systems. With a few exceptions, they failed to reach a higher and more stable level of development.

This failure may be traced to a number of reasons and circumstances:

First, the objective of equitable access to basic productive resources such as land and water have not been effectively addressed in many societies. Many agrarian reform initiatives have not really addressed the issue of equity and marginalization of landless agricultural workers, bonded labor, indigenous communities and

minority groups. Other agrarian reform programs were able to provide equitable access to resources for a certain period, but failed to ensure sustainable access and eventually gave way to renewed encroachment or reconsolidation of landlord or corporate control over resources through financial and other means.

Second, the objective of self-sustaining production by rural populations through economic and production measures such as cooperativization and communal agriculture that necessarily includes societal, economic, and production reforms have not been effectively addressed.

Third, the objective of sustainable production through correctly harnessing natural and biosciences rather than promotion of chemical-intensive industrial agriculture techniques that result in declining productivity and degradation of land and water resources have not effectively addressed.

2. What is the government's role in ensuring food security?

a. What is food security?

The concept of food security, which started to emerge in international discourse in the 1970s, has since evolved into a complex set of definitions and indicators. At the time of the 1974 World Food Conference, food security was focused on ensuring an adequate world food supply to ensure expanded food consumption and to offset supply and price fluctuations. Later, a Plan of Action on World Food Security was adopted, urging national governments to build up their food stocks and to formulate their own food security programs.

As world food production continued to rise in the 1980s, it became clear that food security meant more than just building up food stocks to avoid food shortages and famines. International policy discourse shifted to a broader definition premised on people's continuous access to food (which meant capacity to produce or buy) and not on mere availability of food in the markets. In the 1990s, the discourse shifted further to food accessibility at the household and individual level, broadened to include health and nutrition issues, and more solidly connected to the individual right to adequate food.

Thus, starting with an initial definition at the World Food Summit in 1996, the Declaration of the World Summit on Food Security held in Rome in November 2009 adopted a more multilayered definition:

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. The four pillars of food security are availability, access, utilization and stability. The nutritional dimension is integral to the concept of food security. (WSFS 2009)

The UN, its various agencies, and other multilateral bodies have set themselves Millennium Development Goals (MDGs) with quantitative indicators and time-bound targets at reducing and eventually eliminating the problems of global hunger and poverty. Along these lines, the UN and its member-states have adopted comprehensive programs on food security and rural development.

b. Why must food security be understood from a right-to-food framework?

From the perspective of peoples interests, food security can and should be understood from a right-to-food framework. The right to food, in full or in its specific aspects, are already included in a wide range of binding and non-binding legal instruments. Specific provisions in these instruments coincide with more recent food security initiatives. (Mechlem 2004, 637-638).

Food security is focused on strategies, policies, and programs aimed at ensuring food availability and accessibility. Meanwhile, the right to food is focused on the various aspects of the human need for food, which are grounded on the very idea of human survival, dignity and self-development, and which translate into rightful claims addressed to the state as principal duty-holder.

Food security and the right to food thus share a big subset of concepts and concerns, but are not equivalent. Rather, human rights (integral to which is the right to food) provide the broad framework in which food security measures must be anchored. This framework also highlights the application to food security measures of other human rights principles, such as accountability, participation, and remedies in case of violations. (For additional discussion of the human rights-based approach to food sovereignty, see Chapter III, Section 4a.)

Communities, countries, and states must implement food security measures to ensure that their people's right to food is realized. As Mechlem emphasized (2004, 645): "The achievement of food security is a policy objective; striving towards the full realization of the right to food is a legally binding obligation [for states]."

Box 1. Three forms of state obligations

Under the ICESCR, states are obliged to undertake steps towards achieving progressively the full realization of the rights recognized in the said Covenant.

The right to food, as all human rights, entails three forms of state obligations. These are the obligations to respect, protect, and fulfil the right to adequate food.

The obligation to respect requires that States refrain from interfering directly or indirectly with the enjoyment of the rights. They must refrain from denying or limiting access to food or interfering arbitrarily with existing arrangements, e.g. by destroying existing functioning market systems.

The obligation to protect requires States to take measures to ensure that third parties such as individuals, groups, corporations, or other entities do not interfere in any way with the enjoyment of the right. States must take, effective legislative and other measures—such as food safety measures—to control and restrain the activities of third parties.

The obligation to fulfil means that States must take positive measures to facilitate and provide for individuals' enjoyment of their rights. Facilitation comprises the development of comprehensive national right-to-food strategies, the development of policies, the repeal of legislation that impairs the progressive realization of the right, and the enactment of necessary new laws. In short, it comprises the development of an enabling framework in which as many individuals as possible can provide for their own food.

Lastly, States have the obligation to provide for the fulfilment of the rights directly in those cases, and only in those cases, in which individuals are unable, for reasons beyond their control, to realize the rights themselves. Food safety nets and food interventions targeted towards vulnerable groups fall within the provide dimension.

Source: Mechlem 2004, 639-640

To delink the concept of food security from the right to food and other related human rights is to allow food security to be reframed by other strategies focused on corporate profits and market dominance, or even political and military goals, rather than people's rights and basic needs.

Precisely because of historical and structural problems at country and international levels that prevent equity and rights, a successful and sustained implementation of food security politics and programs presents many complicated challenges. Thus, the global agencies that helped promote food security, such as FAO and CFS, are nowhere near the objectives they themselves set up. Even states claiming to have attained national food security do not necessarily measure up in ensuring that

their whole population, especially their poorest sectors, fully realize their right to safe, nutritious, adequate, and culturally acceptable food.

c. How must governments assure and implement food security?

The human rights-based approach to food security makes food policy at the global, national, and local levels more comprehensive because it urges states and multilateral bodies to factor in a wider range of social and economic concerns. Each nation and its government, informed by human rights, must thus formulate and implement appropriate food security strategies, policies and programs to ensure their people's right to food, and also to enhance the role of their agricultural and food systems in the country's economic, social, governance, environmental, and cultural goals.

Governments must recognize and seriously assume their role in implementing and assuring food security. They must see to it that the country's food security program is integral to its agricultural policy and overall development strategy.

In particular, governments should take leadership and ensure country ownership in various policy and program areas such as food production and distribution; nutrition and health; potable water and sanitation; development of technologies for agriculture and food processing; rural infrastructure; natural resource management; food-related trade and finance; and climate change adaptation and disaster management.

(Specific food policies in the context of food sovereignty will be discussed in detail in Chapter IV.)

3. What are key problems facing food systems and agriculture?

General social inequalities within countries

In perhaps most if not all countries today, historically persistent and problematic social structures generate inequalities and exploitative conditions, which thus result in significant levels of poverty and chronic hunger. This is despite the attainment of formal democratic processes and high productive capacities that are supposed to drive development. Such social inequalities hinder genuine development in various direct and indirect ways, eventually drag down the economy, including agriculture and food systems, which aggravates environmental problems, which in turn further worsen food insecurity.

Extreme conditions of social inequality are found in developing countries of the Third World where billions of people's livelihoods are mainly agricultural and depend on direct access to farmland, pastureland, water, and other natural resources. However, feudal, feudal-like, and other inequitable forms of land and resource tenure prevent the majority of farmers, herders and fisherfolk from exercising democratic control and from deriving sufficient and sustainable benefits from rural livelihoods.

On the face of it, chronic hunger should not be an issue in the agricultural bowls of the world, since these are the main food sources. But social inequalities result in extremely low farmer and farm worker incomes; agricultural bankruptcies due to high costs and low prices; rural unemployment; export orientation that limits farmers' options to export crops (usually non-staple food or non-food); and other forms of rural poverty. Conditions of destitution and hunger are even worse in Third World urban areas with minimal or limited industries.

In the developed countries of the global North, industrial capitalism fuelled further by high finance appears to have solved age-old poverty and hunger at first glance by tackling the problems of low productivity through the use of large-scale machinery for mass production (combined with large-scale facilities for mass delivery) of basic goods and services. However, the profit-maximizing and cost-minimizing essence of capitalism, intensified by speculative financial operations, create conditions for cyclical crises that simultaneously affect many countries, such as the Great Depression of the 1930s and what is now often cited as the Greater Depression which started in 2008.

Such crises result in financial collapse, industrial slowdowns, factory closures and layoffs leading to higher unemployment rates and poverty incidence. Such crises also impact agriculture and rural development massively through the weakening or bankruptcy of small family-held farms, eventually leaving the field open to tighter control by giant agri-business corporations. This, in turn, intensifies social inequities.

Superficially, food insecurity has been solved in capitalist countries due to comparatively higher wages and market availability of a bewildering variety of food products. But poverty and chronic hunger still rears its ugly head especially in some backward areas of production, among the unemployed and underemployed (including migrants, blacks, other minorities), and during crises.

We can better understand the abovementioned social inequalities in their impact on agriculture and food systems in the countries of both global North and global South, by focusing our analysis on the following key problems.

a. Corporate control over agriculture and food systems

In the global North and certain areas of the global South, much of agriculture and food production nowadays are done on an industrial scale by big corporations—hence the term “corporate industrial agriculture.” Such corporations, also called agribusiness monopolies, either control the key agrochemical inputs such as fertilizers, pesticides, and increasingly patented seeds and organisms, or enter into production contracts with small farmers, or partner with or directly operate big factory farms, food processing plants, and food-based trading firms. This type of agriculture is monopolized by giant agrochemical, agribusiness corporations such as Syngenta, Monsanto, and Bayer.

Expansion of agribusiness monopolies. Neoliberal globalization has helped tighten vertical corporate monopoly control over land, resources, agriculture, and food systems—from financing, machinery, chemical inputs, seeds, and even water sources, all the way to food processing and wholesale and retail trade. Agricultural liberalization has resulted in the consolidation of agricultural land and resources in the hands of big landowners, agribusinesses, and other large commercial entities. Transnational corporations are also expanding control over different segments of the food system, markets, and global food production.

Mergers and acquisitions have become more expansive in the inputs sector, food trade and food processing industry. Farm subsidies, at first glance, appear to benefit family-owned and other small-scale farms. But since these small farms are increasingly sucked into the network of contract farming, the ultimate beneficiaries are still the giant agribusiness firms.

Agribusiness control of global food trade. Meanwhile, in food trade, global transactions in cereals and soybeans are controlled by a few TNCs. The same is true for other crops, such as tropical export crops like bananas, pineapples, coffee, cocoa, etc. In the last twenty years, TNCs have also increased their control and domination of the food processing and retailing industries. Small farmers do not only lack control over farm inputs but have also lost control over the price of their produce and the terms of its trade. (Food Sovereignty module, 25)

Contract farming. The dominance of industrial agriculture and the tightening corporate control over food systems have led, in recent decades, to the near-

Box 2. List of top US and other companies in agribusiness and food sectors

Seeds Monsanto DuPont Syngenta Group Limagrain	Beef packers Tyson Cargill Swift & Co. National Beef Packing Co.	Pesticides Bayer Syngenta BASF Dow AgroSciences
Dairy processors Den Foods Kraft Land O'Lakes Saputo Inc.	Pork packers Smithfield Tyson Swift & Co. Cargill	Fertilizers PotashCorp (Canada) Yara (Norway) Mosaic (Cargill) (USA) Israel Chemicals (Israel)
Soybean crushing ADM Bunge Cargill Ag Processing	Chicken (broilers) Pilgrim's Pride (bankruptcy) Tyson Perdue Sanderson Farms	Biotech Amgen (USA) Genentech (USA) Monsanto Gilead Sciences
Ethanol production (corn) ADM US Biofuels VeraSun Energy Corp. Hawkeye Renewables	General food & beverages Nestle PepsiCo Kraft Coca-Cola Unilever	Food processors Nestle Kraft Unilever General Mills
Oilseed, grain and sugar processing Cargill (USA) Bunge Ltd. (Bermuda) ADM (USA) Marubeni (Japan) Noble Group (UK)	Grocers/retailers (global) Wal-Mart Carrefour (France) Tesco (UK) Schwarz Group (Germany) Aldi (Germany) Kroger (US)	Grocers/retailers (US only) Wal-mart Kroger Albertson's Safeway
Organic Heinz Dean Kellogg		

Source: "Concentration in the Food Industry," Community Corporate Watch website. Accessed 24 April 2012. http://community.corpwatch.org/adm/pages/food_industry.php

Box 3. Contract farming: boon or bane?

Contract farming is an agreement between farmers and processing and/or marketing firms, in which participating farmers produce and sell agricultural products to the firm, frequently at predetermined prices, quality standards, and quota volumes. The buying firm, on the other hand, agrees to provide the farmers with some production support, for example, by supplying them with agro-inputs and technical advice.

Contract farming agreements may vary in depth and complexity of the provisions in the following three areas:

- **Market provision:** The grower and buyer agree to terms and conditions for the future sale and purchase of a crop or livestock product;
- **Resource provision:** Related to the marketing arrangement, the buyer agrees to supply selected inputs, technical advice and other support;
- **Management specifications:** The grower agrees to follow recommended production methods, inputs regimes, and cultivation and harvesting specifications.

Small farmers are supposed to garner significant benefits from such contractual arrangements, such as (1) assured inputs and technical support from the sponsor, in the form of or in addition to financial credit through cash advances from the sponsor; (2) acquiring new farm technology and knowhow; (3) assured access to markets and also reduced price risk, since the sponsor is committed to purchase the farmers' produce at predetermined prices.

In practice, however, farmers are often at the losing end of the contract since (1) they have to absorb production problems or even crop failures especially in growing new crops and using new farm methods they are unfamiliar with; (2) they often fall victim to buyer malpractices, such as manipulation of quota and quality standards such that farmers are shortchanged; and (3) they find themselves trapped in an exploitative arrangement, especially in the case of specialty and non-food crops that they cannot eat or sell in other outlets.

At the other end, big agribusiness companies who are usually the sponsors are able to customize the design of such agreements and dictate their terms on the farmers, using their monopoly position and limited farmers' options as their leverage. Through contract farming, agribusiness companies enjoy such benefits as (1) bypassing constraints and disadvantages of direct land ownership; (2) exercising more control over the production process and quality as compared to relying on open-market purchases; and (3) avoiding problems of labor laws and labor conflicts in direct-estate operations.

Agribusiness sponsors may also encounter problems in contract-farming arrangements, but they can make quick adjustments by dictating new terms from year to year. Thus, contract farming has been criticized as a "partnership among unequals."

Source: Eaton and Shepherd 2001

demise of smallholder family farms especially in developed countries, and in increasingly commercialized rural areas of developing countries as well. In response, governments and agricultural agencies have urged small farmers to enter into contract-farming arrangements, either with big agribusiness as direct partners or through local merchant-financiers as intermediaries but who ultimately act as agents of big agribusiness. (See Box 3)

Agribusiness control of genetic material through IPR. Intellectual property rights systems provide monopoly privileges over what once belonged to the commons and thus facilitate control over genetic material and life forms such as seeds and livestock breeds. These systems prevent the free exchange of seeds and livestock breeds as well as allow corporations to expropriate farmers' knowledge. Many seed and livestock breeds have been bought by agrochemical companies. (Food Sovereignty module, 25)

b. Landlordism, landlessness, and land grabbing

As a recent Oxfam study on food justice stated: "Perhaps nothing illustrates the inequity at the heart of the food system more clearly than the case of land—the most basic resource of all. In the USA, 4 per cent of farm owners account between them for nearly half of all farm land. In Guatemala ... less than 8 per cent of agricultural producers hold almost 80 per cent of land—a figure that is not atypical for Central America as a whole. In Brazil, one per cent of the population owns nearly half of all land." (Oxfam 2011, 32)

Landlordism. For many centuries before the emergence of capitalism, vast tracts of productive land, waters, and natural resources in many countries were owned or controlled by a powerful landlord class or aristocratic elite through various legal, political and economic mechanisms, including through direct control of state power in many cases. Under their ownership and control evolved various modes of land and resource tenure by which the vast mass of farmers eked out livelihoods on the land and waters—whether as tribute-paying serfs, rent-paying tenants, or as free peasants paying various taxes, fees and duties.

Such oppressive feudal or feudal-like modes of ownership over agricultural and resource-rich lands persisted into the 20th and early 21st centuries in many underdeveloped countries—often because the colonial powers imposed such social inequities or allowed them to continue, to assure cheap production of specialized cash crops and other raw materials for export, and to ensure the loyalty of the native landed elites.

Such have been the legacies of many countries in Asia, Africa and Latin America, in which a small number of corporations and wealthy families own—or enjoy access through state concessions—a substantially big proportion of the country's farms, pastures, and other productive lands, but do not work the land at all.

The overall impact of landlordism in many Southern countries today is that it allies itself with corporate industrial agriculture but resists comprehensive industrialization and rural development; it aggravates landlessness and poverty among the rural poor; and it hinders democratic governance of agriculture and food systems.

Land grabbing. In recent decades, and especially since the severe financial, economic, food and fuel crises broke out from 2008 onwards, vast tracts of land in agrarian Southern countries have been targeted or actually obtained by private investors (usually big agribusiness firms), through long-term lease, outright purchase or joint venture, in order to further tighten their control of production of high-value cash crops, including material for biofuels and industrial products.

A study by the International Land Coalition and Oxfam Novib identified over 1,200 land deals (under negotiation or completed), covering 80 million hectares since 2000. The vast majority of them were reported after 2007; over 60 per cent of the land targeted was in Africa. (Oxfam 2011, 18)

Foreign land grabs result in the displacement of local farmers and poor indigenous communities; replace polyculture farming and agri-biodiversity with chemical-intensive monoculture with all its adverse impact on local environment; undercut agrarian reform by preempting it with land consolidation by corporate investors; and diminish local access to food resources due to the emphasis on cash crops for export (often non-food) and, in some cases, on eco-tourism. (Daniel 2009) Worse, there is a marked trend for land acquisitions by big investors to remain idle—an indication that the motive is merely to preempt future competition, to control local water sources, and possibly to profit from land speculation and conversion to non-agricultural uses.

Landlessness. The problem of landlessness continues to worsen due to the factors of traditional landlordism, recent trend of corporate-led landgrabbing, land degradation due to environmental problems (including the effects of industrial agriculture), and the cumulative impact of population pressures. According to World Bank data (<http://is.gd/P5cylT>) cited by the 2011 Oxfam study, the

Box 4. Terms relating to land tenure

Land tenure: the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land (including natural resources on the land). Land tenure systems are institutions (sets of rules) invented by societies to determine who can use what resources for how long, and under what conditions.

Private land tenure: the assignment of rights to a private party who may be an individual, a married couple, a group of people, or a corporate body, such as the right to own residential or agricultural lots by virtue of private title.

Communal land tenure: a right of commons that may exist within a community where each member has a right to use independently the holdings of the community, such as the right to graze cattle on a common pasture.

Open access: specific rights are not assigned to anyone and no one can be excluded, such is typical in marine tenure, rangelands and forests, where access to the high seas is generally open to anyone, whether a member of the local community or not.

State ownership: property rights are assigned to some authority in the public sector, such is the case in some countries where forest lands or mineral lands may fall under the mandate of the state, whether at a central or decentralised level of government.

Property rights: a term that could refer to the right that a person has in an object such as land. In practice, multiple rights can be held by several different persons or groups ("a bundle of rights"), and each right may be held by a different party. Different rights to the same parcel of land, such as the right to sell the land, the right to use the land through a lease, or the right to travel across the land, may coexist.

Property rights may be classified into the following, for purposes of simplified understanding, although the exact manner in which rights to the land are assigned can be very complex:

Source: FAO 2002, 7-11.

amount of arable land per capita has steadily decreased worldwide, having almost halved since 1960.

Landlessness takes several forms: (1) Minimal or no access to productive land and water; (2) access limited only to marginalized or barely productive lands and waters; (3) a degree of access to productive lands and waters, which remains limited by tenurial arrangements or state law. In whichever case, farmers, pastoralists and

fisherfolk hobbled by the various kinds of landlessness end up in dire conditions of low income and food insecurity.

c. Rural unemployment, low incomes, and general poverty

Poverty in the rural areas remains vaguely or only superficially understood—not merely because of their remoteness, or due to variations in geographic, environmental, economic, political, and social conditions. Rather, much of the analysis on rural poverty is not clearly framed in definite social inequalities and property relations, as described in preceding sections.

Rural areas of the world are home to almost half of today's world population, and 75 percent of the world's poor. For an estimated 86 percent of the rural population worldwide, or 2.6 billion people, agriculture is still the main source of income generation and livelihoods. Out of the total agricultural workforce of some 1.1 billion, some 450 million are waged agricultural workers, while the rest (650 million, or 60 percent) are in smallholder households as self-employed or own-account workers, in addition to unpaid (contributing) family workers.

Whether as self-employed farmers, unpaid family workers, or as wage workers, this huge agricultural work force represents a tremendous source of cheap labor. As wage workers employed by corporate-owned factory farms and plantations or odd-jobbing in small farms, nearly a half-billion do not have any control over the production process, receive measly pay, and suffer the most difficult working conditions.

Self-employed, own-account, and unpaid family workers, on the other hand, may have a degree of control over the production process but also suffer from low incomes due to high rent as tenants or shareholders, high costs of inputs, low prices of farm products, low productivity, and the vagaries brought by climate change and environmental problems. Indirectly, their livelihoods also fall under indirect corporate control in so far as they are trapped into contract-growing and other financing and trading schemes. The estimated 650 million rural work force in this category in fact represent a very high rate of underemployment.

Labor conditions. The conditions of most rural workers are not sufficiently covered by national law, both due to legislative neglect and due to widespread informality. Fundamental rights and measures at work—abolition of child labor, ban on forced labor, laws against discrimination, and union and collective bargaining rights—are often not respected or even known in rural areas. Whatever

Box 5. Facts and figures on the structure of rural employment

- Of the developing world's 5.5 billion people, 3 billion live in rural areas: 2.6 billion are in households involved in agriculture, 1.5 billion in smallholder households (WB data, 2007)
- There are an estimated 450 million waged agricultural workers out of a total workforce in agriculture of some 1.1 billion.
- Women waged agricultural workers account generally for 20 to 30 percent of the waged workforce, rising to 40 percent in Latin America and the Caribbean (ILO/FAO/IUF data, 2007)
- When both self-employed and wage labor are considered, women represent a larger proportion of the labor force than men in the agricultural sectors of Asia, Africa, and the Middle East (WB data, 2009)
- In 2008, an estimated 28 percent of all young workers (aged 15 to 24), or a total of 152 million, were living with their families on less than US \$1.25 a day. Most of them are in the agricultural sector (ILO data, 2010)
- Some 60 percent of child laborers (aged 5 to 17) are in agriculture, majority of them working as contributing family workers. (ILO data, 2010)
- In regions where agriculture is the main employer of rural populations, the number of working poor (with regular employment but in relative poverty due to low levels of income/pay) is particularly high. In 2008, 45.5% in South Asia and 58.6% in sub-Saharan Africa were in working poverty.

Source: ILO. 2006. Decent Work FAQ: Making decent work a global goal (available at www.ilo.org).

labor laws are meant to apply to rural workers are often not applied, due to weak inspection mechanisms to enforce labor standards.

In this regard, one particular area of concern is occupational health and safety. Agricultural work is physically difficult and involves risks, such as injuries or exposure to hazardous chemicals, including pesticides. Worldwide, some 170,000 agricultural workers are killed each year and millions more are seriously injured. Accidents are markedly more frequent among men, probably due to their use of larger and more dangerous machinery. Nevertheless, male, female, and child farm labor all suffer in chemical-related work accidents and hazards. Despite such high risks, agricultural workers are among the least protected, in terms of access to basic health services, workers' compensation, long-term disability benefits and survivors' benefits. (ILO 2010, 1)

d. Gender inequality and its impact in agriculture and food systems

In most agrarian societies and farming communities all over the world, both men and women are somehow involved in farm work, but there are significant

imbalances in the division of labor both at work and in domestic chores, reflecting deep gender inequalities.

In general, rural women spend longer hours on farm work, and usually are relegated to the more tedious and back-breaking tasks, while men's farm work are usually connected with harnessed farm animals (e.g. plowing), animal husbandry, and defense. Furthermore, rural women are responsible for additional work of food gardening, foraging, beach-combing, and other similar production activities directly linked to procuring and preparing food as a component activity of family reproduction, vastly expanding the role of rural women in farm work in general.

In contrast to their heavier workload, women generally have less land ownership rights. Although women make up 43% of the agriculture labor force in developing countries, based on FAO 2011 statistics, they own less than 15% of land around the world, according to a 2006 study of the International Research for Women.¹ The lack of rural women's equal access to productive land strengthens the patriarchal system and hinders their exercise of their economic and political rights.

Most rural women workers are unpaid family workers or self-employed, and exposed to precarious jobs and low pay. Since at the same time they also shoulder the bigger bulk of work as care providers for their families, their time and mobility to engage in productive work outside their traditional roles are also restricted. Underdeveloped public facilities in rural areas also add to the domestic workload usually assigned to women such as fetching water, gathering fuel, and laundry.

Generally, rural women workers are less protected by labor laws and standards, and their membership and role in work-based organizations remain smaller (see Box 5).

Taken all together, these limitations and imbalances in the role of rural women represent a further reduction in the productivity of small-holder agriculture and efficiency of food systems, a further reduction in poor people's in decision-making processes, and a fundamental hindrance in women's exercise of their rights.

e. Inequality suffered by indigenous peoples and national minorities

Oppressive conditions suffered by indigenous and minority peoples amount to inequality, discrimination and other violations of their collective rights as peoples, as addressed by several UN instruments. These include various forms of intrusion

¹ As cited in "Women and access to land," Nyeleni Newsletter No. 6, September 2011.

Box 6. Facts and figures on rural working women

- In Benin and Tanzania, women work, respectively, 17.4 and 14 hours more than men per week; while rural Indian women work almost 11 hours more than urban women and 12 hours more than urban men.
 - Girls are particularly vulnerable, as they are more likely than boys to be sent or sold by their parents at a young age into bonded labor, as in South Asia.
 - Since women predominate in the informal rural economy, they are particularly affected by the failure of labor standards to ensure their work-related rights and welfare, in law and in practice.
 - Rural workers are poorly organized, and women's representation and voice in rural employers', workers', and farmers' organizations, where they exist, are low. Rural women's presence in such organizations remains low (11-35% of total membership), leading to lack of voice and representation in policy-making and program development.
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Source: ILO 2010, 1.

Additional source: ILO. 2008. Breneman-Pennas, T. and Rueda-Catry, M. "Women's participation in social dialogue institutions at the national level," Geneva.

into their ancestral domain, grabbing or transferring control of their ancestral land and resources, violating their distinct cultural identities, their treatment as second-class citizens by the State by virtue of their distinct identities, and other similar economic and political impositions.

These abusive measures are violations of indigenous peoples' right to food, in so far as these endanger, deny, or actually destroy their lifeways and livelihoods, especially their distinct agricultural practices (for example, subsistence activities such as hunting, gathering, simple horticulture, small-scale fishing), traditional food systems and food sources, and culturally-shaped food preferences.

The situation of many indigenous peoples is particularly tenuous, because their homelands—mostly unsubjected or even untouched by colonial powers and the spreading global economy in past centuries—are now being more strictly defined vis-à-vis the jurisdiction of states and the legal claims of big corporations interested in exploiting their traditional lands and the resources found there.

4. How do inequalities among countries affect agriculture and food systems, especially in developing countries?

The law of uneven social development applies to countries and to local communities as well, shaped by diverse geographical, environmental, historical, ethnographic, cultural, economic, and political factors that are too many to enumerate here. But uneven development does not by itself automatically lead to inequalities.

Limiting our scope to the past 600 years, however, with 16th-century European explorers and conquerors opening trade routes and colonial outposts in other continents, it is most evident that colonialism played a key and continuous role in cementing the foundation of inequalities among countries, which persist to this day.

In particular, it was the colonialists' deep impulse for accumulating wealth and jump-starting nascent capitalism that made them enslave if not decimate native populations, plunder their new territories' rich and barely-tapped resources, forcibly impose new patterns of production, trade and consumption, and restructure the very social fabric of indigenous societies. Review the history of any colonized country in Asia, Africa and Latin America, and one will see the many reasons why the colonial power became rich and industrialized, while much of the colonized territory remained poor and agrarian or pre-capitalist.²

Colonialism later transformed itself to the neocolonialism of the 20th century, as the former colonies attained formal political independence while much of their economies remained tied to those of their neocolonial masters and to the global capitalist economy as a whole. Through unequal trade, investments and loans, the neocolonial powers created, maintained, and benefitted from a Great Divide between what are now the few developed countries of the global North and the more numerous developing countries of the global South.

From 1989 onwards, the so-called Washington consensus ushered in the period of neoliberal globalization, which intensified neocolonial domination of the world by having the International Monetary Fund (IMF), World Bank, and later the World Trade Organization (WTO), impose a standard "reform package" or structural adjustment policies (SAPs) for developing countries to follow. These policies included liberalization in trade and investment, deregulation, and privatization, which favored developed countries and giant multinational companies.

² There were a few exceptions, such as the United States, Canada, and Australia as former colonies that became independent and rapidly achieved capitalist industrialization soon afterward.

a. Unequal trade

Under neocolonialism, trade inequalities have continued to trap many developing countries into a losing battle of exporting cheap raw materials (mostly products of agriculture including fisheries, mining and forestry) and semi-processed goods, in order to earn foreign exchange with which to buy imported manufactures. And yet, such developing countries commonly end up with balance of trade deficits and shortages of goods, while their economies remained agrarian and only minimally industrial.

Under neoliberal globalization, trade inequalities have worsened, such that developing countries with previously robust agriculture and a degree of self-sufficiency in staple food crops are forced by developed countries and agribusiness monopolies, working through SAPs, to allow cheap imported food and agricultural products to be dumped into local markets.

Dumping of imports undermine local self-sufficient agriculture, and encourage a further shift to export crops and cheap raw materials. International cartels and TNCs manipulate international prices of farm produce and food items. This abuse of trade is often neglected by global and country-level trade policies in the name of trade liberalization. Agribusiness monopolies eventually come in to complete their control of agricultural and natural resources and food production systems.

Under the WTO and other free trade agreements (FTAs), trade policies become binding international agreements that countries have to adhere to or otherwise face sanctions through the dispute settlement mechanism. Trade policy rules affecting food and agriculture, such as those contained in the WTO Agreement on Agriculture (AoA), greatly intrude on the realm of national food policy.

In effect, the WTO and FTAs dictate on a wide range of national policies and measures, from food safety regulations to intellectual property protection, from agricultural subsidies and to price support for staple foods, in ways that benefit North-based agribusiness and subsidized farms while putting South-based small and medium-scale farmers to great disadvantage. Such IMF, WB and WTO-FTA dictates also led to the dismantling of food programs, food price regulations and various forms of public food distribution which were intended to benefit the poor, the marginalized, and survivors of disasters.

b. Foreign debt

Apart from trade inequalities, the developed countries of the North also utilized foreign loans and loan-based conditionalities as another leverage to dictate on and

tighten control over debt-strapped countries, particularly the poor and struggling countries of the South. In fact, there is a straight and direct path from unequal trade to unjust debt: Southern countries, which often incurred trade deficits and the ensuing shortage of foreign exchange soon queued up before the credit windows of international banks and financial institutions, only to realize from the worldwide debt payments crises in the 1980s that they needed to restructure their debts at more onerous terms lest they end up in default.

Thus, from USD 70 billion in 1970, the total amount of foreign debt by Southern countries rapidly grew 40 times in 35 years to USD 2.8 trillion in 2005, including bilateral and multilateral debt from both public and private sources. (Özden 2007, 2) As in the case of trade inequalities, lender countries and IFIs dictated debt restructuring terms that were basically SAPs imposed on debtor countries. The implementation of the SAP triggered a chain of events that basically worsened the situation of the debtor country and its people, especially the poor.

The ensuing debt crunch severely affected many economic sectors since the debtor government adopted fiscal austerity measures that prioritized debt servicing and export-oriented production. Debt servicing took public funds away from supporting agriculture and rural development. Export production, meanwhile, took arable land, labor, and other resources away from food production, favored corporate control over small-holder agriculture, and exploited natural resources in a more unbridled and destructive manner.

c. Foreign direct investments, official development aid

In addition to unequal trade and onerous debt, developed countries also mobilized foreign direct investments (FDI) and official development aid (ODA) as neocolonial tools to further reshape or refine the economy and politics of developing countries. A careful mix of FDI and ODA was poured into country development strategies and programs that typically enhanced the import-dependent and export-oriented character of local production.

Instead of supporting country-owned strategic programs for all-sided industrial and agricultural development, much of the FDI and ODA promoted a few selected showcase projects that enhanced corporate superprofits, such as extractive industries (mining and logging), export crop plantations, processing zones, infrastructure, power, transport, tourism, and the like.

An FAO study published in December 2011 (Lowder and Carisma 2011, 10) revealed that overall public spending, FDI flows and ODA flows from 1980 to

2007 have not consistently and comprehensively supported domestic agriculture development, but only selected sectors deemed commercially profitable.

- Although levels of public expenditure on agriculture increased from 1980 to 2007, the share of total expenditure going to agriculture has declined globally; this is true in all global regions except in Europe and Central Asia (ECA).
- Spending on agriculture per capita from 1980 to 2007 remained particularly low in sub-Saharan Africa, indicating a failure of governments to prioritize agriculture.
- Levels of ODA to agriculture increased from the 1970s to 1980s, at which point they peaked; they then decreased from the late 1980s to mid 2000s, and have increased in more recent years, reaching about USD 6 billion USD in 2008, although it remains far lower than it was in the 1980s.
- There are indications that donor commitments have not emphasized agriculture in the areas with the highest rural poverty and greatest agricultural share of GDP, such as in South Asia.
- Although FDI data are yet inconclusive, it appears that most of it has been flowing to biofuels, food, beverages and tobacco, and much less to agriculture, hunting, forestry and fishing.

Apart from FDI and ODA, the most developed countries such as the United States have also used food as an instrument of domination of countries and communities, and as instruments of war. This is shown by the long-standing embargo imposed by the US on Cuba; the misuse of food aid in the US invasion and occupation of Iraq and Afghanistan; and the adverse impact of foreign food aid on fragile states, such as Somalia.

Finally, a certain portion of public expenditure, investment, and aid flows are allocated to environmental, agricultural, food, and biotech research and development. However, such R&D efforts, including funded university research institutes, remain under the tight control of multinational corporations and are premised on the potential for superprofits.

5. How does the environmental crisis aggravate problems in food and agriculture?

Agriculture, which represents a specialized, human-controlled ecosystem, cannot be but intertwined with its environment. Farming areas are heavily influenced by surrounding ecosystems and are highly sensitive to climate variability and weather extremes. Thus, many environmental factors such as rainfall, groundwater, air and soil conditions, among others, also directly impact agricultural production and productivity.

Incremental but significant changes in global climates in recent decades have snowballed into a veritable environmental crisis. This crisis is causing or aggravating many specific environmental problems now faced by the world's countries and populations. These problems and their direct and indirect impacts on agriculture and food systems include the following:

a. Extreme weather patterns

Greenhouse gas emissions that drive global temperatures upward, causing long-term and possibly irreversible climate changes, are leading to extreme weather patterns such as more severe and frequent cyclones, more severe and longer spells of drought or rain (or snow), extended glacier melts, and others. They cause massive floods, destructive gale winds, forest and brush fires, and drying up of water sources, and rising sea levels in certain coastal and small-island areas, all of which impact direct major damage on agricultural areas as well as rural communities. These weather disturbances are especially disruptive or disastrous to farming, livestock and fisheries when they occur in unexpected places or times of the year, such as during critical periods of the crop cycle.

b. Land and water resources degradation

Human-induced land degradation has been on the rise since the 1950s. Some 85% of agricultural land contains areas considered degraded by erosion, salinization, soil compaction, nutrient depletion, biological degradation, or pollution. Soil degradation has already reduced global agricultural productivity by 13% in the last 50 years, especially of agricultural land in Africa and Central America and pastures in Africa. (IUCN-WBCSD 2008, 10)

c. Long-term ecosystem disruptions

The impact of climate change and other long-term environmental problems show clearly in long-term ecosystem disruptions, such as major and rapid changes in growing seasons, local soil and water conditions, type of vegetation cover, and dominant wildlife species. These disruptions impact crops, livestock, and fisheries

in many direct and indirect ways. They worsen particular headaches for farmers, herders and fisherfolk, such as loss of water supply, stunted growth, outbreaks of pest and pathogen infestation, fish kills, and seawater intrusion.

III Food sovereignty and its principles

1. What is meant by the right to food as a fundamental human right?

Food is among the most fundamental physical needs—after air and water—for every human being to survive from day to day. Since food is most essential to life, the right to food (and also the right to water as an element inseparable from food) is an extension of the basic human right to life. Every human being therefore has a fundamental, inalienable right to food.

a. Right to safe, nutritious, adequate, and culturally acceptable food

This inalienable right to food is not satisfied simply by each person taking and eating whatever is edible and at hand just to stave off hunger. Rather, it can only be fully satisfied by society making sure that safe, nutritious, adequate and culturally acceptable food is available to all its members at all times.

Human food must be compatible with human digestion and nutrition. It must not endanger life and cause disease by flooding the body with harmful microorganisms, toxins, and other toxicants. Rather, food must provide a person with all macronutrients and micronutrients needed by the human body, in appropriate amounts, in order to survive and remain healthy.

Furthermore, food intake must not be limited only to the minimum required for day-to-day survival, especially since most societies now produce more than enough food for everyone. Food intake must satisfy the human need to develop sustainably and diversely, by keeping healthy and active physically and mentally, as individuals and as communities. Safe and nutritious food must therefore be available in sufficient quantities.

Safe, nutritious and adequate food is a particularly critical need for children, women (especially pregnant or nursing women), the sickly, and the elderly. Their

situation may limit their productive capacity in various degrees, yet they are usually the first to suffer or the worst affected by malnutrition. Thus, their higher health and dietary requirements must be given priority.

People live as communities or societies with historically shaped customs and living standards, which strongly shape food preferences. In some cases, society imposes these choices as strict rules, such as food taboos reinforced by religious belief. In any case, specific food-related customs are integral to specific cultures and must be respected. Thus, each community or society must avail of food that is culturally acceptable to its members.

The right to safe, nutritious, adequate, and culturally appropriate food extends to the household and wider community, which socially determines or influences how individual members acquire, prepare, and consume their food.

b. Right to food means assured access to food

To be able to claim their right to food in daily life, people must be assured of access at all times to supplies of food and potable water that should therefore be regularly replenished. As much as possible, people must be allowed to produce or otherwise provide food for themselves in dignity and exercise of choice, instead of merely awaiting to be fed slop like chained animals. People must also have access to household, communal, or public facilities near at hand for storing, preparing, cooking and consuming food.

In this sense, the right to food is not merely an individual's right to consume food, but extends to the collective right of people to access or provide food for themselves. It is a right closely intertwined with people's right to provide for and satisfy their other basic needs such as shelter and storage, water and sanitation, heating and cooking fuel, as well as the capacity for food production, which have been exercised by households, kinship groups, and local communities for millennia.

c. International law recognizes right to food

The right to adequate food is a universally recognized right enshrined in many United Nations declarations and international legal instruments. (Windfuhr and Jonsén, 2005, xi; Mechlem 2004) As such, the right to food provides a set of legal standards, against which each state can compare its laws, policies and programs that are supposed to ensure adequate food for all its citizens.

The Universal Declaration of Human Rights (1948) links the issues of hunger and poverty, and explicitly frames the right to food within the wider right to an adequate standard of living. The UDHR states: “Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.” (UDHR 1948, Art. 25)

The International Covenant on Economic, Social and Cultural Rights (ICESCR, signed in 1966 and coming into force in 1976) reiterated the right to an adequate living standard, which includes the right to adequate food. (ICESCR 1996, Article 11)

The right to food is also contained in a large number of national constitutions. Likewise, international and national jurisprudence or case law on the right to food has begun to emerge. (Mechlem 2004, 632)

2. Why and how must communities exercise the collective right to produce their own food?

a. What is meant by self-sufficiency in food and how is it related to the right to produce one’s own food?

Communities have produced their own food throughout the past millennia of human existence, regenerating themselves through hunting and gathering, fishing, and later farming and livestock raising, and other handicraft production as well. Each community thus enjoyed some degree of local self-sufficiency in food, however sparing. Each community gradually engaged in reciprocal exchanges, later developing into trading and redistributive mechanisms, to dispose of unneeded food surpluses and to cover for food deficits, although generally it remained self-sufficient in food.

As history unfolded, the productive and trading capacities of communities and entire countries expanded. Eventually, market forces became dominant, particularly under capitalism. Industrial goods and agricultural produce were churned out as mass-produced commodities, flooding domestic markets and overflowing into foreign markets. The attractive option of raising crops for sale in distant or foreign markets, then using the cash to buy a wider variety of goods

produced elsewhere, dissolved local self-sufficiency in food and other basic needs in many rural areas accessible to the market.

Despite the dominance of the market, producing food for localized or community use has remained a viable mode up to now in many rural areas across the world. (In some rural areas, they remain the preferred mode.) Thus, even while the market has become a fundamental mechanism for distribution for countries and local communities, they can continue wherever and whenever practical to grow their own food and restore self-sufficient production to some degree.

b. What is meant by communities' right to produce their own food?

The right to produce their own food is essentially exercised and realized by communities, or groups of people in daily interaction, living and working on the land and its resources in definite localities. It is historically rooted in the natural self-sufficiency of pre-commercial communities, and practiced up to now in many rural areas of the world, in the form of communities consuming their own products in part and selling the rest to the market.

Each farming, fishing or hunting, or herding community faces common concerns regarding tools, methods and cycles of production, local environment and resources, food processing and storage, and many others. Facing these concerns together underscores the social character of much of rural production, creating community life even when actual farms, herds, fishing boats and other production units are owned or operated by individuals or households. The poorest farmers, pastoralists and fisherfolk strongly tend to retain communal and cooperative practices to compensate for low productivity, thus further enhancing the collective need, and right, to produce their own food.

International law and global food policy implicitly recognize a people's right to produce their own food, despite its often being posed as a matter of choice among individuals whether to produce or to purchase their food. In recent decades, food policy discourse has become more supportive of the need to enhance communities' capacity to produce their own food as far as practicable, even in the more advanced agricultural setting of developed countries.

c. Why and how must communities exercise this right?

There are overriding advantages in a community growing most or much of its own food. Such communities generally enjoy a higher degree of food security and self-sufficiency, since they have more direct control of economic decisions that go

into food production and distribution systems—what crop varieties and livestock breeds to grow, what technologies to use or avoid, the volume of production, which products and how much to consume locally, which products and how much to sell, to whom and at what price.

Community self-reliance in food also creates additional advantages of proximity. Foods that circulate locally—within the community or among nearby communities—incur less costs in transport, handling and storage. Consumers of locally grown food can more directly demand and check for freshness and other positive food qualities.

Communities can best exercise their right to grow their own food by giving full play to the cooperative spirit and developing practical forms of cooperation at the local level, from mutual-aid and labor-sharing groups, to simple cooperatives, to more advanced forms of cooperatives that also serve as supplementary channels of local governance.

The community's collective right to grow its own food does not preclude its right to engage in the market, that is, sell local surplus to outside buyers and buy from outside sources, especially food that they themselves cannot grow sufficiently and in quality. Trade among nearby communities in fact can be harnessed in ways that strengthen the communities' food self-sufficiency and expand the scope of cooperativism instead of undermining it.

As extensions of communities' collective right to produce their own food, they must also assert their right to secure local resources for food production and to manage the storage and distribution of their local food produce. Communities must attend to the collective concern of maintaining sufficient food buffer stocks and ensuring equitable distribution of food within the community, with particular attention given to those in dire need.

3. Why must each nation assume responsibility for its own food system?

Each nation emerged through historical factors that catalyzed its population and communities into an integrated whole, despite internal diversity and conflicts. Thus a nation can survive and grow, assert its sovereignty over its territories and resources, and relate on equal terms with other members of the world community, by further developing and mobilizing its people and resources.

To survive and develop, therefore, each nation must ensure that its people enjoy the fundamental right to food. Translated into practical terms, a nation's individual citizens and other people residing in its territory must enjoy the right and actual access to safe, nutritious, adequate, and culturally acceptable food, while its communities must exercise their right and actual capacity to produce their own food.

At the country level, each nation must assume overall responsibility for its own systems of food production, storage, processing, distribution, and exchange. In macro-economic terms, this means that each nation must give a high and continuing priority to developing its agriculture and food self-sufficiency, which are critical components of the national economy and people's welfare.

In governance terms, this means that each nation must adopt food policies and programs appropriate to its own needs—not the needs of other nations or that of a dominant elite only. The government must ensure that these policies and programs be backed up by laws, organizational capacity, financial and economic resources, and full people's participation and support.

A nation that neglects its own agriculture, or ties it down to specialized crops for export, or hinders full democratic participation in shaping its agricultural policies and programs, will end up with a food system weakened by land conversion, harvest failures, food shortages and famines, price volatilities, and other production imbalances and distribution inequalities. Such a nation will eventually suffer other negative impacts, such as increased mortality and health problems, a famished labor force, food riots and social unrest, dependence on foreign food aid, and ultimately a bedridden economy. All these undermine national sovereignty in so many ways.

In particular, a nation with a weak food system is susceptible to attempts by powerful foreign states or corporations to control its food supply as hostile weapon or leverage tool. Such a hostaged nation is eventually brought down to its knees by the imposition of exorbitant prices of food imports, by unfair conditionalities in exchange for food aid, or in the extreme case, by food blockades or embargos by an aggressor country.

4. What is meant by food sovereignty?

The People's Convention on Food Sovereignty (2004) expressed the concept of food sovereignty in the following words:

Food sovereignty is the power of people and their communities to assert and realize the right to food and to produce food, and fight the power of corporations and other forces that destroy the people's food production systems and deny them food and life. Nations and states must exercise food sovereignty to protect, promote and develop the people's food sovereignty from which it draws power. (AP-PCFS, Preamble, 117)

In other words, food sovereignty is not merely the right to food, or the right to produce food. Neither is it just the right to expect and demand food security from the government. Food sovereignty, rather, is the power to assert and realize all these rights—a power of people and their communities that comes from their own actions and initiatives. It is the sovereign power that a state can draw on to exercise food sovereignty at the national level.

As a paper on food sovereignty succinctly put it: “While food security is more of a technical concept, and the right to food a legal one, Food Sovereignty is essentially a political concept.” (Windfuhr and Jonsén 2005, 15)

a. Why must food sovereignty be based on human rights and people's empowerment?

For it to have any substance at all and not to remain at the level of concepts, food sovereignty must be based on human rights, in three senses.

First, it must uphold the right to adequate food for all individuals especially the most vulnerable, and by extension, the collective right of communities to produce their own food and manage their own food systems.

Second, it must uphold the people's prior right to access and use land and productive resources towards meeting their food needs.

Finally, it must uphold the people's democratic right to decide their own food policy framework up to the national level and the means of implementing these policies towards achieving real and long-term food security both at the local and national levels.

Human rights are backed by legal instruments, with states mandated as duty-bearers to respect, protect, and fulfill these rights. Thus, a notion of food sovereignty that is not based on the assertion of human rights—the right to food, the right to produce food, and the right of access to productive resources—will

be nothing but empty talk directed at no one. Food sovereignty addresses itself to state responsibility.

But calling on the state to assume its responsibility of ensuring the right to food is not enough. People must be made aware, organized and mobilized to assert and realize these rights through their own action and initiative, and also through democratic participation in governance, which is the essence of people's empowerment. Thus, food sovereignty must be based on a process of empowering the people, which also fosters their economic, political, cultural and spiritual sovereignty. (AP-PCFS, Introduction, x)

b. Why must food sovereignty be exercised at the level of communities?

Food sovereignty must be exercised, first of all, at the level of communities. It is at that level that people can take initiative and directly exercise their collective right to produce their own food and to access the local resources necessary for food production. It is at this level that the actual producers—the farmers, pastoralists and fisherfolk—can develop cooperative or collective activities in assertion of their food rights, to develop channels of building democratic consensus, and also to join country-level programs and activities in support of food sovereignty.

If the practice of food sovereignty is limited, weak or absent at the community level, the state and other societal institutions will find it difficult to sustainably uphold its principles and pursue its goals at the country level, even if the government is politically inclined or legally mandated to do so. A government may also take an indifferent, formalistic or even hostile position with regards food sovereignty policies and programs, which makes community-level action even more important.

c. Why must food sovereignty also be exercised at the level of nations and states?

The exercise of food sovereignty by the people themselves at the community level provides the most solid basis for entire nations and states to uphold the principles and goals of food sovereignty. At the national level, states must assert food sovereignty as an important aspect of their comprehensive political, economic and cultural sovereignty vis-à-vis other states, and also to further protect and promote the people's food sovereignty in the various modes it is exercised and asserted. (AP-PCFS 2007, Preamble, 117)

How should democratic mechanisms ensure full participation of the people in shaping food programs?

The entire people of a country must fully participate in formulating food policies and programs, to resolve conflicts, balance legitimate interests and achieve consensus (especially in the context of agrarian reform), and also to place national plans and strategies in the context of local and sectoral needs and conditions. Without such full participation, the process risks being commandeered by narrow economic and political interests. The participation especially of marginalized sectors of producers and consumers must be ensured.

Democratic mechanisms must be developed and allowed to play a key role by providing channels of inclusive participation at various levels, from local (community) up to national level. Through these channels, the state and its various agencies, other political and economic institutions, and civil society organizations (including associations and cooperatives of farmers, pastoralists, fisherfolk, women, indigenous peoples), can interact dynamically, produce consensus, and ensure commitments.

d. How is food sovereignty different from food security?

Food security, in its most expansive definition, only refers to the availability, accessibility, sufficiency, and stability of the food supply that a society or people needs. Ultimately, it boils down to whether there is sufficient and affordable food on every table, with no weight given to the question of where the food came from, how it was produced, and what rights are being asserted (or violated).

Food sovereignty, on the other hand, raises food security to the level of human rights and people's empowerment. It emphatically links the people's right to food, their right to produce it, and their right of sufficient access to productive resources (such as land and capital) so that they may be able to produce and consume food.

Thus, the concept of food sovereignty does not merely ensure that people have food, but guarantees that the mass of food producers (farmers, farm workers, pastoralists, and fisherfolk, with special attention to women and indigenous peoples) have enough productive resources to achieve genuine food security. Food sovereignty unleashes the power of the people, their initiative, unity, and strength in numbers, so that they can control, reshape and fully benefit from their own food systems.

Food sovereignty is not in conflict with food security. Rather, food sovereignty has the objective of attaining food security by asserting the sovereign right of the people over food systems, and by pushing for the people's democratic

empowerment. Only then can chronic hunger be eradicated and food security attained. (AP-PCFS 2007, Introduction, x)

5. Why is food sovereignty premised on agrarian reform?

The most persistent condition causing food insecurity, chronic hunger and rural poverty exists in countries and territories where a substantial if not overwhelming majority of the rural population suffer from very limited access and tenure to land, water and other natural resources, and to other livelihood assets such as tools, capital, and production facilities. In the extreme, this condition shows up as the inter-related problems of rural landlessness and land monopoly, much of it due to landlordism and landgrabbing. Agrarian reform is a comprehensive program and set of policies intended to address these problematic conditions.

a. What is agrarian reform?

The central goal of genuine agrarian reform is the distribution of land and other key productive resources to the actual tillers or toilers who raise crops and livestock, harvest fish and other aquatic products, and produce useful goods and services based on their access to these resources. Agrarian reform must also benefit poor landless people who, finding limited employment in urban and non-farming areas, are interested in agricultural livelihoods. (AP-PCFS, §C1)

Expectedly, agrarian reform must be implemented differently in various countries based on distinct geographic, environmental, historical, social, legal, and cultural factors. Some countries have achieved land reform after prolonged social conflicts resulted in a government that could successfully implement an agrarian reform program based on wide support of the peasantry and the rural population. Other countries are still undergoing similar processes, with varying degrees of success or failure. (For additional discussion on factors that may cause failures in undertaking agrarian reform, see Chapter II, Section 1c.)

By the mid-20th century, the basic concepts of agrarian reform have become widely accepted worldwide, even among United Nations agencies. As early as in the 1945 FAO Conference, the need for agrarian reform as a means to economic and social progress was highlighted. The conference also called for “an end to land tenancy systems characterized by inadequate distribution of land, large terrains being put to little agricultural use, exploitation of laborers and extensive rural poverty.” This was followed by the World Conference on Agrarian Reform and Rural Development in 1979, which issued a Declaration of Principles and a Peasant Charter as well. (Monsalve Suárez 2008, 6)

In the most thoroughgoing version of agrarian reform as implemented in some countries during certain historical periods, big landed estates were confiscated by the state with no due compensation to their owners, and distributed free to the actual tillers and other landless toilers. In other cases, the state compensated the private landlords and the expropriated lands awarded to farmers at a certain price.

There are many other variations, such as resettlement of landless peasants to frontier lands; recognition of more equitable land tenure rights; recognition of native or indigenous forms of land ownership favoring the actual tillers; and going still further by establishing agricultural cooperatives or socialist collective farms. One other important component of agrarian reform is providing an equitable and fair process of settling land disputes among the tillers and boundary conflicts between communities. The basic concept remains, however: land to the tiller.

b. How does agrarian reform ensure food sovereignty?

Agrarian reform is the assertion of the right of people to access land and other resources, in order to produce food and realize their right to food. A successful agrarian reform program ensures direct democratic control of food production (and food distribution, to some extent) at the most basic level of households, and settled villages or semi-nomadic herders organized as cooperatives or socialist collectives. In this sense, agrarian reform provides the foundation of food sovereignty, especially at the community level.

Agrarian reform also creates the most favorable condition to jump-start all-sided rural development by ensuring the comprehensive and integral distribution of other production resources in the rural areas, and by helping strengthen and develop rural production through cooperation and technology development. In this sense, agrarian reform supports the assertion of food sovereignty at the country level.

c. Why should agrarian reform also cover forest, rangeland and aquatic resources?

To be truly thoroughgoing, agrarian reform must also include corresponding reforms in resource access and tenurial arrangements in the field of fisheries, forestry and rangeland. The goal is to ensure the people's equitable and effective access to freshwater, marine, forestry and pastureland resources, which generate a sizeable amount of food production and other rural livelihoods. Such livelihoods involve a big number of non-farming fisherfolk, herders, and hunter-gatherers, as well as provide farmers with supplementary products and incomes. (AP-PCFS, §C1)

In many countries, fisheries and other water resources, forestland, and pastureland are public or state-owned lands, and yet have become major productive resources on which rely the livelihoods of a vast number of rural people. In addition, they have been increasingly subjected to privatization and corporate enclosures through long-term leases and partnerships with government. Thus, agrarian reform should apply the basic principle of “land to the tiller” in flexible but equitable ways that benefit the majority of small producers while continuing to recognize the various layers of legitimate access claims such as state (or national patrimonial) rights, indigenous peoples’ rights, and other traditional tenurial rights.

6. What type of rural development must go with agrarian reform and thus enhance food sovereignty?

The impact of agrarian reform must not be limited only to increased food production and more equitable food distribution, but must also involve a wider array of goods and services that contribute to the overall improvement of rural life. Agrarian reform must free up human innovation and initiative, practical applications of science and technology, higher forms of social cooperation, better utilization of natural and economic resources, and appropriate types of industrialization in the rural areas. All these must result in a better quality of rural life, in concrete terms such as better environment, housing, education, health and sanitation services, transportation, and communication—not merely at the level of national statistics and per-capita figures, but at the level of real-life communities and households especially in the rural areas.

a. What is the role of agro-ecology in rural development?

Agroecosystems. The world’s many environments can be classified into ecosystems. Each ecosystem functions as a tightly interrelated complex of animal, plant, and microorganism communities and their non-living matrices of soil, water, and air, which are laid out in a specific geographic location with distinct topography and micro-climate.

Human activities such as agriculture (including pastoralism, fisheries and forestry) may introduce great changes into ecosystems, but they remain as ecosystems. Thus we refer to an agricultural ecosystem, or agro-ecosystem, to mean not just a farm or farming community but also to include the surrounding environment, the farm or farming community coexisting and interacting with its environment.

An agro-ecosystem thus includes not just the crops and livestock tended by humans, but the whole assemblage of plant and animal species that inhabit the vicinity, the surrounding soils and waters, the ecological impact of tillage, irrigation, grazing, and other agricultural practices, as well as the ecological role of human settlements in the area.

Agroecology. Agroecology is the “application of ecological science to the study, design and management of sustainable agroecosystems.” (De Schutter 2011, citing Altieri 1995). In other words, agroecology is the applied science of sustainable agriculture in the context of ecosystems. Agroecology considers the interactions between biophysical, technical, and socioeconomic components of farming systems. (Altieri n.d.)

The identification and study of agro-ecosystems as part of rural development planning and policy-making is, by itself, already a strong recognition of the importance of achieving long-term balance between agriculture and the wider environment. Agroecology, by deriving and accumulating a rich trove of scientifically based and community-tested principles and best practices, should greatly contribute to both agriculture and environment.

Agroecology thus offers alternatives to unsustainable industrial agriculture, and promotes sustainable agriculture and rural development. Agroecology offers immensely greater promise than industrial agriculture because “it is more sensitive to the complexities of local agriculture, and has a broad performance criteria which includes... ecological sustainability, food security, economic viability, resource conservation and social equity, as well as increased production.” (Altieri n.d.)

(See Box No. 1 for examples of agroecological principles and practices.)

Conservation of biodiversity. By applying agroecological principles, agricultural practices must help conserve the biodiversity of ecosystems. On one hand, agricultural productivity depends a lot on numerous species of soil microorganisms, pollinators, and predators of agricultural pests, as well as the genetic diversity of crops and livestock. On the other hand, agricultural ecosystems serve as habitats for many wild plant and animal species, which in turn are a supplementary source of human food during lean months; serve as animal feed, fuel, and raw material for farmers and other rural people. Generally, the more diverse an agroecosystem, the better is its capability to adapt to climate change.

Box 1. Examples of agroecological principles and practices

Cropping systems. In lieu of monoculture (growing one crop at a time over a wide area), agroecology favors agricultural diversity through polyculture (growing a mixture of different crops on the same land, or intercropping), crop rotation (growing different crops in successive years), and integrated farming (right mix of crops, livestock and aquaculture to generate synergies). Agricultural diversity through polyculture, rotation, and integrated farming helps reduce susceptibility to disease (by interrupting weed, insect, and disease cycles), prevents soil erosion, replenishes soil nutrients (through more sources of natural fertilizer from organic waste), and natural sources of livestock forage. In this regard, rural communities must practice biodiversity conservation, both of traditional or indigenous crop, livestock, and fish varieties and of wildlife in the surrounding ecosystems.

Minimal tillage. In certain types of land and crops, minimal tillage has been shown to improve soil structure, which reduces soil erosion and improves retention of water and nutrients. Minimal tillage also increases organic matter which further improves the soil and local biodiversity. This method also reduces labor and fuel costs.

Combating land degradation. Degradation of landscapes can be prevented or reversed by reforestation or reestablishing appropriate vegetation, soil erosion control and soil damage repair not just on cultivated land but also on the surrounding terrain. There are so many methods of doing these, such as terracing, building hedgerows and other barriers, ensuring year-round vegetative cover, controlled tillage, and other soil management practices that maximize farmers' and rural people's initiative instead of relying on massive public works.

Organic fertilizers and pest management. Soil nutrients can be replenished and pests minimized without resorting to chemical fertilizers and pesticides, by maximizing the on-farm recycling of nutrients, use of locally-produced organic fertilizers and pesticides, and more scientific application of fertilizers and pesticides. The replacement of agro-chemicals by ecological methods also helps prevent loss of biodiversity and pollution of the water supply.

Integrated water management. More rational water management ensures supply for multiple uses, such as domestic water, crop irrigation, livestock needs, and aquaculture. Methods for good water management include the use of more efficient water-impounding and distribution/irrigation systems, soil control, and watershed management (which in turn must be integrated with forestry practices).

Conservation of other ecosystem benefits. Agricultural practices must help conserve the other benefits derived from a balanced and sustainable ecosystem, such as clean water, carbon regulation, and natural replenishment of soil nutrients.

b. What is the role of agri-based and appropriate technologies in rural development?

In the push for industrialization, a country may make the mistake of over-focusing on heavy and medium industries, many of which are located in urban areas and compact industrial zones, while rural areas and light industries are left to stagnate. The role of agriculture-oriented technologies is to serve as base for appropriate-scale mechanization and industrialization in rural areas, which in turn ensure that agriculture and rural development are self-sustaining instead of becoming more or fully dependent on urban areas. In particular, rural industrialization must not fall into the corporate-market trap, which only wants to exploit saleable products made by cheap rural labor using cheap local resources, to profit from them in the urban and global markets.

Appropriate-scale mechanization of agriculture. The principles of food sovereignty and agroecology do not reject all kinds of agricultural mechanization, but only those that specialize in unsustainable and chemical-intensive monocultures, and are themselves unsustainable since they emit GHG and pollutants and consume too much energy. What must be developed instead are those types of machinery that serve the needs of diversified farms, function at scales more appropriate for communities and small-scale farmers, and utilize clean and renewable energy.

Food-based industries and processing technologies. In developing rural industrialization, emphasis must be given to those kinds of industries that enhance rural self-reliance and self-sufficiency by producing for local markets, as well as provide rural people with local non-farm jobs and gainful side-occupations. This means giving priority to food-based industries, and to appropriate technologies for food processing, packaging, and storage and handling. Such industries and technologies must not be limited to staple crops such as grain and milled products, but also to fruits and vegetables, livestock and poultry, fishery and other marine-resource products, forest products other than lumber, apiculture (bee-keeping), medicinal herbs, and beverages. This is particularly important to preserve the value of perishable foods, to minimize food wastage, and to enhance food diversity and quality.

Other rural industries and technologies. Other possible types of industries and technologies must be appropriate to the level of development and area-specific needs of agriculture and rural economies. For example, the following points must be considered:

- Rural enterprises must be closely linked to agriculture (whether through backward or forward linkages), to locally available resources, and to rural communities that can provide both labor and market.
- The types of production processes and machinery must be simple enough to be operated and maintained at handicraft level and within the community, without any specialized skills and costly inputs, which are not easily available locally.
- Seasonality of production must be considered, to avoid labor competition with agricultural work that go through cycles with labor-intensive peaks.

These rural industries, technologies and enterprises must give special attention to producing goods, delivering services, and maintaining facilities that increase the productivity and lighten the physical workload and domestic chores of small-scale farmers, and satisfy the other non-food consumer and producer needs of the rural population, such as:

- power generation through small-scale hydroelectric generators, solar panels, etc.;
 - local irrigation and potable water systems;
 - fabrication and repair of farm machinery and other farm facilities (including drying and milling machines, fishing boats and nets, dairy processors);
 - production of natural and organic fertilizers and pesticides;
 - production of goods based on local skills and materials, such as weaving, basketry, pottery, tannery, blacksmithing, etc.
 - production of construction materials and miscellaneous house needs from local sources; and
-

- infrastructure and public works that serve local needs.

c. What is the role of cooperatives in rural development?

The nature and general role of cooperatives. A cooperative is a specific type of voluntary association, whose members jointly own, democratically control, and contribute economically to, a business enterprise in order to meet their own defined economic, social and cultural needs and aspirations. Cooperatives have wide potential and actual roles played in the rural areas, such as in agriculture, handicrafts, health, housing, utilities, commerce and tourism, and finance. (See Box No. 2)

The unique role played by cooperatives, especially in the rural areas, is that they provide alternative organizational and economic linkages between smallholder family farmers, pastoralists, and fisherfolk, on one hand, and the wider economic system and social institutions that exist nationwide. These linkages through cooperatives are, by definition if not always in practice, inclusive, democratic, and directly beneficial to the cooperative's members.

Evidently, agrarian reform cannot go far if it is not accompanied by a comprehensive program of organizing, maintaining, supporting, and expanding the membership and scope of operations of rural cooperatives. In the same way, cooperatives can be a powerful force for rural industrialization (including farm mechanization) that bypasses the fundamental flaws of corporate-owned and profit-driven industry and industrial agriculture.

The challenge facing cooperatives. Faced with the onslaught of neoliberal globalization in the last 30 years, many cooperatives have suffered marginalization and even collapse due to economic crisis situations, worsening social inequities, and substantial shortcomings that underlie governance processes especially in countries of the global South. In recent decades, governments, most development agencies and many NGOs have given very little attention to the development of agricultural and other rural cooperatives. Worse, because of their weakened position, the supposed roles of cooperatives (see Box No. 2) have been distorted and manipulated by States, for-profit corporations, and other groups bearing narrow political agendas. (Costa Pinto 2009)

Despite the adverse impacts of neoliberal globalization and the severe crises of 1997 and 2008, cooperatives remain a powerful force with great potential to contribute to rural development. Worldwide, some 1 billion people are members of cooperatives (mostly in rural areas), and over 100 million people work in them.

Box No. 2. What is a cooperative?

A cooperative is “an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise.” Defined as such, a cooperative is a business enterprise but it pursues broader objectives than other corporate forms.

Rural contexts can host a variety of cooperatives, in agriculture (production, processing, marketing, purchasing and sales), in financial services (banking, credit and loan, insurance), in health, electricity, telecommunications, water, consumer goods and services, housing, tourism, and handicrafts.

Most cooperatives now follow seven internationally recognized principles, namely:

1. Voluntary and open membership
2. Democratic member control
3. Member economic participation
4. Autonomy and independence
5. Education, training and cooperation
6. Cooperation among cooperatives
7. Concern for community

To the extent that cooperatives observe these principles and adapt to local conditions and needs of its constituent communities and sectors, they can maximize the following beneficial roles:

- Create opportunity for employment, income generation, and increase the availability of goods and services;
- Provide grassroots channels for democracy and social dialogue, guided by the values and ethics of cooperativism;
- Transform survival-type activities into legally protected and productive work;
- Mobilize self-help and motivate people to make better use of their self-help potential;
- Prioritize the broader economic and social development needs of their members and the larger community, while balancing these with the need for financial viability (because members are both contributors and beneficiaries);
- Provide much-needed services in rural communities that are often spurned by other types of enterprises who are discouraged by high levels of investment and low rates of return;
- Help address many non-business social and economic concerns such as strengthening community identity and providing urgent relief especially in crisis situations;
- Are particularly valuable for women, indigenous people, and disabled persons, since cooperatives compensate for their often limited resources, mobility and “voice”;
- Withstand crises better than their capital-centered counterparts;
- Tend to choose sustainable development options because of their member-driven nature; and
- Encourage modernization by facilitating the dissemination of new technologies and processes.

Sources: ILO, “The Promotion of Cooperatives,” Recommendation, 2002 (No. 193); ILO, “Cooperatives for People-Centred Rural Development,” 2011; International Co-operative Alliance website, last updated 26 May 2007. Accessed 1 May 2012. <http://www.ica.coop/coop/principles.html>

Certain types of cooperatives, such as those involved in micro-finance, have shown particular resilience to crisis in comparison with their corporate capitalist counterparts.

d. What types of financing and market development must be pursued in the rural areas?

Under the present system, hundreds of millions of smallholder farmers and other rural producers do not have enough capacity to sell their goods direct to the market and to self-finance their own production needs or domestic deficits. In desperation, they become prey to a variety of oppressive money-lending practices, unfair contract-farming arrangements, and merchant malpractices such as overpricing of inputs, farmgate underpricing, hoarding and other types of price and supply manipulation.

These abuses must be eradicated by enforcing strict regulations on rural financing and market systems. At the same time, alternative mechanisms for financing and marketing must be adopted and developed by the small producers themselves, through their associations and cooperatives, through equitable partnerships with small and medium-scale enterprises involved in the value chain, and with the backing of government policy and technical support.

Fluctuations and imbalances in production and consumption (supply and demand imperfections) for agricultural products will often happen—with positive and negative impacts—even under a stable and well-planned economic system, successful agrarian reform, and food sovereignty. These are due to changes in environmental conditions, weather patterns, local demographics, and consumption patterns, among others.

Appropriate types of financing and market development in the rural areas must therefore be pursued as part of an integrated national program to develop agriculture, related rural livelihoods, and food systems, in terms of their long-term economic roles and public benefits, sustainability, market stability, and financial viability.

Market development. In the context of upholding food sovereignty in each country, the most important market development thrust is to prioritize the expansion of the domestic market, and to develop foreign markets only on the basis of assured national self-sufficiency and fair terms of foreign trade. Imports into local markets, where allowed, should be highly regulated to ensure they do not undermine but rather enhance national self-sufficiency and local production.

Another important market development thrust is to ensure distribution channels and pricing and allocation mechanisms (especially in food, other basic goods, and rural producers' goods) to ensure access at all times by the poor and marginalized sectors. In this regard, traders' malpractices that produce market distortions victimizing both rural producers and end-consumers, such as overpricing, farmgate underpricing, hoarding and other forms of price and supply manipulation, must be combated and eradicated.

Appropriate country-level and community-based programs must reflect these priority thrusts in market development, such as building rural infrastructure (especially farm-to-market roads); bulk transport (railways, domestic shipping) to connect the country's various regions and localities; and nationwide networks of facilities for storage, processing, and distribution channels connecting farmers to producers' markets and eventually to final consumers.

The government must exercise a whole range of policy options that ensure public control and community participation in these programs, such as:

- ensuring that infrastructure and key distribution facilities remain publicly owned and operated, including bulk trade in agricultural goods;
- encouraging producers' and consumers' cooperatives;
- strict regulation of private operations in trading, transport and storage; and
- defining and enforcing a framework of rules governing the allocation of basic goods in terms of quantity, price, and geographic distribution.

Financing. The practice of food sovereignty and agrarian reform provide favorable conditions for smallholder farmers, pastoralists and fisherfolk to self-generate sufficient finances, which they need to cover seasonal or temporary deficits in their working capital, to expand their main line of production, develop other farm and off-farm side occupations, help defray unforeseen expenses, and contribute as well to a wider range of rural development projects.

The problem of fragmented financial resources, which is typical of rural communities in developing countries, can be solved by cooperatives involved in savings, credit and investment operations, and by credit and savings associations. Best practices, which are continually drawn from the vast experience and

successes in micro-financing by rural communities throughout the world, should be disseminated, validated and further enriched.

If democratically controlled and managed, small producers' financial cooperatives can develop and sustain the capacity to meet a wide if not the full range of financial needs of their members, including various types of deposits and loans, various types of insurance, and even payment services and money transfers. Women's participation in management as well as women's equal access to financial services must be assured. Such financial cooperatives can make adjustments to the seasonality of rural production, as well as susceptibility to production failures due to epidemics, droughts, floods and other natural or man-made disasters.

At the same time, full government support (in the form of public investments, soft loans, and grants, as well as policy and technical support) remains an important supplement to rural self-financing, especially to finance major public works projects, to help in the startup of rural projects, and during times of economic instability and disasters.

As much as possible, big private financial institutions and intermediaries seeking investments or offering external loans to small rural producers should be avoided or regulated, since they are more liable to create dependencies and distortions. Likewise, usury and other malpractices by local financiers, merchants and landlords involved in money-lending, private rural banks, and big financial institutions with rural operations must be stopped. In all cases, the government must exercise strict regulation of lending terms, especially interest rates, to ensure loan affordability by small rural producers.

7. How should food systems ensure the people's all-round welfare and enjoyment of rights?

In the context of food sovereignty, all food systems from the national level down to the local community level are controlled and managed by the people through various government, joint public-private, and cooperative mechanisms. On the basis of this democratic control and management, each food system—whatever its role in primary production, processing, storage, transport, or distribution—should contribute to the people's all-round welfare and enjoyment of rights.

The principal role of food systems, evidently, is to assure adequate access to food for everyone. But they also have other roles, which may be secondary or supplementary but still important to the whole of society or particular

communities and sectors, such as in environmental protection and biodiversity conservation, in maintaining cultural diversity, and in maintaining peace and cooperation.

a. What is meant by assuring adequate access to food for everyone?

Food systems must assure every person of adequate access to food, meaning, access in all places and at all times to safe, nutritious, and culturally acceptable food in sufficient amounts (as already discussed in Section 1a of this chapter).

In the context of food sovereignty, this means that each country must work towards and eventually ensure national self-sufficiency in all staple foods and major food groups and thus ensure overall availability: by developing its capacity in agricultural and food production; and by maintaining sufficient buffer stocks for emergencies such as droughts, floods, and other disasters resulting in shortages. Based on national self-sufficiency, a country can impose a policy that food imports must be the exception and last resort, rather than the rule and first choice.

Second, aside from ensuring food availability, each country must also ensure food accessibility and stability of food flow in all places and at all times: by urging rural communities and households to ensure local consumption first before they sell to the market; by maintaining a nationwide network of facilities for storage, transport, and distribution (whether wholesale, retail, or emergency relief); by implementing appropriate allocation policies and plans especially regarding volume and price structure, including the option of food price controls, food subsidies, and free distribution for those with insufficient incomes or in disaster-affected areas.

Third, each country must also ensure food quality and safety, not just in production and distribution systems, but in actual food preparation and delivery to end-consumers. This means maintaining specialized services for educating and training the public on nutrition and food handling, for enforcing food laws and regulations, for handling possible contamination, and for urgent relief services needed in disaster areas, refugee centers, and other facilities serving women, children, the elderly, and the disabled.

(See Chapter IV, Section 1e for policy details.)

b. How can food systems help conserve the environment and genetic resources?

Agriculture, food production, and food itself are inextricably linked to nature and the environment. In countless and complex ways, agriculture, herding, aquaculture, fisheries and forestry are so dependent on natural cycles, biological (including microbiological) processes, and genetic diversity that it is impossible to separate them—even under controlled greenhouse or laboratory conditions.

Thus, in the context of food sovereignty, governments and communities involved in agriculture and food systems should actively conserve the ecosystems where they are embedded, including agricultural and wildlife biodiversity, and the overall rural environment. This means adopting, for example, the following conservation practices:

- adopting the principles of agroecology and developing its technologies and practices, which reflect scientific but sustainable adaptations of farming, animal-raising, fishing, and forestry that conserve local ecosystems and natural resources;
- conserving local varieties of grain and other crops, poultry and livestock, and even fermentation stock—which have all finely adapted to the local environment through many generations—preferably through continued use;
- rejecting the economically unsustainable, environmentally destructive, and biologically unsafe technologies and practices of industrial agriculture, including the intensive use of chemicals, non-renewable fuels, and genetically modified and patented breeds for the sake of higher production and profit.

By maximizing the multifunctionality of agriculture, rural people can create further public goods that directly or indirectly benefit environmental protection. (See further Section 8c of this chapter, on the benefits of multifunctionality.)

c. How can food systems help maintain cultural diversity?

Since food systems in the context of food sovereignty can help conserve local ecosystems and the environment as a whole, they also help conserve the economic and social sustainability of local communities that live and depend on those ecosystems. In this sense, food systems indirectly maintain cultural diversity, which draws its vigor from the sustainable existence of communities.

This is most especially true among (but not necessarily limited to) many indigenous peoples in various parts of the world, whose livelihoods, lifeways and knowledge systems are generally more fine-tuned to the ecosystems of their home territories.

In a more fundamental sense, the production, preparation, and the partaking of food itself are fundamental human needs that are satisfied not only in purely economic or technical ways; they always satisfy cultural needs and embody key cultural elements of the specific community and of the wider society. As emphasized earlier (in Section 1a of this chapter), the right to food means adequate access not just to any kind of safe and nutritious food, but to culturally acceptable food.

In the context of food sovereignty, therefore, communities that assert their right to food and empower themselves to produce their own food and maintain their food systems also, in the process, reassert many elements of their cultural diversity. Indeed, village-wide feasting and its cultural expressions have always been tightly integrated into the farming, herding, or fishing cycles of the community, which is especially evident among indigenous peoples.

8. What is the relevance of multifunctionality in agriculture and rural development?

In the predominant model of agricultural modernization, also called industrial agriculture, ever-increasing production and profit in the context of market economies are seen as the main goals while other functions recede in importance. In past many decades, this approach has led to a massive reshaping of the rural landscape, loss of natural resources and biodiversity, agro-chemical pollution, and production methods that stressed large volumes and attractive packaging to ensure saleability and profitability, often at the expense of real food quality.

The concept of multifunctionality as applied to agriculture and rural development emerged in recent decades partly in response to the problems associated with industrial agriculture, and in support of many rural and indigenous communities who were defending and in many cases successfully proving the viability of their more traditional modes of agriculture and rural lifeways. First mentioned officially at the 1992 UN conference in Rio (Agenda 21, Chapter 14), multifunctionality has gradually been adopted by the various threads of international discourse on agriculture and sustainable development.

a. What is meant by multifunctionality in agriculture and rural development?

Agriculture (including pastoralism, forestry, fisheries and hunting-gathering), seen as a general economic activity, produces basic material goods such as food, fibers, oils, and many other raw materials for construction and handicraft. Apart from producing these basic necessities, agricultural practices can also generate other goods and services deemed beneficial to the community and the wider public. That is the main meaning of multifunctionality.

Seen through this lens of multifunctionality, the goal of rural development is not merely to improve the physical and social matrix of agricultural production. Rather, rural development aims to enable rural communities to conserve and evolve their distinctive lifeways and linkages, ensure the harmonious development of all aspects of rural life, and strengthen synergies with urban areas, such that they generate a wider range of benefits to rural people and society at large.

Giving full play to the multifunctionality of agriculture and rural development is one important component in the overall scheme of sustainable development.

b. How did the concept and practice of multifunctionality emerge and evolve?

With no benefit from formal science but only through generations of trial-and-error experience, most traditional communities have accumulated a rich body of agricultural knowhow combined with an intuitive grasp of how to adapt to and benefit from the natural cycles and patterns of their environment.

Much of this folk knowledge contains the seeds of the modern concept of multifunctionality, and is being validated by the biological and environmental sciences. Tentativeness remains in the actual practice of multifunctionality on the ground, and some aspects are even being appropriated by big agro and tourism businesses for their own interests. Increasingly, however, the best practices of farmers, rural communities, environmental and agro-ecological advocates worldwide continue to expand and be validated by science.

c. How can countries and communities build and benefit from such multifunctionality?

Protection of the natural physical environment. Many rural and agricultural practices—including patterns and methods of plowing, irrigation, cropping, herding, and recycling waste—are geared towards conserving and protecting natural landforms and contours, topsoil, waterways and water sources. These

conservation practices greatly help in ensuring the stability and regularity of natural cycles, and on that basis, the sustainability not just of crop and livestock growth but of local resources and human settlements.

Multifunctional public works. In the context of multifunctionality, rural and agricultural practices also include public works that combine multiple functions in the field of agriculture, environmental protection, water systems management, control of natural hazards, power generation, and others. For example, steep slopes can be terraced, reforested or agro-forested to improve drainage and prevent landslides and erosion, while forests are maintained as watersheds and sustainable sources of forest products. Networks of dikes, mini-dams, mini-reservoirs and water canals can be built along selected basins, riverbanks and tidal flats for irrigation, potable water supply, flood control, aquaculture, power generation and transport.

Biodiversity. A multifunctional framework for agriculture and rural development encourages farmers, pastoralists and fisherfolk to further develop polyculture, to conserve and rediscover traditional crop and livestock varieties, and to set limits in exploiting forest, fishery and other resources, while veering away from unsustainable and eventually harmful monoculture and industrial-harvesting practices. Thus, a multifunctional approach helps protect plant and animal biodiversity, not only in the context of conserving the genetic base of crops, livestock and fisheries to ensure sustainable and diverse food production, but also in the context of preserving overall biodiversity in all types of global biomes and ecosystems, which has generalized and long-term benefits for humanity.

Cultural heritage. In the context of multifunctionality, rural communities are better able to achieve long-term balance between the factors of land, resources, and people. At the same time, factors that unduly disrupt local demographics, lifeways, and environment can be regulated if not avoided. Such conditions help to protect the area's natural and cultural heritage, including local languages, traditional lores, arts and crafts, and sites of geological, biological, historical, and scientific interest. These benefits are valuable both to the area's inhabitants, especially its indigenous peoples, and to the country as a whole.

IV Policy proposals that enhance food sovereignty

The main sets of policy proposals relating to food sovereignty, which are presented in this chapter, did not just emerge from nowhere, or straight out of legislative halls and corporate boardrooms. Rather, they were forged through many campaigns and conferences involving social movements and civil society organizations, and multi-stakeholder processes as well, at the local, national, and global levels.

Food sovereignty as a policy framework and the specific policy proposals for implementing and enhancing it are comprehensively advocated and enriched in practice by an increasing number of people's and peasants' movements. Food sovereignty is in fact now being listened to and seriously considered if not officially adopted by some UN agencies, country-level governments, and political parties, in addition to the peasant and other people's movements that developed it in the first place.

1. What overarching principles and goals should guide food policy?

The following are a summarized reiteration of the principles and goals guiding food policy, which have been expressed and elaborated in Chapter III. They are presented here anew in concise form, followed by more specific policy proposals.

a. Right to food is extension of basic human right to life

Every human being has a fundamental, inalienable right to safe, nutritious, adequate, and culturally appropriate food. As food is most essential to life, the right to food is an extension of the basic human right to life.

b. Food systems are a responsibility of the community and society

Systems of food production, storage, processing, distribution and exchange are a preeminent responsibility of the community and society. Assuring food stock, securing resources for food production, equitable distribution of food, and

democratic management of the said systems must be controlled by the community and ensured at country level. First priority must be given to the majority of small food producers, with government support, while preventing ownership and control over resources and production by big private corporations.

c. Food self-sufficiency must be basic to food policy

Food policy must be premised on achieving self-sufficiency by giving priority to domestic food production through the local food producers, particularly farmers, pastoralists, fisherfolk, and indigenous communities, among others. In giving priority to domestic food production, such policy enhances the livelihood of people. As a corollary, food policy must reject export-oriented production that mostly benefits foreign markets and big agribusiness, erodes food self-sufficiency, entails loss of livelihood for many small producers, and exploits workers in export-oriented food industries.

d. Food production programs must empower small food producers

Food production programs must be premised on mobilizing the majority of small food producers and providing them, especially the marginalized sectors like women, Dalits and indigenous peoples, access to resources such as land, water, seeds and livestock.

e. Access to safe, nutritious and adequate food by everyone must be assured

Food policy and food programs must assure access to safe, nutritious, and adequate food for everyone at all times, first, by ensuring that rural communities produce their own food and prioritize their own food needs; second, by ensuring sufficient income so that people who can't produce their own food can access them through the market; and third, by distributing free or subsidized food to those who otherwise cannot access food due to conflicts, calamities, and other severe crisis situations. Regulations and other mechanisms must ensure food quality and safety to safeguard the interests of both small producers and consumers, in processes that involve the full participation of the people.

f. Food programs must be based on the people's full participation

Food production and distribution programs at the community and country levels must be formulated, established and developed with the full participation of the people. Such programs must recognize and promote the initiative of the people to assert their food rights. The participation of marginalized sectors of producers and consumers must particularly be ensured.

g. Food and food production are linked to nature and the environment

Agriculture, food production, and food itself are inextricably linked to nature and the environment. Thus, agriculture and food systems should be biodiversity-based, which will guarantee ecological and social sustainability. Agroecological principles, technologies and practices must be adapted, while the unsustainable technologies and practices of industrial agriculture, including intensive use of chemical, biotech-based methods, and patents on life, must be rejected.

h. Food and food production are linked to culture

The production, preparation, and the partaking of food itself are fundamental human needs that embody cultural elements and functions of a community and the wider society. At the same time, food systems in the context of food sovereignty also help conserve maintain cultural diversity by ensuring the economic and social sustainability of communities. Such linkages between food systems and cultural diversity must be recognized, conserved and promoted.

i. Food must be a tool for peace and cooperation, not a weapon of war and domination

As food sustains life and society, food must remain an element of peace and cooperation among communities and among nations and societies. Food sovereignty provides excellent conditions for nations and communities to engage themselves in peaceful, cooperative, productive, and mutually beneficial activities. Turning food into an instrument for domination and war runs counter to norms of humankind in relation to food, and must be opposed.

2. What policies are needed to ensure people's all-round access to adequate food?

Each country must pursue comprehensive policies and programs on agricultural production, food storage and processing, distribution, trade, pricing, food relief and subsidies, and nutrition, in addition to closely related programs such as agrarian reform and rural development, in order to realize the right to adequate food in all its aspects.

To truly eradicate food insecurity at the roots, however, such policies and programs must be grounded on the principles of food sovereignty, eliminate oppression and exploitation, pursue economic democracy and sustainability, and promote collectivism.

a. Country-level and community-based food programs

Agricultural and food policies and programs must be integrated at the country level to ensure that all the nation's resources are mobilized and optimized, geographical and sectoral imbalances are resolved, and overall self-sufficiency is enhanced. At the same time, such national policies and programs must allow for diversity and adaptation at the various sub-national and local levels.

Community food programs particularly in the rural areas must promote self-reliance in production, food self-sufficiency, and equitable access to food especially among marginalized sectors. Country-level food programs and community-based food programs must support each other. (AP-PCFS, §B1 and §F1)

Special attention must be given to food programs appropriate for urban areas, including community gardens and neighborhood-based food systems that can supplement the residents' needs, especially among the urban poor communities but also among the middle classes. Such urban initiatives must be encouraged and given concrete support.

b. Trade union rights and employment

Those sectors of the population who do not produce their own food, by choice or circumstance, must be assured access to basic food and other needs through gainful employment with dignity. In this regard, workers' wages and other working people's incomes must be adequate in amount and regularity. Trade union rights and workers' welfare must be promoted and protected so that living wages, job security, and working conditions are assured. (AP-PCFS, §B3)

c. Food distribution

There must be layers of food distribution programs, from community-based to national programs, with one layer playing distinct roles while supporting the other layers. Such programs, to be truly pro-people and proactive, must always be attuned to the culture and economic life of the people, and must therefore anticipate and meet the people's variable needs. Thus, consultation and participation must be instituted as a policy in food distribution.

On that basis, adequate food stocks must be assured through efficient procurement, prioritizing domestic sources to support local production. Both fair farm-gate prices for agricultural products and affordable consumer prices for basic food items must be guaranteed. To ensure adequate access by even the lowest income groups, the government must implement effective price control

and similar mechanisms, including free or subsidized staple food in situations of public emergencies and severe deprivation. (AP-PCFS, §E1)

Measures to regulate trade and investment should also be in place to prevent corporate control as well as monopoly pricing. Trade and investment regulation is also meant to promote and protect the local market and its main food producers. Develop local markets from the community level that ensures effective access by small producers and systematically destroy local and transnational monopolies. (AP-PCFS, §E2)

d. Price control and food subsidies

Price control laws and similar mechanisms must be put in place to ensure affordable and stable prices for staples and other basic food products, and to combat hoarding, speculation, and other abuses by unscrupulous food traders. It is the State's responsibility to minimize food price volatilities, to correct imbalances between fair farm-gate prices and affordable food prices for its urban and other non-farming population, and to provide free or subsidized food for the very poor and marginalized. (AP-PCFS, §B4)

e. Opposition to agribusiness and food monopolies and monocultures

Monopolistic operations and practices by food-based industrial giants and the closely-related monocultures promoted by their equally monopolistic food retailers, as symbolized by iconic companies such as Nestle, Coca Cola, and MacDonal'd's, are incompatible with an equitable, sustainable, and democratic food system. Such monopolies and monocultures must be stopped because they erode agricultural diversity, food diversity, and food sovereignty in general. (AP-PCFS, §B5)

Governments, consumer groups, and small producers' associations must pursue anti-trust legal action; strictly regulate food and agribusiness giants to block monopolistic practices; promote popular education and consumer action such as boycott campaigns and campaigning for alternative foods and food systems; and support small food producers' direct linkages with food consumers. As awareness and advocacy for food sovereignty spreads among the public, the potential for small independent markets (especially those based on agroecological produce) to compete with giant food retailers will also grow.

There is a need to restore substantive and creative communication between food producers and food consumers and a need to stop the breakdown of exchange and

knowledge between producer and consumer, due to corporate industrial system that lengthened the chain of links dividing the two.

f. Ensuring nutrition and potable water

On the basis of successful programs in increasing and diversifying food production, distribution systems must ensure that end-consumers—especially those in poorer regions and sectors at risk of not getting equitable benefits—derive the most benefit through such services as proper nutrition, potable water, and food safety.

Particular attention should be given to sectors vulnerable to malnutrition such as women, children, the elderly and the sickly. There must be campaigns to deliver nutrition services and educate people on good nutrition practices, including promotion of breastfeeding and discouraging junk food. Adequate supply of potable water, preferably free or at subsidized cost, must be ensured for every community and household.

g. Food safety and standards

To protect the people's welfare and environment, government must formulate and enforce regulations on food safety and food standards, supported by technologies and facilities from post-harvest and industrial processing until household handling, to ensure that food is free from pesticides, harmful chemicals and other toxicants. All genetically modified food including those intended for feedstock should be identified and taken out of the market. Regulations on food safety and standards should be formulated with the full participation of people.

On the other hand, government must make sure that food safety standards are not used to undermine people's food rights and designed to benefit only corporate giants in food and agribusiness. Questionable pacts such as the WTO Agreement on Sanitary and Phytosanitary Standards, which serves to weaken community and people-based standards in order to serve corporate interests in international trade, should be rescinded altogether. (AP-PCFS, §F2, §F3 and §F4)

3. What policies are needed to develop people-based food production systems?

The industrial system of food production, combined with corporate market control, fails the test of economic sustainability and social equity despite its tremendous capacity to produce food. In contrast, people-based food production systems can achieve sustainability and equitability because they rely on community-level initiatives, innovation and democratic mechanisms.

a. Genuine agrarian reform

A genuine agrarian reform program entails the breakup of large privately owned or leased landed estates and redistributing these, together with other available lands and productive resources, to landless tillers and other rural people who eke out similar livelihoods but are trapped in inequitable tenurial arrangements.

Agrarian reform answers the long-standing need and aspiration of the peasantry to own the land they till and to enjoy sufficient access to other resources. By ensuring the comprehensive and equitable distribution of production resources and strengthening production capacity in rural areas, agrarian reform addresses key problems of underdevelopment that affect most countries of the global South. (AP-PCFS, §C1)

Listed below are the most important policies and policy considerations that should form the foundation of a genuine agrarian reform program:

First, the tillers must own the land they till. There must be equitable and free distribution to all tillers. In land distribution, priority must be given to poor, landless or marginalized peasants already tilling the land, followed by other poor people who are not farmers but are ready to till the land (with due weight given to their other sources of income). Absentee landownership is incompatible with this agrarian reform principle, and should not be allowed.

Second, agrarian reform must break up the power of landed elites by expropriating their big agricultural estates. Their effective private control of other major productive resources (pasturelands, fishing grounds, forest concessions) must also cease. The reform's coverage must be comprehensive. Meanwhile, exploitative tenurial arrangements must be revamped, and abuses such as unjust high rents, loan interest, miscellaneous access fees, bonded labor and others, must be stopped.

Resource claims and extractive activities by big private firms, such as mining and logging concessions, plantations, ranches, fishpens, water-drawing operations, tourism services, and similar operations must be stopped, expropriated, restructured, or strictly regulated to ensure compatibility with the goals of agrarian reform. Those expropriated properties that cannot be productive if subdivided into small parcels should be owned by appropriate cooperatives or public agencies.

Third, agrarian reform must be undertaken as a political act from start to finish. On one hand, it is an exercise of state power, with the government instituting fundamental legal changes in the framework of land and resource ownership. At

the same time, agrarian reform is driven by direct action of the peasantry and other rural people who are its most direct beneficiaries and must therefore also be direct participants in formulating and implementing the program. For agrarian reform to succeed, the government must draw strength from the democratic participation and support of the people throughout the process. Economic democracy, which means that peasants' rights to livelihood and decision-making are upheld, must suffuse every aspect of agrarian reform and rural development.

In this regard, advocates and policymakers should learn from the failures of the market-led model of agrarian reform such as that pushed by the IMF and World Bank, which allows market forces to dominate its perspective, design, and implementation, relegating it to a mere real estate transaction between landlord and peasant, with the state becoming a broker that sets the price and terms of sale.

Fourth, land redistribution and tenurial reforms must follow rules of equity and fairness in order to maximize the benefits for the overwhelming majority of the people and to avoid extreme social and economic imbalance. In every area subjected to land reform, due consideration must be given to many specific factors such as land availability, family size, terrain and land quality, type of crops and livestock, traditional patterns of tenure (including indigenous land rights), prior claimants and disputes, ecosystem fragility and carrying capacity, land valuation and compensation, and technical issues of surveying and delineation. These factors will greatly vary from country to country, and substantially so within each country; they must be considered in formulating and implementing the agrarian reform program.

Fifth, agrarian reform must promote cooperatives and the collective spirit, and not just stop at land redistribution that creates an atomized mass of smallholder farmers and other rural producers. It must also promote alternative pathways to sustainable development in the rural areas. Otherwise, industrial agriculture and new forms of landlordism will reassert themselves, negate the gains of agrarian reform, and leave poor farmers and other rural people worse off than before. Land laws and development programs must encourage cooperative ownership. Renewed land consolidation in the hands of private corporations and new landlords must be prevented through legal limits in land retention and land sales.

b. Self-sufficiency and self-reliance

Self-sufficiency in food (especially staple food) and in other basic goods must be measured not merely in terms of sufficient supply, whatever its source, but more

importantly in terms of sufficiency through domestic production and not through importation; this is the full and sustainable meaning of food self-sufficiency.

Self-reliance, on the other hand, is another distinct policy that is closely linked to food self-sufficiency. In the context of food production, self-reliance means not just achieving food self-sufficiency through domestic production; it means undertaking types of domestic food production that rely mainly on local resources instead of depending on external investments and inputs.

Each country and its government must rely on the initiative of its people, principally its farmers, pastoralists and fisherfolk, but also other productive sectors of society, to develop self-sufficiency in food and self-reliance in food production not merely at the national level, but even at local levels wherever food production is viable.

To achieve and sustain food self-sufficiency, the government has a central role in national food planning, but it must also support food planning at lower levels and for various sectors. Food planning must regularly monitor and analyze various production and consumption trends, and result in specific policies, public campaigns, and achievable projects that result in concrete achievements in food production.

c. Emphasis on small producers

In formulating food-related development strategies and plans and making decisions on specific projects, governments need to set clear-cut policies on the question of economies of scale, particularly on which to prioritize or ways to balance: small-scale, medium-scale, and large-scale agriculture and food production. Criteria and indicators must be well-defined, and anchored on economic efficiency and viability, social equity, and environmental sustainability.

There is substantial and growing evidence in recent literature that in comparison to industrial agriculture and other agribusiness operations, which are typically conducted on large scales, small-scale and medium-scale food production are more efficient, more equitable, more environmentally friendly, and thus more sustainable. This is especially because agriecological principles and practices are best implemented by the actual tillers themselves. (UN Human Rights Council 2010, 5) Even in cases where industrial practices seeped down to smallholder farms, such as in Asian ricelands under the Green Revolution, many peasants eventually scaled down the use of agrochemicals and reverted to traditional practices.

Box 1. The case for giving priority to small producers

Why small family farms are more sustainable than a modern plantation economy

“Compared to the ecological wasteland of a modern export plantation, the small farm landscape contains a myriad of biodiversity. The forested areas from which wild foods, and leaf litter are extracted, the wood lot, the farm itself with intercropping, agroforestry, and large and small livestock, the fish pond, the backyard garden, allow for the preservation of hundreds if not thousands of wild and cultivated species. Simultaneously, the commitment of family members to maintaining soil fertility on the family farm means an active interest in long term sustainability not found on large farms owned by absentee investors. If we are truly concerned about rural ecosystems, then the preservation and promotion of small, family farm agriculture is a crucial step we must take.”

Why agriculture must develop in ways that increase smallholders' incomes

“Food availability is, first and foremost, an issue at the household level, and hunger today is mostly attributable not to stocks that are too low or to global supplies unable to meet demand, but to poverty; increasing the incomes of the poorest is the best way to combat it. Cross-country comparisons show that GDP growth originating in agriculture is at least twice as effective in reducing poverty as GDP growth originating outside agriculture.

“But some types of investments are more effective than others in achieving that objective. The multiplier effects are significantly higher when growth is triggered by higher incomes for smallholders, stimulating demand for goods and services from local sellers and service-providers. When large estates increase their revenue, most of it is spent on imported inputs and machinery, and much less trickles down to local traders. Only by supporting small producers can we help break the vicious cycle that leads from rural poverty to the expansion of urban slums, in which poverty breeds more poverty.”

Source: IPC 2006, 17; UN Human Rights Council 2010, 5

Thus, programs to develop agriculture food production must be anchored on mobilizing the majority of small food producers and providing them, especially the marginalized and most neglected sectors (including women, indigenous communities, upland farmers, fishing communities, herders, forest hunters and gatherers), ample access to the most important local resources and support services.

In promoting local industries with backward and forward linkages to agriculture and food production, such as fabrication of farm and fisheries implements, renewable fuels, and food processing, preferential treatment must be given to small and medium-scale enterprises (especially those operating in or near rural communities), instead of the big and mostly foreign competitors that are putting the former out of business.

d. Women's rights in food production

Considering that generally, rural women spend longer hours on farm work doing the more tedious and back-breaking tasks, government policy must ensure that all universally recognized women's rights are respected, protected and fulfilled in the course of food production.

Women must benefit equally with men in agrarian reform, especially with regards access to land and other productive resources. Their particular capacity, knowledge and knowhow, such as in seed conservation, animal husbandry, food storage, food processing and the like, must be recognized, encouraged and remunerated. (AP-PCFS, §C3)

Women must have the right to hold title to land in line with gender equality. Reforms in national family and inheritance law, and also in customary law, must be instituted. (IPC 2006, 22) Women must receive the same rights of tenure, access and participation in management as men. Also, there must be more equitable division of labor in both agricultural work and domestic work.

In producers' organizations, agricultural cooperatives, farmworkers' unions and other organizations, equal women's membership and representation must be assured. Likewise, women's participation in management and their equal access to the organization's or cooperative's services and benefits must be assured.

Governments must ensure that labor laws and labor standards apply not just to urban industrial workers but also to the rural work force, many of them women.

e. Indigenous peoples' rights in food production

Indigenous peoples are estimated to make up some 5% of the world's people but they own, occupy or use (generally by customary rights) up to 22% of the world's land. Legally, they own around 11% of the world's forests, and an estimated 60 million of them depend totally on forest resources for their livelihood. (UNDP-HDR 2011, 54-55)

Thus, the most crucial policy must be for the state to recognize, protect and promote indigenous peoples' land rights, which are part of their rights to ancestral domain and self-determination. On that basis, their indigenous food systems, and their cultures into which these food systems are integrated, must also be protected and promoted. (AP-PCFS, §C4)

The right of indigenous peoples to manage their land, forests, water and other common property resources within the home territories, using customary law and tradition, must be guaranteed. (IPC 2006, 22-23) Their resources and territories must particularly enjoy protection against intrusive business operations and development projects, except those that have acquired their free, prior and informed consent in addition to having undergone the various impact assessments as required by environmental, human rights, and other laws.

In formulating and implementing agrarian reform programs, governments must ensure that indigenous peoples participate in the whole process, so that they can contribute to policy-making and planning, and also to ensure that their own land rights and customary laws on resource access are respected. Governments must take particular care that in resettlement programs of landless peasants on what is officially or presumably public land or frontier land, they do not violate indigenous peoples' land rights and generate land disputes.

Indigenous peoples' knowledge systems are rich with lessons in agroecology as well as technical knowhow in food, beverage, and herbal processing. These ancestral legacies are now increasingly recognized as of global significance and useful for other peoples. These must be conserved and further developed, with the full participation of the indigenous peoples themselves.

f. Agricultural workers' rights

Due to high unemployment and underemployment rates, wage workers in the rural areas are mostly temporary and casual, with poor labor laws and standards coverage and monitoring, and minimal unionization. They include plantation and other farm workers, ranch hands, fishery workers, agroforestry workers, and the

like. They may also include food milling and other food processing workers if their workplaces are attached to plantations, as in the case of sugar mills and canneries.

Government must thus exert all efforts to extend the benefits of agrarian reform and rural development to these workers, whether by allocating parcels of farmland for them to own and till, or by ensuring that their rights as workers (however casual or temporary) are recognized and protected by labor laws and standards. These rights must be defined in concrete terms such as minimum wages, benefits, job security, working conditions, occupational health and safety, and union rights. (AP-PCFS, §C5)

Particular attention must be given to the working and living conditions of migrant agricultural workers—often composed of entire families—who are trucked in and out by contractors, billeted in shanty-like work camps, and made to work long hours under the most dangerous and strenuous conditions, including exposure to chemicals, fumes, and dangerous machinery. (Hurst et al. 2005) Various forms of forced or bonded labor, amounting to human trafficking and slavery and which often victimizes women and young girls, must be stopped. Another immediate priority is to eliminate all forms of hazardous agricultural work carried out by child laborers.

4. What policies are needed to develop biodiversity-based food production systems?

Governments, agricultural producers (especially through farmers' associations and cooperatives), agricultural research networks, and a wide range of societal institutions (including private companies willing to partner with farmers' groups on equal footing) should contribute in developing biodiversity-based food production by upholding, applying, and disseminating the principles of agroecology and similar approaches to sustainable agriculture as well as the best practices drawn from worldwide experience.

The move towards sustainable agriculture or agroecology should be based on community initiatives. As UN Special Rapporteur on the Right to Food Olivier De Schutter said, "Agroecological techniques are best spread from farmer to farmer, since they are often specific to an agroecological zone." (UN Human Rights Council 2010, 15-21)

At the same time, governments must play a key role in the transition by allocating adequate amounts of public expenditures (and encouraging private financing) to

Box 2. Agricultural workers, by the numbers

- Worldwide, there are an estimated 450 million waged agricultural workers, which is 40% of the total workforce in agriculture of some 1.1 billion.
 - Of this wage-earning agricultural workforce, women generally account for 20 to 30 percent; the figure rises to 40 percent in Latin America and the Caribbean.
 - Enforcement of minimum wages is widely thought to be difficult if not impossible in rural areas due to the mostly informal nature of agricultural employment. No comprehensive survey or data sources are available to enable any assessment of minimum wages in agriculture.
 - Agriculture is one of three most dangerous occupations (along with mining and construction). The ILO estimated in 1997 that 170,000 on-the-job fatalities occur in agriculture each year.
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Sources: ILO, FAO, and IUF data in 2007, as cited in “Guidance on how to address rural employment and decent work concerns in FAO country activities” (FAO 2011b); “Agricultural Workers and their Contribution to Sustainable Agriculture and Rural Development” (Hurst et al. 2005)

agricultural research, technological development, public dissemination, training and agricultural extension, including pilot farms and production facilities, that support agroecology.

In this regard, government and private initiatives must always work through close partnerships with rural communities and producers’ associations, to ensure grassroots acceptability and to develop synergies with grassroots initiatives and innovation. Decentralized and participatory agricultural research, with government and private experts teaming up with experienced farmers, should be encouraged.

Technologies that undermine agricultural diversity, wildlife biodiversity, and ecological balance must be banned. These include the use of destructive and hazardous agrochemicals; genetically engineered crops, livestock and microorganisms; patenting of life forms and profiting from so-called IPRs; reliance on extensive monocultures; and agricultural methods and machineries that disrupt natural cycles and worsen environmental pollution. Sustainable alternatives to these must be actively sought, developed, and disseminated. (AP-PCFS, §C2)

Biodiversity-based policies that specifically apply to specific lines of agricultural and food production and resource management must be adopted. These may include, as examples, the following policies:

- Push for the protection and free exchange of genetic resources (seeds, breeds, fermentation stocks, etc.) among communities and countries; reject TRIPS and TRIPS-based restrictions;
- Uphold the principle and develop and disseminate best practices of multifunctionality in agriculture, as applied to cropping systems, integrated farming, tillage methods, soil management, waterworks development, vegetative cover, and appropriate types of machinery;
- Adopt good resource conservation practices, such as controlled harvesting, restocking, rehabilitation, regrowth, and strict prohibitions as applied to aquatic, rangeland, and forest resources; and
- Resist water privatization and retain public control of water resources.

5. What must be the policy on industrial agriculture?

There must be a global and sustained campaign for countries, communities and farmers to reject industrial agriculture. The campaign should explain its basic defects, specific flaws and other limitations, as well as expose the underlying corporate interests and persistent fallacies that keep it alive and acceptable among governments, multilateral agencies, investors, and even farmers' groups. Governments should adopt and implement programs that push for a fundamental and thoroughgoing shift away from industrial agriculture to biodiversity-based and sustainable alternative modes of agriculture, such as agroecology.

As the whole process will be long and complex, there must also be more specific policies and campaigns that push for reforms in particular aspects of industrial agriculture, to at least reduce their adverse impacts.

In the several decades of industrial agriculture's dominance in the global North and its spreading influence in the global South, it has morphed into various types. At one extreme, it is expanding to even more high-tech areas such as biopharming. At the other end, some of its features have diffused into more traditional and indigenous modes of agriculture through such mechanisms as contract-farming

Box 3. Biopharming: risks and payoffs

It is now possible to use crops as drug factories through a genetic engineering-based technology called biopharming. In biopharming, plants such as corn and tobacco are used as bioreactors to produce therapeutic proteins, drugs, and vaccines. Growing crops for their drug content represents a radical break from the traditional idea of crops as a source of food, feed, and fiber—driven mainly by biotech and pharmaceutical firms who see superprofits in it.

But biopharming also presents challenges and great potential for harm. US federal regulations require that plants grown for drugs and chemicals (non-food and non-feed) must stay clear of the food system under a zero-tolerance standard.

Open-field cultivation of pharma crops create the danger of gene outflow to nearby conventional (non-pharma) crops. The plants need strict containment from seed production, timing of pollination, harvest, crop destruction, shipment, and storage and use of equipment, to avoid cross-fertilization and contamination that may affect the health of workers and farmers.

The key issue is whether the payoffs outweigh the costs of food system contamination, when these potential risks have not yet fully measured in terms of economic, social, environmental, medical, and other costs.

Source: “Biopharming and the Food System: Examining the Potential Benefits and Risks.” (Elbehri 2005)

and the so-called “Second Green Revolution” in Africa. Policies and campaigns must address the particular issues in these variant types of industrial farming.

Government policies must strictly regulate, or subject to agrarian reform, big corporate-owned agricultural lands and food production systems, and either ban or restrict monopoly or oligopoly operations in agribusiness.

Agribusiness corporations, insofar as they remain the principal movers and gainers behind industrial agriculture, must be prevented from continuing and further expanding biologically hazardous and environmentally destructive methods such as untrammled use of agrochemicals and antibiotics, GMOs, and biopharming. Similar policies must be instituted in intensive livestock and aquaculture production.

Governments, especially of developing countries, should review their agricultural strategies and rethink the export orientation of many or most of their agricultural and food production programs, as this export orientation provides the strongest impetus for local food producers to adopt the techniques of industrial agriculture.

Contract-farming agreements between agribusiness companies as sponsors, on one hand, and smallholder growers, on the other hand, must be closely monitored and regulated, and any questionable provisions banned or rescinded. In the context of resisting or reducing industrial agriculture practices, questionable provisions include those that require GMO seeds or breeds and heavy agrochemical inputs, those that disrupt local agro-ecosystems, those that encourage land grabbing or violation of indigenous peoples' rights.

6. What policies are needed to resist and end corporate control over agriculture and food production?

Each nation must adopt general economic policies, programs and laws that assert its sovereignty over its agriculture and food systems against persistent efforts of big corporations to undermine and control them, especially through external trade and foreign investments. Each nation must regulate its external trade and investment inflows in agriculture and food, as an important means to shield key areas of agriculture and food production against unfair foreign competition and monopoly control. (See further below, regarding policies on finance, investment and trade.)

Globally and at country level, the monopoly of giant agrochemical and agribusiness corporations led by the likes of Syngenta, Monsanto and Bayer must be abolished. Corporate monopoly control over agricultural inputs and production must be resisted and dismantled, and their production and distribution of harmful technologies stopped. (AP-PCFS, §D1)

Structural adjustment program (SAP) policies and conditionalities of international financial institutions that provide access by agribusiness monopolies through investment, trade and other mechanisms in order to dominate and control productive resources and food production systems must be rejected and dismantled. Likewise, SAP policies and conditionalities that dismantle food programs, food price regulations, and various forms of public food distribution must be rejected and reversed. (AP-PCFS, §B2 and §D2)

Develop effective price management and community postharvest technology and end TNC and merchant price manipulation of produce and control of postharvest facilities. (AP-PCFS, §D4)

7. What finance and investment policies are needed on the basis of food sovereignty?

Financial and economic self-reliance by mobilizing the people's initiative and resources should be the main strategy at the core of each country's finance and investment policies as applied to agriculture, food systems, and food self-sufficiency.

Agrarian reform and comprehensive rural development must be able to generate sufficient finances among the mass of rural producers. These should be mobilized through producers' cooperatives, growers' associations, local savings and credit associations, and the like, to ensure the financial needs of sustainable food systems and rural development. Micro-finance arrangements, including those at the local or village level managed by women for their own benefit, should be encouraged in the context of cooperative principles. Governments should establish an enabling legal and economic environment to promote and mobilize domestic savings for the country's food needs.

Private investments and increased public expenditure are both vital to agriculture, but the more crucial issue is to ensure that the money goes to genuine agricultural development that enhances food sovereignty and benefits the majority of the rural population.

Public expenditures and investments must supplement rural self-financing, especially for major public works and industrial projects, and during times of economic instability and disasters. At the same time, there must be enough budget allocation to ensure adequate access to food for all people, especially for the poorest sectors, and people in urban areas and in distressed rural areas that lack food self-sufficiency.

Private investments in agricultural land and natural resources must be strictly regulated to ensure that they do not further increase monoculture-based, export-oriented agriculture and worsen land grabbing.

Development cooperation and aid should not promote corporate interests in trade, control and resources and the promotion of agricultural and food technologies destructive to health and environment. Instead, they should promote equitable and mutually beneficial exchange of food and agriculture technologies and resources among communities and peoples and nations food sovereignty in all countries. (AP-PCFS, §G1)

Domestic production subsidies that promote unsustainable agriculture, inequitable land tenure patterns and destructive fishing practices must be phased out, since they mostly benefit agribusiness and big food traders. On the other hand, integrated agrarian reform programs, including sustainable farming and fishing practices, must be supported.

IMF, World Bank and other international financial institutions must stop the system of conditionalities contained in structural adjustment programs (SAPs), including the so-called Poverty Reduction Strategy Papers (PRSPs), that promote neoliberal reforms benefiting foreign monopoly corporations while penalizing small producers as public subsidies are dismantled and public services are privatized. (AP-PCFS, §G5)

8. What trade policies must be pursued?

Each country must ensure that its policies covering trade in agricultural products, especially food, are consistent with its overall national interest and economic sovereignty, and its people's food sovereignty. Trade can play a positive role, for example, in situations of regional food insecurity, or in the case of products that can only be grown in certain parts of the world, or for the exchange of quality products. (Peoples Food Sovereignty 2001, 8)

In this regard, a multilateral trading system provides a common framework for countries to trade on equal terms, including trade in food. However, the process of achieving internationally or bilaterally agreed trade rules must recognize inclusive, democratic, and participatory decision-making, not just among governments representing states but also including civil society and other non-state actors.

National and international trade policy and mechanisms should ensure that supply management in food and agricultural products promote people's food sovereignty. These policies and mechanisms should also dismantle international cartels and TNC monopolies that manipulate international prices of food commodities and agricultural crops. (AP-PCFS, §G4)

The concept and practice of fair trade, which enhance people's food sovereignty and strengthens community self-sufficiency, must be promoted. Trading systems must be reformed according to the principles of fair trade. (AP-PCFS, §G2)

In this regard, the World Trade Organization should be taken out of every aspect of food and agriculture systems; its rules should not apply to food and agriculture. The WTO is undemocratic and unaccountable, has increased global inequality and food insecurity, promotes unsustainable production and consumption patterns, erodes diversity, undermines social and environmental priorities, has proven impervious to criticisms, and has dismissed all calls for reform. It should therefore be eventually dismantled and replaced with a new multilateral trading system anchored on fair trade and people's food sovereignty and supported by democratic governance mechanisms. (AP-PCFS, §G3, FOE International 2003)

Similar bilateral and regional trade and investment agreements based on the WTO rules should likewise be dismantled. Proposed and ongoing negotiations on trade and investment liberalization, such as the Trans-Pacific Partnership, should be resisted and frustrated.

The WTO Agreement on Agriculture, which promotes dumping of subsidized excess production of the global North, and which reduces already limited subsidies critically needed by small farmers in the global South, must be rejected. (AP-PCFS, §C6)

Governments must enforce effective bans on all forms of dumping, in order to protect domestic food production. This would include supply management by exporting countries to avoid excessive surpluses and the rights of importing countries to protect internal markets against imports at low prices. At the same time, adequate remunerative prices must be ensured for domestic farmers' and fishers' produce.

9. What must be the policy on food aid?

Food relief should be genuinely pro-people and proactive. Sufficient, safe, nutritious and culturally appropriate food and potable water as well, must be available and ready for free distribution during emergencies due to disasters.

The objective of food aid must be to provide prompt and genuine relief to communities in dire conditions of starvation, while proactive and longer-term mechanisms towards recovery and rehabilitation are instituted especially in poverty-stricken communities and disaster-prone localities.

Food aid should be premised on and promote food sovereignty. It must enhance domestic food production of recipient communities and societies. Food aid delivery must not encourage dependency and must not replace preexisting food distribution systems.

Poisoned, unsafe, or genetically modified food should not be provided as food aid. Starving victims of disasters and conflict must not be victimized anew by food relief that is contaminated or expired, whether this is due to gross negligence by donors and relief agencies or due to other ulterior motives. (AP-PCFS, §E3, §E4)

Food aid, whether from foreign or local entities, should not be used to further any political, military, and economic agenda.

Food aid must not be used as an instrument of domination or war, especially by powerful states that use it to bring down defiant countries or communities. Such abuses of food aid as in the US-led invasion and occupation of Iraq and Afghanistan, or the denial of much-needed food imports such as resulted from the US embargo on Cuba, should be denounced and stopped.

Food aid must not be used as a mask for dumping dirt-cheap food imports as a way for transnational companies to strengthen their control of domestic markets. Likewise, it must not be used as conditionality by donor countries to unjustly extract structural reforms in recipient countries. International cooperation and aid in food should instead support food sufficiency and genuine development. (AP-PCFS, §G7)

10. What rural development policies must be pursued?

In lieu of industrial methods and monoculture, agroecological principles and area-specific practices that conserve and enhance biodiversity must be adopted and popularized. These include principles and techniques of polyculture and intercropping, crop rotation, integrated farming; controlled tillage (minimal tillage in certain types of agroecosystems); year-round vegetative cover; soil management; organic fertilizers and natural pest management; and integrated water management.

Research and development must lead to farm mechanization that serve the need of diversified farms, run on renewable energy sources, and are easy for households and villages to operate and maintain. Particular attention must be given to labor-

saving and safe devices that help reduce and the heavy and dangerous farm work as well as domestic chores, and thus benefit women, children and the disabled.

Rural-based industries must be developed, giving priority to those that strengthen agriculture's forward and backward linkages, serve the local market, generate off-farm employment, and enhance local self-sufficiency in food and other basic goods and services. Emphasis must therefore be given to agri-based and food-processing industries, running on appropriate and sustainable technologies. Other rural industrial projects of importance include power from renewable sources; local irrigation and potable water systems; fabrication and repair of farm machinery; and production of organic farm inputs.

Rural cooperatives must be established, maintained and developed throughout the country, starting from the community level and establishing horizontal and vertical linkages up to the national level. At the core of such cooperatives must be producers' (farmers', herders', and fisherfolk's) associations that are truly democratic, inclusive, and exercise direct joint ownership and management over farmland and other resources. Marketing, consumers, finance (savings and credit), transport, and similar service cooperatives should also be established in the rural areas. Governments must establish the legal and economic enabling environment for these cooperatives.

The government must take the lead in establishing, maintaining, and developing public works and social service facilities to ensure the all-sided and sustainable growth of the rural economy and well-being of the rural population. Emphasis must be given on communications, transport, education, health and hygiene, irrigation and water systems, flood control, power, and other facilities that service rural areas and reach the most far-flung communities.

11. What climate change-related policies must be pursued?

The impacts of climate change are worst-felt among rural people, especially the poor and marginalized, whose livelihoods and lifeways are tightly intertwined with agriculture and surrounding ecosystems, even as climate change affect whole countries, especially developing countries.

Thus, climate change-related policies must give utmost weight to adaptation and mitigation measures (especially adaptation measures) that help farmers, herders, and fisherfolk—already vulnerable to economic, financial, and energy crises—

cope with floods, droughts, pestilence, and many other effects of climate change on their lives and livelihoods.

Policies pushing for a drastic and faster shift to agroecology, increased agricultural biodiversity, climate-proofing rural infrastructure and waterworks that maximize the multifunctionality of agriculture, disaster risk management, and so on, will increase climate resilience in food production and among rural communities, and thus greatly reduce future vulnerability to climate-related catastrophes.

Developing countries should push for urgent and adequate climate financing from developed countries, in the context of climate justice and according to the Rio principle of “common but differentiated responsibilities,” and preferably through a democratically-managed global fund, in order to help fund adaptation measures especially in rural areas most vulnerable to climate change impacts.

Urgent and drastic mitigation measures are crucial too, but developing countries must insist that developed countries should bear the main responsibility for these. Some mitigation measures are appropriate and beneficial for developing countries and their food production, such as forest preservation. But rural communities, including indigenous communities, should be wary of attempts by North-based firms to trap them into carbon offset arrangements.

12. What policies on decentralization, autonomy and local governments must be pursued?

The immense diversity of factors that shape agriculture and food production, especially in the context of agroecology, the geographically dispersed spread of rural communities, and the emphasis on community-based programs in asserting food sovereignty, all point to decentralization, autonomy and local governments as key issues in the governance of sustainable development of food systems and rural areas.

Decentralization and autonomy as modes of governance must be further explored and optimized to enhance inclusion, democratic participation, and grassroots mobilization in asserting food sovereignty and reshaping the country’s food systems from the national to the local level. In this regard, the role of local governments as legally-mandated institutional channels of decentralization and autonomy must be recognized and strengthened. In the case of indigenous peoples, the application of decentralization and autonomy take a distinct form of self-rule through their assertion of the right to self-determination.

The national government must provide the legal enabling environment, as well as political and financial support, to optimize the role of local governments in the practice of autonomy, and to recognize and respect the indigenous peoples' right to self-determination.

13. What other policy reforms must be adopted?

International and national research centers must be refocused towards the promotion of the people's food sovereignty. Governance mechanisms should be instituted on a global scale in order to ensure that technology development, including those under TNC research and development centers and TNC-funded university research institutes, promote pro-people, environmentally-friendly technologies. (AP-PCFS, §G6) The governance of food and agricultural research must be democratized. (Pimbert et al. 2010b)

The precautionary principle must be observed and applied in the scientific research and development of technologies that appear to hold great promise, in improving agricultural and food production processes for example, but which remain fraught with uncertainties and untested presumptions.

Crop and livestock breeding, as they have been going on for millennia, must not be commandeered by agribusiness-funded research and technology development. Rather, they should remain in the realm of community initiative and innovation and conservation of traditional and indigenous varieties, although guided and supported by science-based agroecology.

Patenting of any life form must be stopped, and biopiracy ended. International agreements (such as the WTO TRIPS) that promote corporate control and ownership of genetic resources and other food production resources must be dismantled. (AP-PCFS, §D3)

V The continuing struggle for food sovereignty

It is very clear by now that the global problem of chronic hunger is not due to absolute food scarcity and low levels of food production. Rather, it is rooted in poverty due to long-standing and worsening social inequities. This has been starkly proven in the past decade, as such inequities have become sharper to an undeniable degree, aggravated by unsustainable models of production and development that severely stretch the capacity of the environment, fuel social unrest, and urge social movements and people's organizations to take urgent action.

1. Why is it an urgent imperative to continue and advance the struggles of communities, food producers, and peoples for food sovereignty?

The financial collapse of 2008 set off a multi-sided global crisis, the worst since the Great Depression of the 1930s. The financial crisis directly led to an economic downturn, aggravated by a food and energy crisis and triggering protests in more than 60 countries. It is a complex crisis that by many indicators will be prolonged, as it has been showing signs of more financial, economic, social, and environmental troubles ahead. The worsening impacts of climate change are aggravating the crises.

Following dramatic food price rises in 2007–2008, the world reached a record peak of more than 1 billion hungry people in 2009. This figure later decreased, but the problems of food price and supply volatility continue, driven by factors that have nothing to do with any absolute food shortages worldwide, but due to the global market forces and cumulative effects of the economic, financial, fuel, and environmental crises of the past decades.

Although the effects of this multi-sided global crisis are affecting both the developed countries of the North and the developing countries of the South, the bigger brunt is being shouldered by the billions of people in the South, especially

the estimated 3 billion people living in the rural areas, 2.6 billion of whom are involved in agriculture, and mostly poor and marginalized.

It is thus a most urgent imperative for peoples, food producers, and communities in all countries to further continue, expand and advance their struggles for food sovereignty. These struggles are not merely a way out of the present crises, but show the long-term direction that nation-states and peoples must take to finally and globally eradicate chronic hunger, poverty, and all forms of social inequity.

The countries and peoples of the world commemorate this year the 20th anniversary of the 1992 Rio Earth Summit, with the United Nations calling for another global summit in June to review the principles of sustainable development and its three pillars of economic growth, social equity and environmental sustainability, and to chart the path forward amidst the worsening crises and attempts to dilute the content of sustainable development to its barest.

We should note well that the continuing struggles for food sovereignty must also be seen as significant contributions to strengthen and elaborate the principles and goals of sustainable development, in the framework of human rights and democracy.

2. How should communities and peoples advance and eventually achieve food sovereignty?

First, peoples and communities in all countries must organize and mobilize themselves into social movements and various types of people's organizations that actually develop their power to claim and assert their rights to food and to produce food, and also their right to access the necessary productive resources in order to realize their basic rights.

Advocating and actually asserting food sovereignty is seen most concretely at the local or community level, where movements and organizations especially those based among farmers, herders and fishers are able to frontally tackle the issues relating to food and livelihood faced by the people on a daily basis, and put these into the context of food sovereignty principles. Women, youth, farm workers, indigenous peoples, and other marginalized groups should participate in such a democratic process.

On that basis, their organizations must put forward policy options that the people could rally behind through information and mobilization campaigns, starting from

the local levels all the way to the national level. The main objective is to concretely show how the concerns of the community or communities, especially the poor and marginalized, are addressed within the framework of food sovereignty, which has local and national dimensions.

Second, peoples and communities must work towards reforms that enhance political democracy and public participation in governance, thus enabling nation-states to shape and implement policies that enhance and extend food sovereignty.

Incorporating and implementing the principles of food sovereignty at the level of state governance is a tremendous challenge, needing social movements, people's organizations, and other food sovereignty advocates to advocate policy reforms with sustained persistence and tenacity in information and mobilization.

In a growing number of countries, such efforts are already bearing fruit in terms of achieving a substantial degree of recognition by political parties (through their political platforms); parliaments (through their legislative agenda and pending bills); and even the national executive leadership in a few cases, by actually incorporating food sovereignty principles into the constitution, translating them into laws, and implementing these laws. These include Venezuela, Senegal, Mali, Nepal, Ecuador, and Bolivia. (Beauregard 2009, 26)

And third, on the basis of these advances, social movements and people's organizations must persist in their continuing role of providing the backbone and muscle for global advocacy and campaigns on food sovereignty, and for engagement in official multilateral processes as well as unofficial parallel ones. Through such processes, they must take every opportunity to broaden their networks and join hands with more advocates working in governments, multilateral institutions, and international NGOs.

a. Interaction of advocacy for food sovereignty at local, national, and international levels

The comprehensive nature of food sovereignty implies an equally complex strategy to achieve it. At present, the distinction between national and international policy is often blurred, since in many countries, international forces heavily influence national policymaking. In any case, any policy proposal aimed at reducing poverty and hunger and developing sustainable livelihoods has to effectively address the causes and obstacles, which fall under the ambit of national or international policy-making.

Food sovereignty sprang from a political discourse emphasizing self-determination of local communities and self-reliance in finding solutions to local problems. Thus, policy proposals under the framework of food sovereignty would require extensive changes in current international agricultural and trade policies, as the scope of major international institutions and agreements would have to be radically reduced or entirely changed. At the same time, these policy proposals continue to comprise a working document, the People's Convention on Food Sovereignty (see below).

At the national level, the advocacy draws on the strength of the different sectors—peasants, agricultural workers, fisherfolk, indigenous peoples, women, etc.—in pushing for a national program on food sovereignty. This national framework for food sovereignty should cover policy proposals on the widest possible range of issues, but should focus on the following:

- agrarian, aquatic and pasture land reform programs;
- food production program;
- agroecological development in food production;
- food distribution program;
- trade, finance, and investment regulations;
- income, livelihood, cooperatives, and rural development, among others.

The national program serves as a platform for advocacy campaigning and alliance work. Policy proposals on specific issues on food sovereignty should be drafted and presented to policy-makers to instigate legislative debate and action.

b. The People's Convention on Food Sovereignty document

The People's Convention on Food Sovereignty is a document that challenges national and global authorities politically. This initiative of an international people's convention, unlike supposedly legally binding conventions signed by governments that then do not get implemented, gets its power from the people. It continues to gather recognition as well as suggested additions from peoples across the globe. (See Appendix 1 for the full text of the Convention.)

The convention puts forth the elements of food sovereignty and confronts corporate control in food and agriculture as well as instruments of neoliberal globalization such as the IMF, World Bank and the WTO. It reflects the growing support of more and more social movements in the world in favour of food sovereignty. This growing worldwide support for food sovereignty, by itself, already shows the validity of its principles. At the same time, it increases the pressure for critical changes in global and national policies.

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Appendix

People's Convention on Food Sovereignty

Preamble

Food is essential to life. Food not only provides the basic sustenance for physical survival and nutrition for healthy human existence; food is also a key element of people's culture.

The world now produces enough food to feed everyone, and yet millions of people, including 6 million children under the age of five, die each year as a result of hunger and chronic malnutrition. Every day the toll is 25,000 deaths from hunger.¹ This number does not include preventable deaths from illnesses related to malnutrition and poverty.

Hunger exists because food and resources are not equitably distributed. In 2000 the richest 20% enjoyed 86% of the world's total income and wealth while the poorest 20% still only has one percent.² Neoliberal globalization threatens to further intensify this imbalance as corporations of rich industrialized countries utilize new technology and policies to wrest control over genetic and other resources for food production, leaving the poor even more powerless and further preventing them from feeding themselves and their communities.

Food security remains an elusive but critically important goal of communities and countries. The irony of increasing global hunger in the midst of plenty reminds us that food security cannot simply be the UN FAO definition of being able to ensure that food is available at all times, that all persons have the means and access to it, that it is nutritionally adequate in terms of quantity, quality and variety, and that it is acceptable within the given culture.

Neoliberal policies implemented by multilateral institutions such as IFIs, WTO and even FAO are continually breaking down the capacity of countries and peoples for self-sufficient food production and assuring food for everyone in their societies. While new technologies and “modern” production controlled by corporations and promoted by these policies promise supposedly better and greater food production, these present new products that are poisoned and genetically modified for the poor rural and urban majority who have lost their livelihood and income as a result of corporate takeover of agriculture and food production, and poison the environment in the process.

For nations and countries, a rights-based policy to ensure community and peoples’ control over food systems is the only solution in assuring food for all, especially the poor and marginalized. Food sovereignty is the right of peoples, communities and countries to determine their own production systems related to agricultural labor, fishing, food and land and associated policies which are ecologically, socially, economically and culturally appropriate to their unique circumstances.

Food sovereignty is the power of people and their communities to assert and realize the right to food and produce food and fight the power of corporations and other forces that destroy the people’s food production systems and deny them food and life. Nations and states must exercise food sovereignty to protect, promote and develop the people’s food sovereignty from which it draws power.

Statement of principles and goals

1. Every human being has a fundamental, inalienable right to safe, nutritious and culturally appropriate food. As food is most essential to life, the right to food is an extension of the basic human right to life.
 2. Systems of food production, distribution and exchange are a pre-eminent responsibility of the community and society. Assuring food stock, securing resources for food production, equitable distribution of food and management must be ensured and controlled by the community, giving first priority to the majority of small food producers and conservers and preventing ownership and control over resources and production by corporations.
 3. Food policy must be premised on achieving self-sufficiency in food production through the local food producers, particularly farmers, fishers, indigenous communities and pastoralists, and not the corporations. Such
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policy inevitably gives priority to domestic food production enhancing livelihood of people, over export agriculture and fisheries that always indicate loss of livelihood and consequently compel people to be exploited in export-oriented food industries.

4. Food production programs must be premised on mobilizing the majority of small food producers and providing them, especially the marginalized sectors like women, dalits³ and indigenous peoples, access to resources such as land, water, seeds and livestock.
 5. Food policy and food programs must assure access to food not only through sufficient income for everyone, but also by providing mechanisms for free or subsidized distribution of nutritious and culturally appropriate food to those who have insufficient income, as well as to those who suffer natural and man-made calamities.
 6. Food distribution and food production programs of communities and societies must be formulated and created with the full participation of the people, especially assuring the participation of marginalized sectors of producers and consumers. Such programs must recognize and promote the initiative of the people to assert their rights to access to food and food production.
 7. Food is inextricably linked to nature and the environment. Conservation of genetic resources and the environment should be promoted in food production through biodiversity-based ecological methods, providing the framework for technology development in food production, conservation and distribution that runs counter to patents on life and genetic modification of crops and livestock.
 8. Food and by extension food production as fundamental human activities embody key elements of culture of a community and society, and such role must be recognized, conserved and promoted.
 9. Safe and nutritious food must be assured through effective mechanisms and regulations, the formulation and implementation of which promote and safeguard the interests of small producers and consumers in processes that involve full participation of the people.
 10. As food sustains life and society, food must remain an element of peace and cooperation among communities and among nations and societies. Turning
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it into instruments of whatever form of domination and even war by one community or society over another runs counter to the norms of humankind in relation to food.

Ensure the people's access to food

1. National food programs must be based on strong community food programs that promote self-reliance and self-sufficiency, equitable distribution of food especially to the poor, and supported by national food distribution programs.
2. Structural adjustments or conditionalities of international financial institutions like the World Bank that dismantle food programs, food price regulations, and various forms of public food distribution must be rejected and reversed.
3. Workers' wages and people's incomes must assure access to basic food and other needs through employment with dignity. Trade union rights must be promoted and protected so that living wages and working conditions are assured.
4. Price control laws and mechanisms must be put in place to ensure affordable and stable prices for staple and basic food products. There must be programs to provide staple food free or, depending on circumstances, at subsidized prices, for the poor and marginalized.
5. The promotion of monopoly by food manufacturing corporations like Nestle and the resulting monocultures created by monopoly food retailers like Coca-Cola and McDonald's erode food sovereignty and must be stopped.

Develop people-based, biodiversity-based food production systems over corporate industrial agriculture

1. Implement genuine agrarian, fisheries, forestry and rangeland reform premised on the free distribution of land and other key productive resources to the tillers, effective access to marine, forestry and pastureland resources, and ensuring comprehensive and integral distribution of production resources and the strengthening and development of their production through cooperation and technology development.
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2. Develop appropriate biodiversity-based agricultural technologies and recover community control over seeds and other genetic resources for agriculture. Dismantle industrial agriculture and similar intensive livestock and aquaculture production that are premised on the use of pesticides and other poisons as well as genetic modification to achieve environmentally destructive methods of overproduction.
3. Ensure women's access to productive resources, protect women's capacity and knowledge such as seed conservation, animal husbandry and the like.
4. Promote and protect indigenous peoples' rights to ancestral domain and self-determination to their own production and food distribution systems and culture.
5. Support workers' struggles for higher wages, job security, better working conditions and safe environment, benefits and welfare, and trade union rights especially of agriculture, fisheries and other food production workers.
6. Dismantle the WTO Agreement on Agriculture that promotes dumping of subsidized production of the North and reducing already limited subsidies particularly needed by small farmers.

Fight and dismantle corporate control over agriculture and food production

1. End the monopoly of giant agrochemical, agrobusiness corporations led by Syngenta, Monsanto and Bayer. Dismantle their control over agricultural inputs and production, and stop their production and distribution of harmful technologies.
 2. Reject and dismantle structural adjustment policies that provide access by agrobusiness monopoly corporations through investment, trade and other mechanisms in order to dominate and control productive resources and food production systems.
 3. Stop patenting of all life forms and biopiracy and dismantle the WTO TRIPS which promotes the corporate control and ownership of genetic resources and other food production resources.
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4. Develop effective price management and community post-harvest technology, and end TNC and merchant price manipulation of produce and control of post harvest facilities.

Food distribution

1. Ensure sufficient food stocks, giving priority to domestic procurement and supporting local production through price and procurement mechanisms.
2. Develop local markets from the community level that ensures effective access by small producers and systematically destroy local and transnational monopolies.
3. Ensure sufficient, safe, nutritious and culturally appropriate food and water for free distribution during emergencies due to natural disasters or otherwise.
4. Food aid should be premised on and promote food sovereignty, and enhance food production of recipient communities and societies. Poisoned, unsafe, and genetically modified food should not be provided as food aid.

Ensure safe, nutritious, affordable and culturally appropriate food

1. Support and develop as priority the community capacity to ensure availability of safe, nutritious, affordable and culturally appropriate food, especially ensuring the needs of the marginalized sectors.
 2. Develop effective post-harvest technologies and facilities as well as in manufacturing and food preparation to ensure that food is free from pesticides and harmful chemicals.
 3. Food safety standards should be formulated with the full participation of the people and it should give primacy to human and environmental concerns.
 4. All genetically modified food should be taken out of the market including for feedstock. The WTO Agreement on Sanitary and Phyto-sanitary Standards serves to weaken community and people-based standards in order to serve corporate interests in international trade and should be rejected altogether.
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People's food sovereignty should be the framework for national and international investment policy

1. Development cooperation and aid should promote equitable and mutually beneficial exchange of food and agriculture technologies and resources among communities, peoples and nations, and promote food sovereignty in all countries. It should not promote corporate interests in trade, corporate control of natural resources, and technologies that are destructive to health and environment.
 2. Promote fair trade that enhances people's food sovereignty and strengthens community self-sufficiency, control and trade. Trading systems must be reformed according to the principles and promotion of fair trade.
 3. WTO should be taken out of agriculture and eventually dismantled and replaced with a multilateral trading system premised on fair trade and upholding people's food sovereignty.
 4. National and international trade policy and mechanisms should ensure that supply management in food and agricultural products promote people's food sovereignty and do away with international cartels and TNCs that manipulate international prices of produce and food items.
 5. IMF, WB and other international financial institutions must stop the system of structural adjustment conditionalities including PRSPs that promote neoliberal reforms benefiting foreign monopoly corporations and enforce fiscal measures premised on the dismantling of public subsidies and mechanisms to promote the people's food sovereignty.
 6. International and national research centers must be refocused towards the promotion of the people's food sovereignty. Governance mechanisms should be instituted on a global scale in order to ensure that technology development, including those under TNC R & D and TNC-funded university research institutes, promote pro-people, environmentally friendly technologies.
 7. The use of food as an instrument of domination of countries and communities and as an instrument of war, such as the embargo imposed by the US on Cuba and the role of food aid in the invasion and occupation of Iraq, should be denounced and stopped.
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We will strengthen our social movements and develop the organizations of farmers, women, indigenous peoples, fisherfolk, workers, and the urban poor in each of our countries to advance regional and international solidarity and cooperation and to strengthen our common struggles for food sovereignty. #

Endnotes

¹ FAO, The State of Food Insecurity

² “The State of Food and Agriculture 2000, Lessons from the Past 50 Years”. FAO of the UN, Rome, 2000

³ *Dalits* are groups of people traditionally associated with the lowest-ranked caste groups in South Asia, and who continue to be victims of various kinds of discrimination.

THE IBON PRIMER ON FOOD SOVEREIGNTY AND THE FOOD CRISIS reaffirms what people's and peasants' movements and food policy activists all over the world have long insisted: that global hunger has not been solved by tremendous gains in food production because it is rooted in systemic poverty generated by social inequities.

A GROWING NUMBER OF GRASSROOTS ORGANIZATIONS have banded together in recent decades to shape an alternative human rights-based framework for agriculture and food policy, as they engaged in issues ranging from landlessness to neoliberal globalization, from the pitfalls of industrial agriculture to the effects of climate change.

FOOD SOVEREIGNTY IS THE POWER OF PEOPLE AND COMMUNITIES to assert and realize the right to food and to produce food. It is the power of people and communities fighting the power of corporations and other forces that destroy the people's food production systems and deny them food and life. The primer asserts that nation-states must exercise food sovereignty to protect, promote and develop the people's food sovereignty, from which it draws power.

PRINCIPLES AND POLICY PROPOSALS RELATING TO FOOD SOVEREIGNTY are then expounded, to show that indeed there are practical and viable ways out of global hunger and poverty. The primer ends with a call for peoples and communities in all countries to assert their rights to food, food production and access to productive resources at the community, national, and international levels.



IBON Center
114 Timog Avenue, Quezon City
1103 Philippines
Tel: +633 9377060 to 62 loc 202
Fax: +632 9276981
Website: <http://www.international.ibon.org>

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