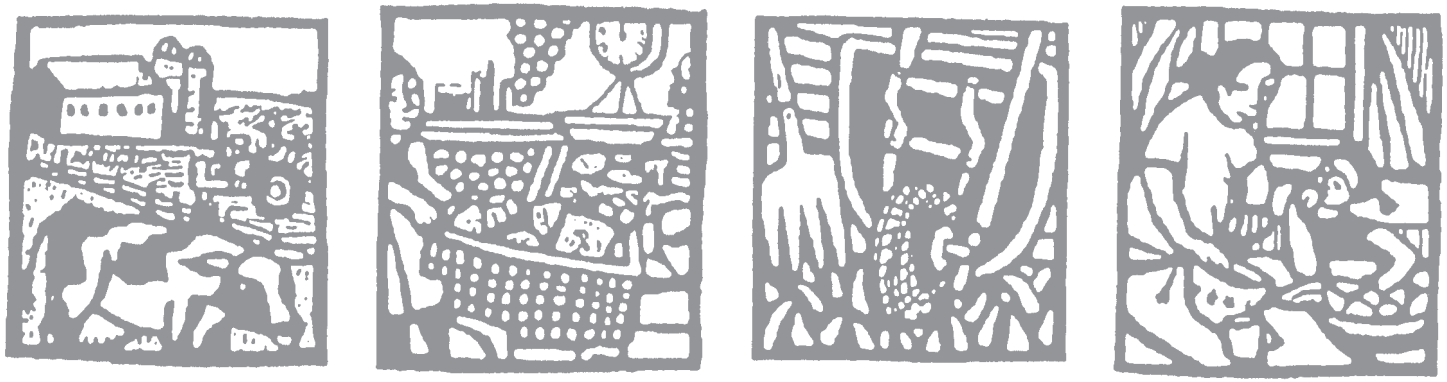

Northeast Farms to Food

Understanding Our Region's Food System

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September 2002

Preface and Acknowledgments

NORTHEAST FARMS TO FOOD:
UNDERSTANDING OUR REGION'S FOOD SYSTEM
The Northeast Sustainable Agriculture Working Group

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The Northeast Sustainable Agriculture Working Group (NESAWG) was founded in 1992. It is a regional network of groups and individuals working together to create a more sustainable, secure, and just food system for the Northeast. NESAWG works on the full range of food system issues, including local, state, and federal farm and food policy, local and regional food-based economic and community development, public education, food access and nutrition, natural resource conservation and stewardship, and leadership development.

ACKNOWLEDGMENTS

The project coordinator would like to especially thank Vern Grubinger, Sue Ellen Johnson, Matt Hora, and Kathy Lawrence for their exhaustive research and written contributions to this publication. Thanks go to the Capitol Area Food Bank for sharing information that originally appeared in their 2001 publication, *From Farm to Table: Making the Connection in the Mid-Atlantic Food System*. Thanks to the authors of the NESAWG White Papers. Thanks also to NESAWG Steering Committee members Cynthia Barstow (Mass.) and Judith Gillan (Mass.).

Funding for this project comes from the Jessie Smith Noyes Foundation, the Lawson Valentine Foundation, and the Wallace Genetic Foundation.

KZR
SEPTEMBER 2002

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Introduction

But, ... we should first learn the winds and the nature of the sky,
the customary cultivation and the ways of the place,
what each region bears and rejects.
Here corn shoots up, and there grapes do.
Elsewhere young trees grow strong and the wild grasses.

— Virgil, The Georgics, Book I, 29 B.C.

Over five years ago, a small group of NESAWG members envisioned a "little publication" that would describe and explain the Northeast food system. Wouldn't it be great — and important — for us to have in hand all the information about production, distribution, and consumption of food (and fiber) in our region? Then, we speculated, we could better understand our food system, analyze it, and strategize toward change.

The path to realizing that vision has been lengthy and sobering. We now know that there is a lot that we don't know, and cannot find out; certain data simply does not exist. Yet, through the diligence of several NESAWG investigators, researchers, and writers, we are proud to present a substantial compilation of information about all sectors of the region's food and farming system, contained in Part I of this publication.

In 1998, about 20 Northeast food system analysts and advocates responded to an invitation to write a "white paper" about an aspect of the region's food system. Two years later, the authors were invited to update and edit their contribution in preparation for inclusion in NESAWG's pending publication. This rich and diverse collection from many of the Northeast's leading food system thinkers is described in Part II.

The purpose of this document is to provide information and analysis about the Northeast food and farming system. It is intended as an introduction for those who are new to thinking about Northeast food and agriculture, and as a resource for anyone who wants to increase his or her understanding about these complex issues. Please, use the information in your newsletters, presentations, and proposals, in letters to the editor. (Share a white paper with your study group, organization, community, and legislators.)

While the information in Part I is factual (and the opinions of the white paper authors are their own), NESAWG's perspective and biases are clear. NESAWG is a network of organizations and individuals working to create a more sustainable and secure regional food system — one that produces safe and healthful food and is economically viable, environmentally sound, and socially just. Its 70 member organizations share the conviction that our current food system is profoundly flawed.

The Northeast will never produce the volume and kinds of agricultural products that are grown in other US regions. We have natural resource, climate, and other constraints. Yet, for every constraint there is an opportunity: abundant and proximate markets, ample water supplies, and an increasingly aware citizenry. In the

Northeast, all agriculture is local. Communities rally to "save the last farm." States pass substantial farmland preservation bond bills. Community Supported Agriculture (CSA) flourishes. Other regions look to the Northeast as a leader in direct marketing, food policy development, farmland protection, organic agriculture, community food projects, supporting new and immigrant farmers and urban-rural connections.

Current federal farm and food policy has fostered industrialization, concentration, corporatization, and globalization at the cost of environmental stewardship, local economies, the family farm, and consumer control. And federal policy has continually shortchanged, if not ignored, Northeast farmers and consumers. We simultaneously face the loss of agricultural resources, including land, farmers, and service infrastructure, and a decline in access to quality foodstuffs (with an increase in hunger and food insecurity). Perhaps the silver lining to this policy failure is that Northeast states and communities have been motivated to develop their own approaches to fostering regional agriculture, re-localizing and stimulating food-based economic development, and providing access to safe, fresh, and nutritious food for all its citizens. This publication is a tool to help advance these efforts.

When you read *Northeast Farms to Food: Understanding Our Region's Food System,* there are a few important things to keep in mind:

- ❖ NESAWG and this publication cover 12 states — Connecticut, Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and West Virginia — and Washington DC. Regional statistics, unless indicated otherwise, include these states.

- ❖ In some instances, we include data from other states, or a US average, for purposes of comparison. In several places we use US data because specific Northeast data is not available and the information is important to understand the issue. However, this publication is about the Northeast, so general US statistics and trends are not a focus of this work.

- ❖ We have been diligent about source attribution. The source will be identified after the last piece in a collection of data from that source. In some cases, the original source could not be determined. The absence of a citation does raise questions about the veracity of the fact or data; nonetheless, the project coordinator decided to include the information.

- ❖ When we use the term "food system," we are referring to the production, transformation (processing), distribution, and consumption of food. However, we also include fiber products in our investigation of the production sector. For example, data about farm acreage will include acres devoted to fiber products such as wool from sheep, and may include forested acres that are considered part of the farm. And, while seafood is a major Northeast food product, it is not considered in this analysis, unless specified.

- ❖ There is a lot we don't know and were not able to find. "How much of what is produced in the Northeast, is consumed in the Northeast?" is an example of an important question for which there is no simple answer. Our investigations have helped us to understand not only the complexities of our food system, but also the complexities involved in trying to understand it!

The work involved to put this publication together was substantial. But the real work continues: to reshape, maybe transform, our food and farming system. NESAWG members share a vision of that new food system — one that is sustainable, secure, and just. Every day, farmers, educators, community organizers, consumers, policy makers, and many others work for change. We innovate at the grassroots level, and in agency meetings. We take risks. We advocate. We learn. We draw inspiration from one another. Hopefully, *Northeast Farms to Food: Understanding Our Region's Food System* will help all of us to achieve our vision.

Chapter One: PRODUCTION

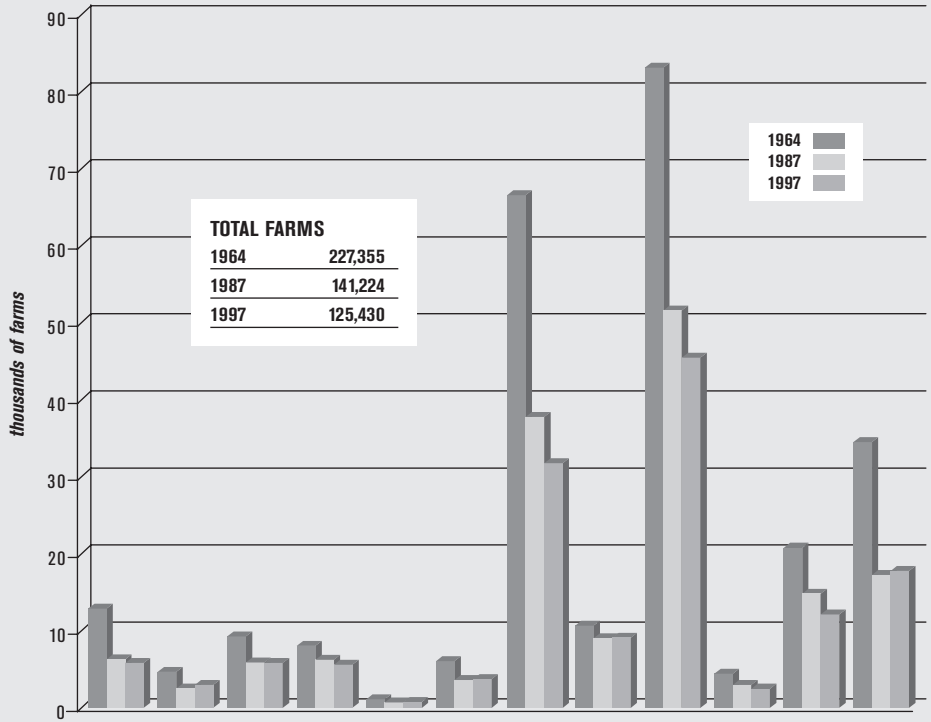
SECTION ONE
Northeast Farms and Land Resources

Farming in the Northeast (NE) is shaped by our land and our climate. We have the advantage of being a rain-fed region, with varied terrain, soil types, and microclimates. These advantages are offset by a relatively short growing season in the northern states, and areas of high humidity. The NE possesses some of the richest farmland in the world, producing high-value specialty crops. It is also characterized by sloped, wet, or stony topography best suited to perennial forage and livestock production.

NE farms reflect adaptation to these natural resource constraints and opportunities. Our farms are very wide-ranging, relatively small, and often diversified. As US agriculture evolved, our natural growing conditions combined with market and other commercial advantages to encourage regional and sub-regional specialization. The NE is well known for its production of high-quality dairy and poultry products as well as unique crops such as maple syrup and cranberries that are synonymous with the regional culture.

However, as the table at right illustrates, farm numbers in the NE have declined dramatically. The reasons are varied, but higher costs of production, including fuel, services, and transportation, are key factors. In the NE it is more likely that farms are lost to non-farm uses such as development, than to consolidation into fewer, larger farms.

Figure 1. NUMBER OF NE FARMS, 1964–1997
Total number of farms in the region decreased 46%



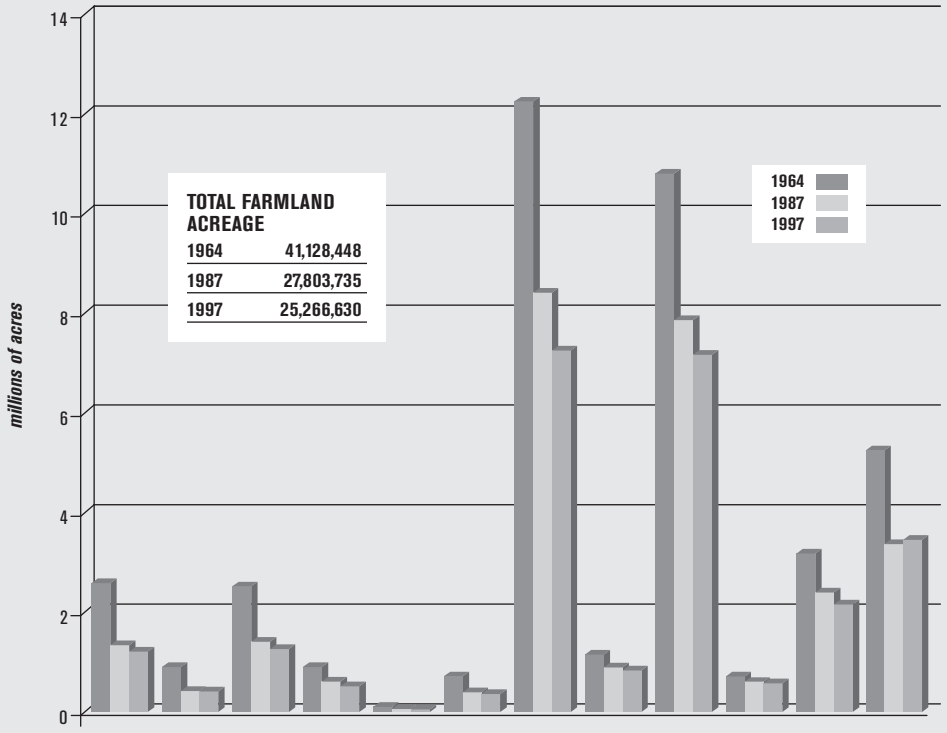
	ME	NH	VT	MA	RI	CT	NY	NJ	PA	DE	MD	WV
1964	12,875	4,648	9,247	8,019	1,100	6,068	66,510	10,641	83,086	4,401	20,760	34,504
1987	6,269	2,515	5,877	6,216	701	3,580	37,743	9,032	51,549	2,966	14,776	17,237
1997	5,810	2,937	5,828	5,574	735	3,687	31,757	9,101	45,457	2,460	12,084	17,772

Source: US Agriculture Census 1997 and 1964

Farmland by Type

The amount of farm products produced in a region is limited, in part, by the available land base. Here is a look at the amount and type of farmland in the NE.

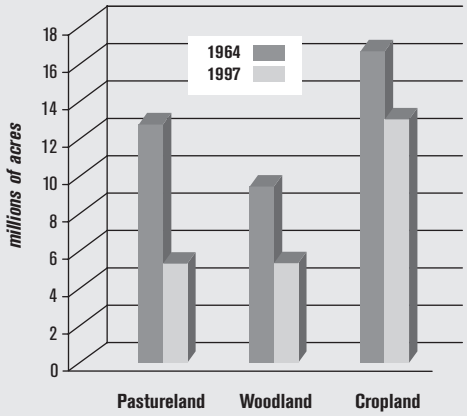
Figure 2. NE FARMLAND ACREAGE, 1964–1997



	ME	NH	VT	MA	RI	CT	NY	NJ	PA	DE	MD	WV
1964	2,590,022	903,197	2,524,371	901,789	103,801	719,675	12,249,712	1,155,597	10,803,983	717,013	3,180,696	5,278,592
1987	1,342,588	426.237	1,407,868	615,185	58,685	398,400	8,416,228	894,426	7,866,289	608,245	2,396,629	3,372,955
1997	1,211,648	415,031	1,262,155	518,299	55,256	359,313	7,254,470	832,600	7,167,906	579,545	2,154,875	3,455,532

Source: US Census of Agriculture, 1997 and 1964

Figure 3. NE FARMLAND TYPES, 1964 & 1997



DEFINITIONS OF LAND USE

FARMLAND

Farmland acreage, described as "land in farms," consists primarily of agricultural land used for crops, pasture, or grazing. Also includes woodland and wasteland not actually under cultivation provided they were part of the total farm operation.

CROPLAND

This category includes land from which crops were harvested or hay was cut, land in orchards, vineyards, greenhouses, etc.

WOODLAND

This category includes natural or planted woodlots or timber tracts.

PASTURELAND

This category includes land used for pasture or grazing, some of which could have been used for crops without additional improvements. Includes some cropland and woodland used for pasture.

Source: USDA Agriculture Census 1997

Figure 4. FARM CROPLAND IN THE NE, 1964 & 1997

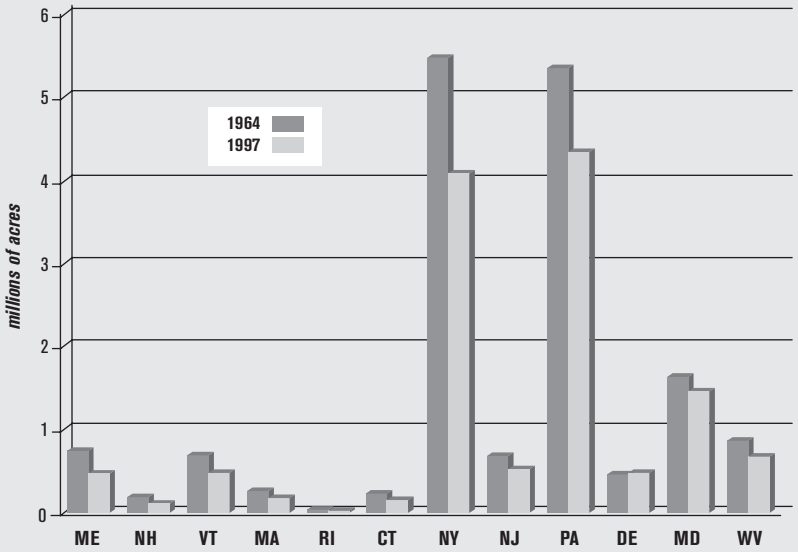


Figure 6. FARM PASTURELAND IN THE NE, 1964 & 1997

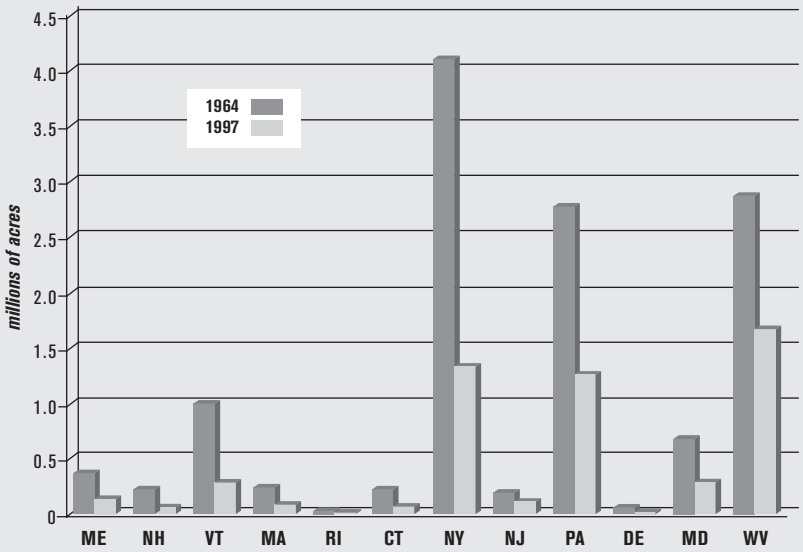
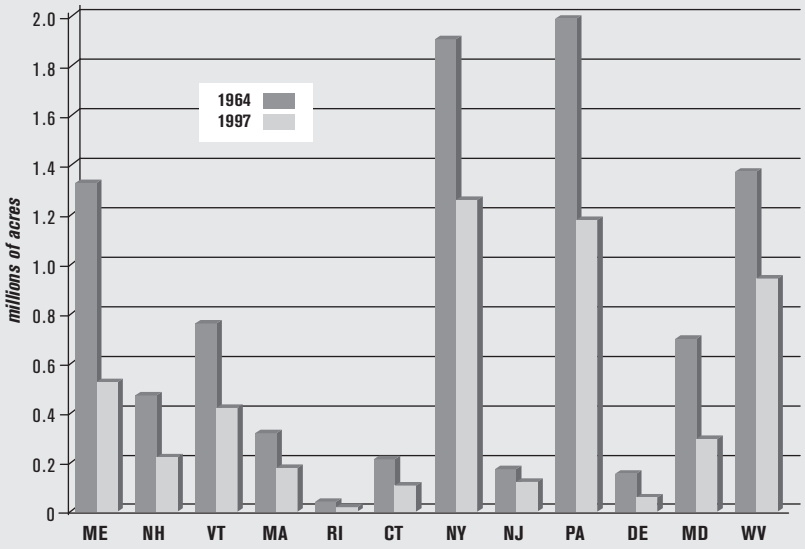


Figure 5. FARM WOODLAND IN THE NE, 1964 & 1997



FARMS TO FOOD FACTS

- In the NE, 7.4 million acres of pastureland have been lost since 1964.
- Since 1982 the trend for pastureland loss in the NE has been much greater than in the country as a whole. The rate of pastureland loss (30%) was nearly three times that of the overall US rate.
- In the NE, 3.6 million acres of cropland have been lost since 1964. We account for only 4.2% of the nation's cropland, but 30% of the nation's consumers live in the region.
- The NE lost 4.1 million acres of forestland from 1964 to 1997.

Source: USDA National Agricultural Statistics Service and US Census of Agriculture, 1997 and 1964

Farms by Size

Typologies have described acreage, income, gross sales, and employment time. Most recently, the USDA National Commission on Small Farms offered these guidelines: a small farm is one with "less than $250,000 gross receipts annually, with the day-to-day management and labor provided by the farmer and/or farm family that owns the production and owns or leases the productive assets." Ninety-four percent of US farms fall into this category. The remaining 6% are classified as "large family farms," "very large family farms," and "non-family farms" (all of which have more that $250,000 in gross annual sales). (See USDA Farm Typology box.)

In 1981, USDA Secretary Bob Bergland issued a report, *A Time to Choose*. The report warned that "…unless present policies and programs are changed so that they counter, instead of reinforce or accelerate the trends towards ever-larger farming operations, the result will be a few large farms controlling food production in only a few years."

USDA FARM TYPOLOGY

SMALL FAMILY FARMS: Less than $250,000 in annual gross sales.

LIMITED RESOURCE FARMS: Any small farm with gross sales less than $100,000, total farm assets less than $150,000, and total operator household income less than $20,000.

RETIREMENT: Small farms where operators report that they are retired.

RESIDENTIAL/LIFESTYLE: Small farms where sales are less than $100,000 and whose operators report an occupation other than farming as their major occupation.

FARMING OCCUPATION/LOWER SALES: Small farms with sales less than $100,000 whose operators report farming as their major occupation.

FARMING OCCUPATION/HIGHER SALES: Same as above but with $100,000-$250,000 in sales.

LARGE FAMILY FARMS: Same as above but with $250,000-$500,000 or more in annual sales.

VERY LARGE FAMILY FARMS: Same as above but with $500,000 or more in annual sales.

NON-FAMILY FARM: Farms organized as non-family corporation or cooperative, as well as farms operated by hired managers.

Source: USDA, ERS 2000

FARMS TO FOOD FACTS

- The predominant acreage category of NE farms is still 1-179 acres (101,055 farms) followed by farms between 180 and 500 acres (31,814 farms).
- In 1964, there were 66,768 farms of less than 50 acres. In 1997 there were only 47,161, a loss of almost 30%.
- The median farm size in the NE is between 10 and 50 acres (33,000 farms).
- There are 10,333 farms larger than 500 acres (7.2% of all farms).
- There are 2,660 farms larger than 1,000 acres.
- This 7.2% of farms manages 9,531,452 acres of the total 21,811,098 farmland acreage (43.7% of regional farmland acreage).

Sources: US Agriculture Census 1997 and 1964

Figure 7. FARMS IN THE NE, 1964 & 1997
by size

	ME		VT		NH		MA		RI		CT	
	1964	1997	1964	1997	1964	1997	1964	1997	1964	1997	1964	1997
1-49 acres	2,477	1,717	1,043	1,457	1,095	1,209	3,809	3,119	559	438	2,618	2,017
50-179 acres	5,820	2,110	2,717	1,925	1,849	1,005	2,680	1,690	393	221	2,197	1,129
180-499 acres	3,595	1,441	4,367	1,862	1,349	571	1,298	614	121	61	1,085	436
500-999 acres	764	398	959	469	288	120	190	121	22	13	137	75
1,000 acres	219	144	161	115	67	32	42	30	5	2	31	30

	NY		NJ		PA		DE		MD		WV	
	1964	1997	1964	1997	1964	1997	1964	1997	1964	1997	1964	1997
1-49 acres	12,453	7,725	4,913	6,056	20,469	13,264	1,545	1,171	6,690	5,235	9,097	3753
50-179 acres	27,698	11,319	3,810	1,927	44,427	19,941	1,593	638	8,357	3,825	17,074	8164
180-499 acres	23,164	9,327	1,690	768	16,571	9,815	1,017	359	4,744	2,038	6,743	4522
500-999 acres	2,803	2,530	173	238	1,391	1,925	184	155	783	617	1,180	1012
1,000 acres	392	856	55	112	228	512	62	137	186	369	410	321

Source: US Census of Agriculture, 1964 and 1997

In 1998, the USDA National Commission on Small Farms issued its report, *A Time to Act,* — its title in direct reference to the 1981 document. In it, the commission stated:

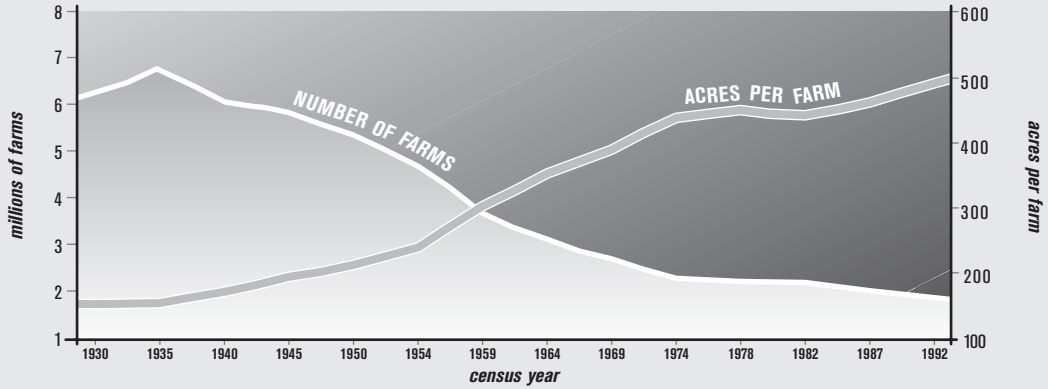
"Looking back now nearly two decades later, it is evident that this warning was not heeded, but instead, policy choices made since then perpetuated the structural bias toward greater concentration of assets and wealth in fewer and larger farms and fewer and larger agribusiness firms. Four firms now control over 80% of the beef market. About 94% of the nation's farms are small farms, but they receive only 41% of all farm receipts.

Having gone through the process of developing this report, we are now even more convinced of the necessity to recognize the small farm as the cornerstone of our agricultural and rural economy. We feel that a sustainable rural renaissance can be anchored in a vibrant, dynamic, small farm sector and we believe that the commission's recommendations, if implemented, will contribute to this renaissance."

US agriculture has been recently characterized as increasingly "bimodal" — consisting more and more of very large and very small farms, where the "middle" family-size farm is in fact the most threatened. In the NE, midsize family dairy farms are the best example of that threatened "middle" sector.

The message from the USDA Commission on Small Farms has particular resonance for the NE, where nearly all of our farms are considered "small farms" and even our larger farms are smaller in acreage and gross sales than average farms in every other region. A NE "rural renaissance" depends on the vitality of all our farms.

Figure 8. TRENDS IN THE SIZE OF US FARMS, 1930–1992
Farm size increased from 1930 to 1992 as farm numbers declined from their 1935 peak



Source: USDA Economic Research Service 2000

WHAT ARE THE REGION'S AVERAGE FARM SIZES?

Between 1987 and 1997 the average farm size increased in Delaware, Maryland, New York, and Pennsylvania. Average farm sizes decreased in the other NE states. Note that farm size is not calculated on area cropped (arable land or cropland), but describes total farm acreage including woodland, wetlands, and other nonproductive farmland. Since total farmland acreage is simply divided by the total number of farms, a state's average farm size is not entirely accurate or representative of land used for food production.

Figure 9. AVERAGE SIZE OF NE FARMS, 1987 & 1997
acres

State	1997	1987
ME	209	214
NH	141	169
VT	217	240
MA	93	99
RI	75	84
CT	97	111
NY	228	223
NJ	91	99
PA	158	153
DE	236	205
MD	178	162
WV	194	196
US	487	

Source: USDA National Agriculture Statistics Service 1999

The Cost of Land

The average dollar value of farmland in most NE states is among the highest in the US. The elevated price of productive land resources is one of the major challenges to farm viability in our region. Purchasing farmland is prohibitive for many new and expanding farmers. Increasing demand on rental land raises rental rates, exacerbating the "insecurity syndrome" in which farmers are less likely to invest in improvements to the land or farm infrastructure. Other land-related costs are escalating property taxes, although every NE state has some form of current use or preferential tax program for farmland.

Figure 10. AVERAGE CASH RENTS FOR CROPLAND, 2000

per acre per year, selected states

	1996	2000
DE	$64.30	$56
MD	$48	$54.20
NJ	$44.80	$51
NY	$29	$32
PA	$38.50	$40
WV	$32	$26

Source: USDA-NASS-2000 Summary Agriculture Cash Rents

Figure 11. LAND TAXATION IN THE NE, 2000

State	Property Taxes per acre	Value of Land and Buildings per acre
ME	$10.88	$1,100
VT	$13.82	$1,300
PA	$14.19	$1,900
NY	$19.18	$1,119
NH	$24.41	$2,400
CT	$31.67	$4,700
NJ	$39.51	$4,800
MA	$38.85	$4,000
RI	$44.91	$5,300
DE	na	na
MD	na	na
WV	na	na
US	$6.08	$699

Source: USDA-NASS-2000 Summary Agriculture Cash Rents

Figure 12. AGRICULTURAL LAND VALUES, 1970 & 2000

per acre per year

	1970	2000
ME	$161	$2,850
NH	$239	$2,300
VT	$224	$1,640
MA	$565	$5,900
RI	$734	$6,500
CT	$921	$2,470
NY	$273	$1,410
NJ	$1,092	$7,100
PA	$373	$2,620
DE	$499	$6,600
MD	$640	$1,210
WV	$136	$1,060

Farm real estate value is defined as the value at which all land and buildings (including dwellings) used for agricultural production could be sold under current market conditions.

Source: USDA-NASS 2001

FARMS TO FOOD FACTS

- The mean value for farmland in 11 northeast states (excluding West Virginia) is highest of any region in the US. In 1999 this was $2,320 per acre, reflecting an average increase of 1.8% between 1995 and 1999.
- Farmland taxes in the NE are 4.34 times the US national average. Farmland values are 4.23 times the US average. *(Source: ERS Statistical Abstract — Report 679-1994)*
- Pasture values in the NE are highest in the US at $2,060 per acre.
- Lancaster County (Penn.) is the most productive farm county east of the Mississippi River, with gross sales of $700 million annually. Yet between 1987 and 1997, 5% of farms and 11,000 acres of land were lost. *Sources: USDA National Agriculture Statistics Service, Food First*
- Vermont's population increased by 9.8% between 1970 and 1992, while developed land increased by 25.3%. Forty percent of the developed area was working farmland (cropland or pasture). *(Source: Pauline Pare — USDA NRCS 1999)*

Farmland Loss

Many factors contribute to the loss of farms. What happens to the farmland? The pressure to develop valuable farmland into houses, malls, and parking lots is greatest in urbanizing areas of the NE. (In more remote areas, farmland is more typically abandoned to forest succession.) Farmland loss means more than the loss of open space, scenic amenity, and habitat. Foremost, it is a loss of a finite productive resource — agricultural soils. Efforts to manage growth often neglect to consider the important contribution that a vital agriculture makes to combating sprawl.

In response to development pressures on the rural land base, federal, state, and local governments, and conservation organizations such as land trusts are working to preserve farmland. The NE has been a leader in the development of various public and private farmland preservation programs. A farmland conservation easement, which protects the land from development, is an increasingly popular preservation tool. Not only does it keep the land available for farming, it reduces the price of the land, making it more affordable for future farmers.

FARMS TO FOOD FACTS

- Between 1982 and 1992, 4.3 million acres of prime farmland were developed.
- The NE contains six of the top 20 most threatened agricultural resource regions in the US.
- Seventy-nine percent of the nation's fruits, 69% of its vegetables, and 52% of dairy products are produced on high quality farmland threatened by urban growth.
- Seventy to 80% of fresh foods are grown in metro fringe areas *(Source: AFT 1999)*
- Of the top 12 states in percent change of land base from undeveloped to urban build-up, eight are in the NE (in descending order: New Jersey, Massachusetts, Pennsylvania, Rhode Island, Maryland, Connecticut, Delaware, New Hampshire). *(Source USDA NRI 1997)*

Figure 13. NON-FEDERAL LAND DEVELOPED, 1992–1997

state rankings by acreage and change in total land developed

Rank	State	Change (acreage)	
1	TX	1,219,500	
2	**PA**	1,123,200	
3	GA	1,053,200	
4	FL	945,300	
5	NC	781,500	
11	**NY**	492,400	
21	**NJ**	283,200	
23	**MA**	281,500	
24	**WV**	275,600	
28	**MD**	222,300	

Source: USDA-NRCS 1997 National Resources Inventory

Figure 14. PURCHASE OF AGRICULTURAL CONSERVATION EASEMENTS (PACE PROGRAMS), UP TO 2000

	# of Easements	Acres Protected	$ Invested (million)	Since	Current Applications
ME	4	2,213	2.1	1987	10
NH	67	9,096	10.0	1979	0
VT	263	83,411	41.8	1987	45
MA	491	44,336	109.0	1977	92
RI	43	3.311	15.2	1981	28
CT	185	26,000	76.0	1978	200
NY	16	1,695	6.4	1996	35
NJ	400	58,887	168.6	1983	399
PA	1,193	147,643	240.0	1988	1,600
DE	154	36,959	39.6	1991	273
MD	1,156	166,529	200.4	1977	NA
WV	WV began a PACE program in 2000.				

Source: American Farmland Trust 2000

SECTION TWO
Northeast Farmers

Who are NE farmers? Like our resource base, our farmers are diverse and resilient. They come from various backgrounds, and choose different ways to produce and market their farm products. Some NE farmers are fifth or sixth generation operators on the family farm; others came to farming with no farming background. About half of the NE's farm operators consider farming their principle occupation, meaning that they spent 50% or more of their work time at farming or ranching. This is consistent with the national profile.

As the following figures indicate, most of our farmers are white males. Yet the percentage of women farmers in the NE is on the rise (up 2,500 between 1987 and 1997), and more immigrant farmers are successfully applying their skills to the production of culturally-specific vegetables and other products.

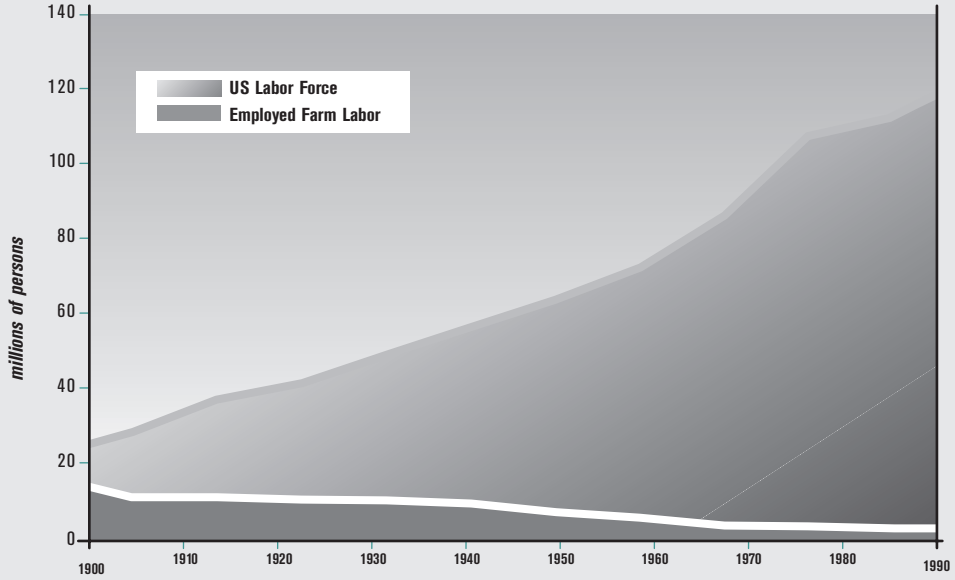
USDA DEFINITIONS

FARM OPERATOR: The term "operator" designates a person who operates a farm, either doing the work or making day-to-day decisions about such things as planting, harvesting, feeding, and marketing.

FARMING AS A PRINCIPAL OCCUPATION: The farm operator spent 50% or more of his/her worktime at farming or ranching.

OTHER OCCUPATION: The farm operator spent 50% or more of his/her worktime at an occupation other than farming or ranching.

Figure 15. US GENERAL & FARM POPULATIONS, 1900–1990



Year	US Population	Farm Population	% US Population
1900	76,212,168	29,875,000	39.2
1910	92,228,496	32,077,000	34.8
1920	106,021,537	31,974,000	30.2
1930	123,202,624	30,529,000	24.8
1940	132,164,569	30,547,000	23.1
1950	151,325,798	23,048,000	15.2
1960	179,323,175	13,445,000	7.5
1970	203,302,031	9,712,000	4.8
1980	226,542,199	6,051,000	2.7
1990	248,709,873	4,591,000	1.8

Source: US Pop. from 1990 Census of Population Table 16 page 26. Farm Pop. from Historical Statistics of the US Colonial Times to 1970 C 76–80 page 96 (Census Bicentennial) and from Residents of Farms: 1991 (Census)

Farm Operators

While NE farmers are diverse as to background and kind of operation, there are some disturbing trends. In the NE, as nationally, there are twice as many farmers over the age of 65 as under 35. The average age of NE farmers is 55 years old; 8% of the region's farmers are under 35, a drop of 46% between 1987 and 1997. In the US, 70% of farms will transition over the next 15 years, and up to 400 million acres of farmland will change hands in the next 20 years.

Barriers to farm entry are significant. New farmers must access land, credit, markets, education, and technical assistance if they are to succeed. In the NE, high land prices, an eroding farm service infrastructure — from lenders to extension educators to equipment dealers, and lack of community support for farming — create additional barriers for next generation farmers.

FARMS TO FOOD FACTS

- In every NE state except Delaware, the majority of farmers reported working some days off the farm. *(Source: 1997 USDA Ag Census)*
- Farmers are twice as likely to live in poverty as members of the general public. *(Source: Farm Aid)*
- Suicide is now the leading cause of death among American farmers – occurring at a rate three times that of the general population. *(Source: The Ecologist, June 2000)*

Figure 16. NE FARM OPERATORS, 1997
by principal occupation

	Farming	Other
ME	2,872,000	3,220,000
NH	1,260,000	1,677,000
VT	3,300,000	2,528,000
MA	2,927,000	2,647,000
RI	370,000	365,000
CT	1,824,000	1,863,000
NY	18,426,000	13,331,000
NJ	3,920,000	5,181,000
PA	25,635,000	19,822,000
DE	1,497,000	963,000
MD	6,235,000	5,849,000
WV	7,145,000	10,627,000
TOTAL	961,560,000	950,299,000

Source: USDA Agriculture Census 1997

Figure 17. NE FARM OPERATORS, 1987 & 1997
by age

1997	Under 25	25-44	45-59	60 & over
ME	39	1,399	2,345	2,027
NH	12	732	1,225	968
VT	30	1,630	2,342	1,826
MA	31	1,324	2,267	1,952
RI	6	190	289	250
CT	20	894	1,340	1,433
NY	225	8,605	12,359	10,568
NJ	399	4,089	3,594	3,421
PA	692	13,583	16,168	15,014
DE	35	651	903	871
MD	96	2,819	4,627	4,542
WV	87	3,531	6,626	7,528
NE	1,672	39,447	54,085	50,400

1987	Under 25	25-44	45-59	60 & over
ME	53	2,080	2,280	1,856
NH	13	847	889	766
VT	56	2,185	2,011	1,625
MA	50	2,067	1,971	2,128
RI	9	216	237	239
CT	28	1,049	1,198	1,305
NY	370	12,513	13,413	11,447
NJ	770	2,602	3,318	3,032
PA	853	17,300	17,531	15,865
DE	40	994	975	957
MD	227	4,318	5,094	5,137
WV	137	4,188	5,676	7,236
NE	2,606	50,359	54,593	51,593

Source: USDA Agriculture Census 1997

Figure 18. NE MINORITY FARM OPERATORS, 1930–1997

	1930	1964	1987	1997
ME	17	6	13	12
NH	8	5	11	3
VT	22	2	16	15
MA	64	48	18	31
RI	11	1	n/a	2
CT	37	18	16	13
NY	460	191	120	139
NJ	384	158	102	119
PA	363	124	98	106
DE	807	122	41	33
MD	5,267	1,726	408	239
WV	491	92	45	64
NE	7,931	2,493	888	776

Black and other races: This category includes Blacks, American Indians, Asian or Pacific Islanders and all other racial groups other than white. (USDA Definition)

Source: American Farmland Trust 2000

FARMS TO FOOD FACTS

- Across the 12 NE states there were 776 minority-operated farms in 1997.
- Of the 143,202 farms in the NE, .5% were operated by minorities.
- Regionally, the numbers of minority-operated farms declined by 69% from 1964 to 1997; 90% from 1930 to 1997.
- 10.3% of NE farmers are women; this is slightly higher than the 8.6% national percentage.
- The NE has about 9% of all female farmers in the US.
- While the number of male farmers in the NE declined by nearly 18,000 from 1987 to 1997, the number of female farmers increased by about 2,500.
- There are fewer than 200 African-American farmers under the age of 35 years old in the US.

Source: USDA Agriculture Census 1997

NE farmers are among the most innovative in the country. They test new methods to control production costs, experiment with value-added products, find new niches for their products, and seek new market opportunities. At the same time, they face additional pressures that result from living in urbanizing environments such as nuisance complaints, local regulations, and unfriendly neighbors. It is harder to obtain credit, hold on to rented land, or find a custom operator or equipment parts. It is harder to be heard and to shape local and state policy.

Figure 19. NE FARM OPERATORS BY GENDER, 1987 & 1997

FEMALE	1997	1987	MALE	1997	1987
ME	819	564	ME	4,991	5,705
NH	517	318	NH	2,420	2,197
VT	782	575	VT	5,046	5,302
MA	1,390	1,422	MA	4,648	5,415
RI	115	90	RI	620	611
CT	553	456	CT	3,134	3,124
NY	3,125	2,736	NY	28,632	35,007
NJ	1,356	962	NJ	7,745	8,070
PA	3,249	2,792	PA	42,208	48,757
DE	282	290	DE	2,178	2,676
MD	1,390	1,422	MD	10,694	13,354
WV	1,684	1,290	WV	16,088	15,947
NE	14,798	12,296	NE	128,404	146,165
US	165,102	131,641	US	1,746,757	1,956,118

Source: USDA Agriculture Census 1997

Farm Labor

Perhaps the least visible contributor to our farm production system is the farm laborer. It is particularly difficult for NE farmers to secure local labor because of competition from other employment sectors. Farm work typically is low-paying, exhausting, and negatively stigmatized. In 1996, about 906,000 people were hired as farm workers in the US as their main job, and these workers were more likely than all US workers to be "male, Hispanic, young, less educated, unmarried, and non-US citizens." According to CATA, a N.J.-based migrant farmworker organization, the average annual per capita income of farmworkers is between $7,000 and $8,000.

The NE employs a large number of foreign workers in the poultry industry. In the NE fresh produce industry, the labor force that is responsible for manually harvesting and packing the fresh fruits and vegetables is primarily young, male, and Hispanic, earning an average of $260 per week.

Source: Runyan, J.L. 1998. Profile of Hired Farmworkers, 1996 Annual Averages. USDA, ERS.

FARMS TO FOOD FACTS

- In 1997 there were about 256,000 paid (non-family) farm workers on about 48,500 different NE farms.
- Of the about 143,000 farms across the NE in 1997, approximately 34% employed hired workers in 1997, and 3.3% employed 10 or more workers.
- In the NE states the majority of farms hiring labor (26,000 farms) hire just one or two workers.
- In 1996, 69% of hired farmworkers were employed in the west and the south. Only 7% were employed in the NE.
- The NE and midwest had a higher percentage of white workers and a lower percentage of Hispanic workers than other US regions.

Source: USDA Agriculture Census 1997 and Runyan, J.L.

Figure 20. HIRED FARM LABOR IN THE NE, 1992 & 1997

	Hired Farm Labor: Total Farms		Hired Farm Labor: Total Workers		Farms with 1-2 workers: Farms		Farms with 3-9 workers: Farms		Farms with 10+ workers: Farms	
	1997	1992	1997	1992	1997	1992	1997	1992	1997	1992
ME	2,472	2,485	22,009	22,951	1,001	817	968	1,090	503	578
NH	907	885	5,082	4,534	473	489	328	309	106	87
VT	2,485	2,508	8,912	8,501	1,381	1,475	991	918	113	115
MA	2,188	1,847	13,930	12,469	1,010	730	854	797	359	320
RI	277	237	1,425	1,335	119	119	119	85	39	33
CT	1,304	1,001	13,415	11,416	579	429	556	410	169	162
NY	11,563	12,903	61,589	68,082	5,853	6,592	4,460	4,921	1,250	1,390
NJ	2,980	2,659	23,262	22,541	1,554	1,203	905	944	521	512
PA	14,055	14,447	66,295	67,085	8,077	8,147	4,924	5,246	1,054	1,054
DE	938	946	5,299	4,730	514	509	331	362	93	76
MD	4,814	4,875	21,212	20,453	2,785	2,679	1,651	1,834	379	362
WV	4,513	5,179	13,607	17,474	2,751	3,055	1,654	1,890	108	234
NE	**48,496**	**49,972**	**256,037**	**261,571**	**26,097**	**26,244**	**17,741**	**18,806**	**4,694**	**4,923**

Source: USDA Agriculture Census 1997

Figure 21. FARM LABOR CHARACTERISTICS, 1998

	Northeast	South	Midwest	West
Total Workers	**65,000**	**280,000**	**217,000**	**344,000**
Gender (% of Total)				
Male	71.9	85.1	84.3	85.8
Female	28.1	14.9	15.7	14.2
Racial/Ethnic Group (% of Total)				
White	92.3	53.5	96.5	33.2
Hispanic	7.1	35	2.6	63.3
Black and Other	0.6	11.5	0.9	3.4
Age (% of Total)				
<20	28.2	13.4	34	7.4
20-24	9.1	9.9	10.5	12
25-34	13.8	22.3	20.3	29.8
35-44	24.4	22	15.1	25.7
45-54	6.2	18.7	10.9	12.5
55 and older	18.3	13.7	9.2	12.6
Median Age (years)				
	32	36	27	35

	Northeast	South	Midwest	West
Schooling Completed (% of Total)				
0-4 Years	0.5	12	0.6	24.4
5-8 Years	10.9	18.8	11	28.2
9-11 Years	30.7	27.8	30	16.2
12 Years	44.9	26	35.6	14.9
≥13 Years	13	15.4	22.8	16.3
Establishment (% of Total)				
Crop Production	42.2	47.4	28.3	66.6
Livestock Production	51.4	43.3	66	20.8
Other	6.4	9.3	5.7	12.6
Weekly Earnings (% of Total)				
Less than $100	20.3	13.4	23.9	7.7
$100-$199	22.4	17.8	19.4	14.8
$200-$299	24.2	35.8	21.4	38.6
$300-$399	17.6	14.5	14.2	16
$400-$499	5.5	8.8	12.7	11.3
$500-$599	1.8	3.5	3.3	4.7
$600 and over	8.2	6.2	4.9	6.9
Median Weekly Earnings				
	$225	$240	$225	$260

Source: Runyan, J.L. 1998.

Figure 22. FARM WAGE RATES, JULY 11–17, 1999

	Hired Workers	Field (wage/hr)	Livestock (wage/hr)	Field/Livestock (wage/hr)
Northeast 1 (CT, ME, MA, NH, NY, RI, VT)	48,000	$7.87	$6.69	$7.47
Northeast 2 (DE, MD, NJ, PA)	49,000	$7.17	$6.45	$6.98
Appalachian (KY, TN, WV)	40,000	$6.25	$6.57	$6.37
California (included for comparative reasons)	322,000	$7.15	$8.05	$7.22

Source: Agricultural Statistics 2000, Table 9-19

Farm Ownership and Tenure

Ownership of farmland and farm assets is one indicator of the "structure of agriculture." In the NE, virtually all farms are owned by individuals, partnerships, or family corporations. Yet corporate ownership and control of farms are on the rise in several NE states. This trend undermines efforts to build and revitalize local economies and to steward communities' agricultural resources. Because of the difficulty in acquiring land, NE farmers and farming advocates are working to find alternative tenure models — other ways to achieve secure, affordable access to NE farmland. Nontraditional approaches, such as the use of conservation easements, stewardship standards, and long-term leases, and nontraditional partners, such as land trusts, farm neighbors, CSA shareholders, and schools, are key components of these solutions.

Figure 23. FARM OWNERSHIP IN NE, 1987 & 1997

	1997				1987			
	Ind. Prop.	Partnership	Family Corp.	Other Corp.	Ind. Prop.	Partnership	Family Corp.	Other Corp.
ME	5,064	306	362	41	5,594	350	281	19
NH	2,547	179	144	16	2,234	140	96	16
VT	4,915	538	294	24	5,096	510	209	23
MA	4,496	443	494	60	5,124	481	493	51
RI	573	54	92	6	567	45	76	4
CT	2,996	344	277	34	2,923	355	244	32
NY	26,855	3,153	1,416	152	32,149	3,835	1,412	133
NJ	7604	635	702	81	7,503	740	651	53
PA	40,176	3,957	1,024	117	45,796	4,581	872	110
DE	1995	207	222	14	2,553	216	173	8
MD	10,229	994	706	65	12,738	1,323	570	49
WV	16,475	918	245	40	15,988	971	176	21
NE	**123,925**	**11,728**	**5,978**	**650**	**138,265**	**13,547**	**5253**	**519**

Source: USDA Agriculture Census 1997

Individual or Family (Sole Proprietorship): Excludes partnership and corporations.
Partnerships: Includes family partnerships.
Corporations: Includes family corporations and other than family-held corporations.

Contracts in Agriculture

In 1997, one-third of all US crops were grown under contract, meaning they were sold to a buyer before actual harvesting. Many farmers enter into production or marketing contracts as a way to manage risk in an increasingly risky industry. In the fresh produce sector, 47.7% of all production was grown under contract by the end of the 1990s. Two-thirds of all farms with contracts were small farms, but three-quarters of the total value of contracted sales came from large farms. In the NE, contract arrangements are most prevalent in the poultry industry, and also increasingly in hogs and dairy. The concentration of purchasing power in the hands of a few large buyers raises concerns about monopolistic market control and the autonomy of individual producers.

FARMS TO FOOD FACTS

- Nearly half of US land is farmland (including rangeland); nearly 50% of farmland is held by 4% of landowners.
- About a quarter of NE farmers own all the land they farm.
- Nearly two-thirds farm land they own plus land they rent.
- Eleven percent of NE farmers are tenant farmers (they do not own any farmland).
- There were 921 NE farms (out of 15,000 reported in the US) considered "educational, estate/trust, cooperative, and other institutional" in 1997.

FULL OWNERS: Operate only land they own.
PART OWNERS: Operate land they own and also land they rent from others.
TENANTS: Operate only land they rent from others or work on shares for others.

FARMLAND UNDER FOREIGN OWNERSHIP: 1997

Sixty-one percent of the land reported as foreign holdings actually involves land owned by US companies. US law requires landowners to register their property as foreign-owned land if as little as 10% of their stock is held by foreign investors.

Figure 24. FOREIGN-OWNED FARMLAND IN NE, 1997

State	Acres
ME	3,037,198*
NH	18,919
VT	84,490
MA	2,643
CT	1,216
NY	286,445
NJ	23,898
PA	103,669
DE	5,878
MD	51,694
WV	176,225
US	14,300,000

*Considerable forest held by Canadian companies

Source: USDA Agricultural Fact Book 1998

Figure 25. FARM TENURE IN US, 1910–1997

	FARM ACREAGE	TENURE OF OPERATOR		
	Acres	Full Owners	Part Owners	Tenants
1910	878,798,325	52.9%	15.2%	25.8%
1930	990,111,984	37.6%	24.9%	31.0%
1950	1,161,419,720	36.1%	32.5%	18.3%
1964	1,110,187,000	28.7%	48.0%	13.1%
1982	986,796,579	34.7%	53.8%	13.2%
1997	932,475,414	26.7%	62.2%	11.2%

Source: Agricultural Statistics 1999

Figure 26. NUMBER OF FARMS IN NE, 1987 & 1997
by tenure

	1997			1987		
	Full Owners	Part Owners	Tenants	Full Owners	Part Owners	Tenants
ME	3,829	1,654	327	4,211	1,786	272
NH	1,971	783	183	1,679	714	122
VT	3,281	2,073	474	3,383	2,089	405
MA	3,791	1,313	470	4,313	1,449	454
RI	506	167	62	474	153	74
CT	2,381	971	335	2,246	1,058	276
NY	19,170	10,742	1,845	23,039	12,532	2,172
NJ	6,857	1,600	644	6,410	1,782	840
PA	26,602	14,198	4,657	31,484	15,003	5,062
DE	1519	705	236	1,825	857	284
MD	7,576	3,179	1,329	9,375	3,693	1,708
WV	12,761	4,286	725	12,881	3,564	792
NE	90,244	41,671	11,287	101,320	44,680	12,461

Source: USDA Agriculture Census 1997

SECTION THREE
Northeast Production

Farms by Type

The NE region specializes in field crops, hay, livestock and dairy, poultry, and fresh produce. With our varied topography, soils, and growing seasons, the region has carved a niche in the US agriculture economy. The following data show that the most commonly grown agricultural commodities are: beef and dairy cows, hay, and hogs. These crops provide the traditional backbone for farming in the NE. Other industries such as layers and broilers, fruits and vegetables, and field crops also play an important role in regional agriculture.

NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM

The NAICS Classification replaced the SIC (Standard Industry Classification) for the 1997 Agriculture Census. The data at left reflect some of the categories reported in 1997.

(11211)	Beef cattle ranching and farming
(11212)	Dairy cattle and milk production
(1122)	Hog and pig farming
(1123)	Poultry and egg production
(1124)	Sheep and goat farming
(1125, 1129)	Animal aquaculture and other animal production
(1111)	Oilseed and grain farming
(1112)	Vegetable and melon farming
(1113)	Fruit and tree nut farming
(1114)	Greenhouse, nursery and floriculture production
(11191)	Tobacco farming
(11193, 11194, 11199)	Sugarcane farming, hay farming and all other crop farming

Source: USDA Agriculture Census 1997: Table 51

Figure 27. NUMBER OF NE FARMS, 1997
by commodity NAICS categories (some farms are in more than one category)

	Beef Cattle	Dairy Cattle	Hogs and Pigs	Sheep	Poultry/ Egg	Aqua/ Other
ME	699	535	71	193	104	468
NH	324	221	58	168	61	330
VT	858	1,767	42	220	59	392
MA	472	338	118	163	115	627
RI	67	32	22	24	21	78
CT	420	266	46	100	89	419
NY	4,821	7,852	314	696	281	2,602
NJ	620	207	118	318	188	1,180
PA	7,083	9,591	1,130	993	1,320	2,947
DE	89	91	26	11	822	164
MD	1,867	889	173	289	1,091	1,280
WV	10,276	249	124	364	428	1,036
NE	**27,596**	**22,038**	**24,280**	**3,539**	**4,579**	**11,523**

	Oilseed Grain	Vegetable	Fruit	Greenhouse	Tobacco	Hay
ME	179	733	805	704		1,224
NH	36	190	194	482		841
VT	66	159	154	481		1,568
MA	82	625	865	1,044	47	1,029
RI	10	89	48	230		96
CT	73	341	180	901	68	721
NY	2,549	1,585	1,913	2,820		5,744
NJ	1,002	1,155	447	2,331		1,333
PA	6,664	1,305	1,317	3,255	232	7,157
DE	864	117	21	140		85
MD	2,701	504	226	821	573	1,314
WV	327	197	238	446	581	3,039
NE	**14,553**	**7,000**	**6,408**	**13,655**	**1,501**	**24,151**

Source: USDA Agriculture Census 1997

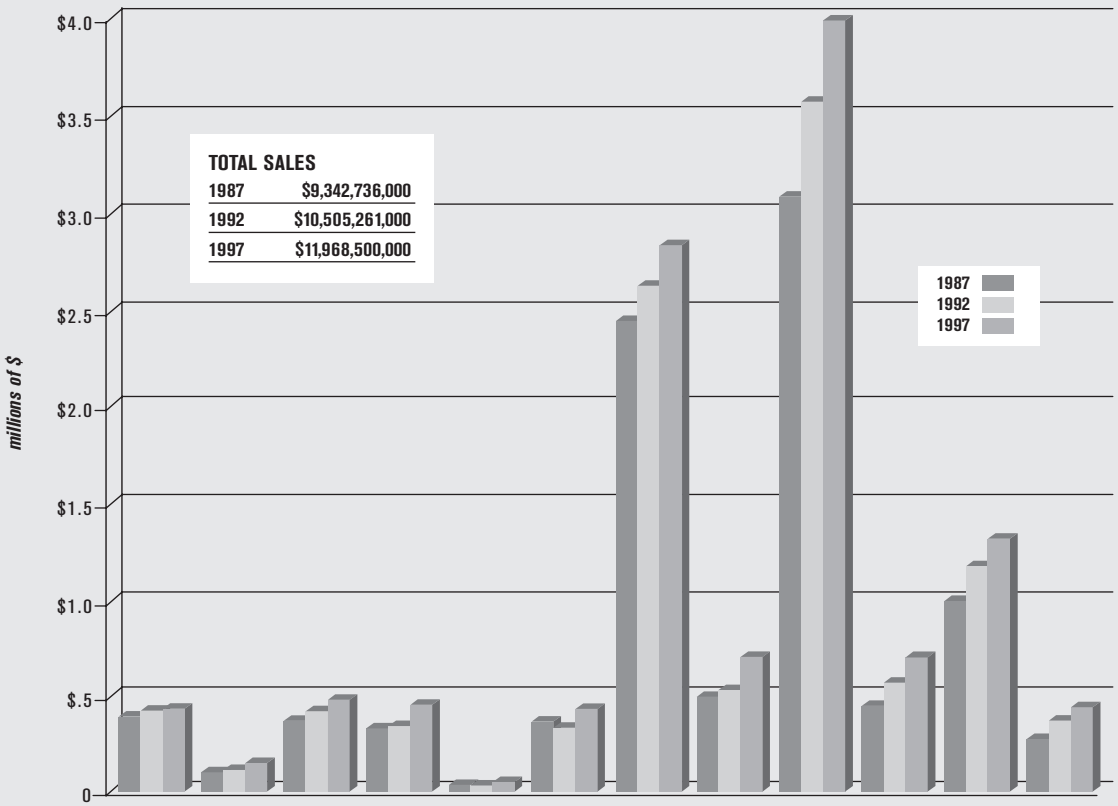
Figure 28. ACREAGE OF NE FARMS, 1997
by commodity, NAICS categories

	Beef Cattle	Dairy Cattle	Hogs and Pigs	Sheep	Poultry/ Egg	Aqua/ Other	
Maine	124,110	226,746	6,718	20,822	11,625	37,015	
New Hampshire	49,916	92,901	4,268	12,256	4,291	20,634	
Vermont	144,604	708,392	2,410	19,736	7,201	38,077	
Massachusetts	56,288	108,582	7,356	8,510	6,380	26,296	
Rhode Island	5,993	6,590	751	1,546	1,708	2,899	
Connecticut	43,922	99,425	2,571	4,941	4,881	15,574	
New York	836,050	3,257,510	37,340	69,430	38,999	220,974	
New Jersey	44,955	78,232	5,744	8,007	11,785	44,930	
Pennsylvania	930,321	2,458,392	137,794	65,319	155,526	180,621	
Delaware	7,880	32,731	5,905	359	116,954	7,281	
Maryland	222,244	294,733	19,975	11,690	160,551	72,867	
West Virginia	2,197,927	107,921	18,689	45,958	127,890	99,855	
Northeast	**4,664,210**	**7,472,155**	**7,721,676**	**268,574**	**647,791**	**767,023**	

	Oilseed Grain	Vegetable	Fruit	Greenhouse	Tobacco	Hay	
Maine	42,931	282,154	158,482	55,773		223,929	
New Hampshire	10,831	16,588	25,077	30,216		144,104	
Vermont	20,509	15,064	9,927	17,770		239,881	
Massachusetts	14,838	40,979	84,889	36,138	4,637	119,124	
Rhode Island	1,873	5,587	3,756	12,329		10,417	
Connecticut	14,889	26,063	14,065	39,287	9,196	78,247	
New York	909,974	357,642	219,331	194,353		1,020,345	
New Jersey	240,413	123,104	61,682	93,794		109,703	
Pennsylvania	1,340,747	148,905	123,692	215,859	9,816	1,074,759	
Delaware	303,353	65,201	1,786	8,047		24,588	
Maryland	1,003,387	71,955	22,372	44,228	43,104	153,210	
West Virginia	99,304	17,067	13,707	19,581	65,569	495,581	
Northeast	**4,003,049**	**1,170,309**	**738,766**	**767,375**	**132,322**	**3,693,888**	

Agricultural Sales

Figure 29. SALE OF AGRICULTURAL PRODUCTS, 1987–1997



	ME	NH	VT	MA	RI	CT	NY	NJ	PA	DE	MD	WV
1987	$405,484,000	107,102,000	375,537,000	340,464,000	37,786,000	357,702,000	2,441,860,000	496,003,000	3,077,523,000	443,575,000	989,061,000	270,639,000
1992	430,324,000	114,070,000	413,253,000	350,639,000	39,512,000	336,983,000	2,622,001,000	532,988,000	3,570,191,000	559,766,000	1,169,331,000	364,203,000
1997	438,673,000	149,467,000	476,343,000	454,404,000	48,200,000	421,648,000	2,834,512,000	697,380,000	3,997,565,000	690,794,000	1,312,086,000	447,428,000

Source: USDA Agriculture Census 1997

FARMS TO FOOD FACTS

- Between 1987 and 1997 agricultural sales in the NE increased 22% from $9.3 billion to $11.9 billion.
- The states with the largest increases in agricultural sales between 1987 and 1997 were West Virginia (40%), Delaware (36%), Massachusetts (26%), and Maryland (25%).
- Dairy is among the top five commodities in terms of cash receipts in every NE state. *(Source: USDA Ag Fact Book, 1998)*
- The region's second most dominant crop in terms of cash receipts in 1997 was "greenhouse and nursery crops."
- Between 1987 and 1997, 31% of the region's orchards disappeared; New York lost nearly one-half of its orchard acres during that time.

Production by Commodity

From northern New England, where the hilly landscape and cool climate support dairy, cattle, and specialty crops, to the coastal plains of New Jersey and Maryland, where poultry and fresh produce are the mainstays, the NE is one of the most agriculturally diverse regions in the US. Markets also shape production: the greenhouse and nursery sectors flourish in this region of high population centers and sprawling subdivisions.

Figure 30. TOP COMMODITIES IN NE, 1997

MAINE		% State Receipts	% US Total Value
1	Potatoes	21.7	4.1
2	Dairy Products	21.3	0.5
3	Chickens/Eggs	19.6	1.6
4	Aquaculture	11.3	7.3
5	Blueberries	6.4	17.4
	TOTAL		0.3%

VERMONT		% State Receipts	% US Total Value
1	Dairy Prod.	76.4	1.8
2	Cattle	8.9	0.1
3	Greenhouse	3.4	0.2
4	Hay	2.1	0.3
5	Maple Products	2.0	33.2
	TOTAL		0.3%

NEW HAMPSHIRE		% State Receipts	% US Total Value
1	Greenhouse	35.2	0.4
2	Dairy Products	32.4	0.2
3	Apples	5.1	0.6
4	Cattle	4.2	–
5	Hay	2.7	0.1
	TOTAL		0.1%

CONNECTICUT		% State Receipts	% US Total Value
1	Greenhouse	34.8	1.4
2	Dairy	17.3	0.4
3	Chickens	8.3	0.9
4	Aquaculture	3.7	2.2
5	Tobacco	2.6	0.5
	TOTAL		0.3%

MASSACHUSETTS		% State Receipts	% US Total Value
1	Greenhouse	32.1	1.0
2	Dairy	17.2	0.3
3	Cranberry	12.7	21.9
4	Sweet Corn	3.5	2.0
5	Apples	2.4	0.9
	TOTAL		0.2%

RHODE ISLAND		% State Receipts	% US Total Value
1	Greenhouse	63.0	0.2
2	Dairy	10.0	–
3	Sweet Corn	2.0	0.2
4	Potatoes	1.8	–
5	Cattle	1.8	–

NEW YORK		% State Receipts	% US Total Value
1	Dairy Products	56.1	7.5
2	Greenhouse	8.9	2.2
3	Cattle	4.0	0.3
4	Apples	3.9	8.6
5	Hay	2.8	2.6
	TOTAL		1.6%

NEW JERSEY		% State Receipts	% US Total Value
1	Greenhouse	36.1	2.4
2	Horses	7.0	3.0
3	Dairy	5.4	0.1
4	Cranberries	3.7	9.0
5	Peaches	3.6	6.8
	TOTAL		0.4%

PENNSYLVANIA		% State Receipts	% US Total Value
1	Dairy Products	41.4	7.1
2	Greenhouse	8.3	2.8
3	Cattle	8.1	1.0
4	Chicken Eggs	7.2	6.9
5	Mushrooms	6.7	50.1
	TOTAL		2.1%

DELAWARE		% State Receipts	% US Total Value
1	Broilers	72.0	3.6
2	Soybean	4.6	0.2
3	Greenhouse	3.7	0.2
4	Dairy	3.2	0.1
5	Corn	2.1	0.1
	TOTAL		0.3%

MARYLAND		% State Receipts	% US Total Value
1	Broilers	35.0	3.5
2	Greenhouse	17.1	2.1
3	Dairy	13.7	0.8
4	Soybean	5.1	0.5
5	Cattle	4.0	0.1
	TOTAL		0.7%

WEST VIRGINIA		% State Receipts	% US Total Value
1	Broilers	34.3	0.9
2	Cattle	19.7	0.2
3	Dairy	10.7	0.2
4	Turkeys	10.6	1.4
5	Chicken Eggs	6.5	0.6
	TOTAL		0.2%

Source: USDA Agriculture Census 1997: State Profiles

Figure 31. ANIMAL AGRICULTURE IN THE NE, 1997

HOGS	Number of Animals	Value per Head	Total Value
ME	6,000	$88	$528,000
NH	2,500	$97	$242,500
VT	2,200	$110	$242,000
MA	15,500	$88	$1,364,000
RI	2,600	$85	$221,000
NY	67,000	$81	$5,427,000
NJ	16,000	$97	$1,552,000
PA	1,000,000	$85	$85,000,000
DE	18,000	$79	$1,422,000
MD	73,000	$81	$5,913,000
WV	14,000	$85	$1,190,000
TOTAL	1,216,800		$103,101,000

MILK COWS	Number of Animals	Milk per Cow (pounds)	Pounds of Milk (thousands)	Total Value
ME	40,000	16,025	641,000	$102,725,000
NH	20,000	16,300	326,000	$50,544,000
VT	157,000	16,210	2,545,000	$397,289,000
MA	28,000	16,000	448,000	$70,967,000
RI	2,200	14,773	32,500	$4,867,000
NY	703,000	16,501	11,600,000	$1,719,803,000
NJ	23,000	13,913	320,000	$45,441,000
PA	642,000	16,511	10,600,000	$1,677,400,000
DE	10,000	14,500	145,000	$21,257,000
MD	91,000	14,725	1340,000	$201,501,000
WV	21,000	12,667	266,000	$36,304,000
TOTAL	1,737,200		28,263,500	$4,328,098,000

EGGS	Eggs (thousands)	Average Number of Layers	Value
ME	1,434,000	5,026	$82,933,000
NH	46,000	148	$3,163,000
VT	50,000	166	$2,827,000
MA	156,000	540	$7,930,000
RI	24,000	90	$1,178,000
NY	931,000	3,382	$51,671,000
NJ	463,000	1,856	$24,037,000
PA	5,786,000	21,275	$321,058,000
DE	112,000	471	$10,733,000
MD	882,000	3,362	$53,802,000
WV	245,000	1,081	$24,041,000
TOTAL	10,129,000	37,397	$583,373,000

CATTLE and CALVES	Number of Head	Value per Head	Total Value
ME	116,000	$670	$77,720,000
NH	41,000	$760	$31,160,000
VT	300,000	$790	$237,000,000
MA	62,000	$760	$47,120,000
RI	7,000	$690	$4,830,000
NY	1,540,000	$750	$1,155,000,000
NJ	66,000	$790	$53,720,000
PA	1,770,000	$730	$1,292,100,000
DE	27,000	$740	$19,980,000
MD	270,000	$690	$186,900,000
WV	450,000	$410	$184,500,000
TOTAL	4,649,000		$3,290,030,000

BROILERS	Number	Weight (pounds)	Value
DE	256,900,000	1,413,000,000	$529,875,000
MD	295,300,000	1,417,000,000	$531,525,000
NY	1,400,000	7,000,000	$2,730,000
PA	135,200,000	689,500,000	$258,563,000
WV	90,800,000	381,400,000	$139,211,000

Source: Agricultural Statistics 1999

Figure 32. PRINCIPAL VEGETABLE CROPS, 1997

tons

	Fresh Market	Processing	Total
ME	6,050		6,050
NH	6,900		6,900
VT	4,150		4,150
MA	27,650		27,650
RI	3,850		3,850
NY	678,800	510,420	1,189,220
NJ	228,750	58,040	286,790
PA	97,700	82,150	179,850
DE	32,300	139,610	171,910
MD	77,800	99,530	177,330
TOTAL	1,163,950	889,750	2,053,700
US	21,406,550	16,204,740	37,613,290

Figure 33. APPLES, 1997

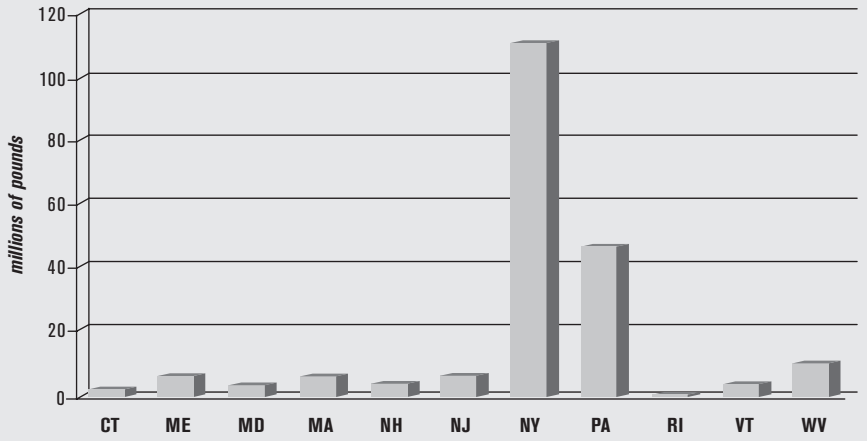


Figure 34. SELECTED CROPS, 1997

POTATOES

Summer	Acres	CWT
DE	4,200	966,000
MD	3,400	559,000
NJ	2,200	663,000
Fall		
ME	71,000	19,170,000
MA	2,700	675,000
NY	29,500	8,408,000

TOBACCO

	Pounds
CT	3,572,000
MA	1,876,000
MD	12,000,000
PA	15,360,000
WV	3,060,000

SNAP BEANS

(Fresh)	Acres	CWT
MD	1,800	59,000
NJ	3,300	116,000
NY	4,900	304,000

SNAP BEANS

(Processed)	Acres	1,000 CWT
NY	22,800	77,520,000
PA	18,450	29,900,000

TOMATOES

(Fresh)	Acres	CWT
MD	2,500	325,000
MA	400	56,000
NJ	4,200	756,000
NY	2,600	312,000
PA	3,800	494,000

SWEET CORN

(Fresh)	Pounds
ME	2,200,000
NY	21,200,000
NJ	8,600,000
PA	16,000,000
MA	7,100,000

SWEET CORN

(Processed)	Pounds
NY	78,600,000
PA	5,400,000

*CWT = 100 pounds

Source, all figures this page: NASS Crops Branch in 1998 Agricultural Statistics

Figure 35. US RANKINGS BY COMMODITY, SELECTED CROPS, 1997

DAIRY PRODUCTS

	State Ranking	Value
NY	3	$1,459,707,000
PA	4	$1,320,801,000
VT	14	$352,566,000

NURSERY, GREENHOUSE

	State Ranking	Value
PA	4	$639,788,000
NJ	10	$290,722,000
NJ	11	$277,957,000
CT	17	$172,371,000

FRUIT/NUTS

	State Ranking	Value
NY	6	$185,078,000
MA	8	$148,247,000
PA	12	$93,252,000
NJ	13	$89,768,000
ME	15	$47,118,000

HAY

	State Ranking	Tons
NY	14	4,035,722
PA	16	3,931,973

POULTRY

	State Ranking	Value
PA	11	$720,263,000
MD	14	$588,987,000
DE	16	$478,938,000

VEGETABLES

	State Ranking	Value
NY	8	$206,866,000
NJ	10	$150,508,000
PA	17	$64,658,000

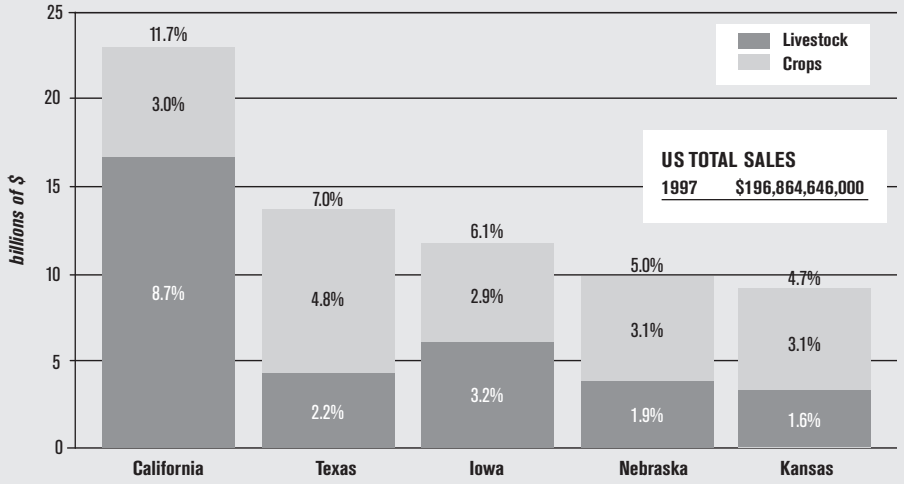
FARMS TO FOOD FACTS

- Total NE sales in 1997 were $11,968,500,000
- NE sales were 6.3% of total US sales.
- NE livestock sales in 1997 were $7,900,407,000; 4% of total US sales.
- NE crop sales in 1997 were $4,669,214,000; 2.3% of total US sales.

Source: USDA Agriculture Census 1997: State Ranking

Figure 36. TOP FIVE STATES, AGRICULTURAL PRODUCTION, 1997

by percent, total national agricultural sales; these five states account for 34.5% of the total



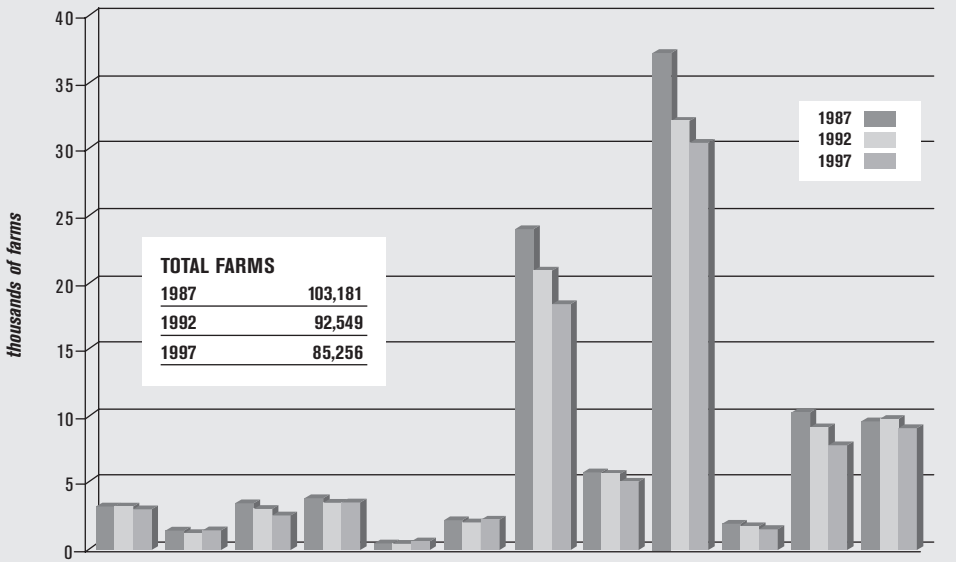
SECTION FOUR
Production Systems

NE farmers employ a variety of production systems, depending on crop(s), location, natural features of the farm, economics, and personal preferences. Production systems are selected to maximize yield and efficiency, while taking into consideration other factors such as markets, animal health, soil health, equipment acquisition and management, labor, pest management, etc. No two farms have the same mix of factors, and no two farms have the same production system. In recent years, farmers have been challenged by new findings about the impacts of certain management practices, new regulations, new technologies, and new products. Most NE farmers employ one or more conservation practices on their farms, and many farms have farm conservation plans that guide their production strategies.

FARMS TO FOOD FACTS

- Sixty-nine percent of NE farms reported using commercial fertilizer in 1997 compared with 75% of all farms in 1987.
- Commercial fertilizer was applied to 7,700,000 NE acres in 1997.
- An 8% decrease in acres fertilized, compared with a 2% decrease in harvested acres, suggests a declining trend in fertilizer use.
- Delaware, Maryland, and Rhode Island were the NE states with the highest percentage of farms using commercial fertilizer in 1997.

Figure 37. COMMERCIAL FERTILIZER USE BY NE FARMS, 1987–1997



	ME	NH	VT	MA	RI	CT	NY	NJ	PA	DE	MD	WV
1987	3,252	1,352	3,418	3,858	399	2,138	24,061	5,743	37,230	1,807	10,292	9,631
1992	3,181	1,287	3,097	3,481	408	2,051	20,843	5,533	32,207	1,666	9,078	9,717
1997	3,031	1,400	2,612	3,478	493	2,146	18,390	4,981	30,482	1,424	7,745	9,074

Source: USDA Agriculture Census 1997

Fertility Management

Certain contemporary farming practices, while increasing production, have had well-documented detrimental effects on the environment and human health. Excess nutrients (nitrogen and phosphorus) from fertilizers have polluted surface and ground water across the US; approximately 50% of surface water pollution is attributed to agricultural nutrients and sediments. At the same time, erosion continues to degrade about 25% of US soils. Nationally, we lose 3.1 billion tons of topsoil per year. While massive erosion is on average less on NE farms, sloped terrain and exposed cropland can cause localized harmful impacts.

Pest Management

Chemical control of pests (including insects, weeds and disease) escalated in the mid-1950s with the discovery of new synthetic compounds. By 1980, agriculture used 72% of all pesticides applied in the US. Most NE farms use commercial agricultural chemicals to control pests. The documented harmful effects from some pesticide use include degraded surface and ground water, damage to wildlife habitat, and human health problems. According to the National Center for Food and Agriculture Policy, use of commercial agricultural chemicals to control pests increased by 93 million pounds between 1992 and 1997. Some NE farmers have reduced their chemical pesticide use by incorporating Integrated Pest Management techniques or switching to organic management.

FARMS TO FOOD FACTS

- While the amount of pesticides applied to crops since 1945 has increased by 3,300% nationally, crop losses due to pests have increased by 20%.
- Across the NE states, some form of agricultural spray, dust, or fumigant pesticide was applied on 2.3 million acres of farmland in 1997.
- In 1997, 25% of all NE farms reported using pesticides, compared with 30% in 1987.
- Approximately 20% of all harvested acres (including hay) in the NE in 1997 have pesticides applied; this is a decrease of 2.5% since 1987.
- Herbicides account for the majority of pesticides applied, by weight and acreage.

Source: USDA Agriculture Census 1997

Figure 38. ACREAGE TREATED WITH CHEMICALS IN THE NE, 1987–1997

sprays, dusts, granules, fumigants, etc.; acres

MAINE	1997	1992	1987
Insecticides	113,473	133,702	129,050
Fungicides	86,353	87,945	72,535
Herbicides	149,286	146,504	138,262

NEW HAMPSHIRE	1997	1992	1987
Insecticides	8,991	8,622	13,154
Fungicides	4,029	4,173	5,147
Herbicides	22,158	20,654	21,000

VERMONT	1997	1992	1987
Insecticides	20,860	21,402	22,170
Fungicides	8,043	8,418	7,366
Herbicides	89,764	80,223	74,766

MASSACHUSETTS	1997	1992	1987
Insecticides	39,570	41,367	49,252
Fungicides	24,869	24,432	25,050
Herbicides	48,093	47,325	57,337

PENNSYLVANIA	1997	1992	1987
Insecticides	839,684	771,501	958,205
Fungicides	127,982	126,280	132,346
Herbicides	1,635,466	1,516,580	1,643,561

DELAWARE	1997	1992	1987
Insecticides	139,456	135,593	150,686
Fungicides	29,287	21,540	23,904
Herbicides	347,678	376,286	331,691

RHODE ISLAND	1997	1992	1987
Insecticides	5,973	6,599	6,250
Fungicides	2,351	3,143	2,874
Herbicides	8,557	7,666	7,317

CONNECTICUT	1997	1992	1987
Insecticides	25,208	28,590	38,934
Fungicides	12,001	10,376	12,378
Herbicides	46,451	50,297	51,981

NEW YORK	1997	1992	1987
Insecticides	597,399	538,929	615,972
Fungicides	196,947	224,355	214,683
Herbicides	1,335,207	1,297,582	1,447,588

NEW JERSEY	1997	1992	1987
Insecticides	125,943	120,442	150,241
Fungicides	65,675	58,762	65,983
Herbicides	264,225	262,697	268,203

MARYLAND	1997	1992	1987
Insecticides	315,718	395,063	418,327
Fungicides	51,021	60,554	39,094
Herbicides	899,645	888,368	840,439

WEST VIRGINIA	1997	1992	1987
Insecticides	41,830	73,878	64,005
Fungicides	11,142	14,388	16,111
Herbicides	93,500	98,351	128,734

Source: USDA Agriculture Census 1997

Livestock Waste Management

Manure management on NE livestock farms, especially where animal concentration is significant (some hog, cow, and poultry operations) is a particular challenge. If not properly managed (e.g. field-applied in a timely manner or composted), manure can threaten human health as well as contribute to excess nutrient problems in streams, rivers, lakes, and estuaries. The challenge is compounded by limited land base and seasonally frozen ground and close proximity of non-farming neighbors. Pollution of the Chesapeake Bay has raised major regional concern — and response. Several NE states require nutrient management plans for farms.

FARMS TO FOOD FACTS

- The NE produces 2.3 tons of animal waste per acre of farmland; this is more than double the national average.
  (Source: USDA/NRI 2000)
- There are 560 confined animal feeding operations in the NE (defined as >1000 animal units).
  (Source: Animal Husbandry Division, USDA/NRCS)

Figure 39. POULTRY AND MILK COW WASTE, 2000

	ALL POULTRY, BOTH CONFINED AND NOT CONFINED					CONFINED POULTRY			
	Farms with Poultry	Total Number of Poultry	Tons of Dry Manure	Pounds of Manure N	Pounds of Manure P	Number of Farms	Tons of Dry Manure	Pounds of Manure N	Pounds of Manure P
CT	243	16,972	47,648	5,140,425	1,905,584	102	46,647	3,392,219	1,588,570
DE	875	86,880	322,282	34,614,997	10,118,589	842	315,822	20,378,604	8,403,797
ME	329	23,859	65,415	7,061,776	2,628,637	110	64,030	4,584,124	2,190,707
MD	1,411	121,487	427,538	46,079,147	13,982,126	1,135	418,909	27,401,327	11,619,164
MA	297	3,205	8,534	937,453	349,853	95	8,275	586,316	288,563
NH	190	1,145	3,221	349,077	126,095	58	3,106	215,418	103,271
NJ	301	d	d	d	d	119	d	d	d
NY	1,372	20,793	55,799	6,111,543	2,270,839	305	54,402	3,868,749	1,884,630
PA	3,366	227,860	622,987	68,957,459	24,545,635	1,700	610,049	41,588,123	20,437,979
RI	60	314	887	96,339	35,292	21	854	61,209	28,886
VT	341	1,247	3,398	372,218	138,542	65	3,250	235,414	112,753
WV	1,100	67,232	192,176	21,370,311	7,242,350	436	188,218	12,174,760	6,022,669
US	75,561	6,122,411	17,857,625	1,973,478,606	665,885,198	35,941	17,489,479	1,152,871,448	553,863,183

	ALL MILK COWS, BOTH CONFINED AND NOT CONFINED					CONFINED MILK COWS			
	Farms with Milk Cows	Total Number of Milk Cows	Tons of Dry Manure	Pounds of Manure N	Pounds of Manure P	Number of Farms	Tons of Dry Manure	Pounds of Manure N	Pounds of Manure P
CT	358	37,841	83,249	6,164,814	1,107,244	239	73,212	2,180,781	836,811
DE	128	12,482	27,461	2,033,583	365,246	102	21,729	647,244	248,361
MR	669	55,043	121,095	8,967,403	1,610,609	493	94,819	2,824,394	1,083,779
MD	1,076	114,781	252,518	18,699,629	3,358,586	891	200,095	5,960,295	2,287,090
MA	466	36,254	79,759	5,906,351	1,060,823	307	62,035	1,847,861	709,063
NH	322	26,427	58,139	4,305,375	773,276	214	45,622	1,358,957	521,460
NJ	287	24,365	53,603	3,969,417	712,935	205	42,012	1,251,413	480,193
NY	8,685	946,520	2,082,345	154,202,918	27,695,940	7,637	1,649,855	49,144,678	18,857,842
PA	10,839	839,788	1,847,533	136,814,539	24,572,864	9,432	1,454,702	43,331,600	16,627,242
RI	42	3,022	6,648	492,269	88,415	31	5,256	156,568	60,079
VT	1,924	220,070	484,155	35,852,880	6,439,432	1,720	432,633	12,886,948	4,944,991
WV	646	24,954	54,899	4,065,405	730,176	215	40,673	1,211,527	464,888
US	115,479	12,289,085	27,035,987	2,002,083,678	359,588,462	86,354	21,341,266	635,698,117	243,930,673

Source: USDA,ERS. 2001. Confined Animal and Manure Nutrient Data System

Energy Use

After the energy crisis of the 1970s, numerous studies investigated energy use and efficiency in agriculture. More recently, researchers have studied the role of energy in the entire food system. In a 1989 study by Pimental, energy use was calculated for the entire food system. According to this study, the food system uses 17% of the total energy supply in the US. By food system sector, energy use is as follows:

- Production, 17.6%
- Processing, 29.1%
- Transportation, 7.9%
- Sales (wholesale and retail), 2.6%
- Restaurants, 17%
- Home Preparation, 25.9%

A 2001 study done by the Leopold Center (IA) (Pirog, R.), states that the conventional food system uses four to 17 times more fuel than Iowa-based regional and local systems, depending on the system and truck type. The same conventional system releases five to 17 times more CO_2 from the burning of this fuel than the regional/local food system.

FARMS TO FOOD FACTS

- Farming uses 12% of total US petroleum supply, more than any other single industry.
- More energy is now used to produce synthetic fertilizers than to till, cultivate, and harvest all US crops.
- It takes 78 calories of fossil fuel to get one calorie of protein from beef; it takes two calories of fossil fuel to get one calorie of protein from soybeans.
- The average American mouthful travels 1,300 miles from field to plate, mostly by truck. The average semi-tractor trailer gets 5.6 mpg.
- It takes 430 gallons of water, .44 gallons of gasoline, and 6.9 pounds of feed grain to produce one pound of factory pork. *(Source: YES Magazine, Summer 2000)*

Figure 40. ENERGY COST ON NE FARMS, 1987–1997

PETROLEUM COSTS (Gasoline, Diesel, etc.)	1997	1992	1987
ME	$14,829,000	$15,276,000	$12,827,000
NH	$5,148,000	$4,171,000	$3,979,000
VT	$13,005,000	$12,369,000	$10,935,000
MA	$14,893,000	$12,906,000	$12,042,000
RI	$1,642,000	$1,487,000	$1,390,000
CT	$10,638,000	$9,985,000	$9,300,000
NY	$97,075,000	$100,002,000	$91,096,000
NJ	$25,935,000	$22,184,000	$19,961,000
PA	$112,649,000	$107,247,000	$98,275,000
DE	$12,659,000	$10,367,000	$8,787,000
MD	$33,726,000	$33,728,000	$30,365,000
WV	$16,457,000	$16,045,000	$16,325,000
TOTAL	$358,656,000	$345,767,000	$315,287,000

ELECTRICITY COSTS	1997	1992	1987
ME	$10,613,000	$8,763,000	$7,596,000
NH	$3,772,000	$3,249,000	$3,141,000
VT	$11,665,000	$11,755,000	$10,851,000
MA	$7,715,000	$7,221,000	$5,959,000
RI	$743,000	$733,000	$549,000
CT	$7,932,000	$7,354,000	$6,516,000
NY	$71,134,000	$71,925,000	$65,189,000
NJ	$11,500,000	$10,184,000	$8,921,000
PA	$78,885,000	$82,113,000	$72,342,000
DE	$7,080,000	$6,082,000	$4,862,000
MD	$17,729,000	$18,192,000	$16,592,000
WV	$5,346,000	$4,872,000	$4,179,000
TOTAL	$234,114,000	$232,443,000	$206,697,000

Petroleum expenses made up 2.5% of total NE agricultural expenses in 1997, down from 2.9% in 1987.

Electricity expenses made up 1.6% of total NE agricultural expenses in 1997, down from 1.9% in 1987.

Source: US Agriculture Census 1997 and 1964

Water Use

Natural rainfall in the NE meets much of the water needs in agricultural production. However, some crops rely on irrigation. Whereas tax-supported water projects subsidize irrigation in other farming regions, costs for irrigation of an acre of cropland in the NE are more than *50 times* those of farms in regions that rely on subsidized water.

Water is becoming the single most important resource management issue for much of the US. According to one analysis[1], water availability will be a serious constraint to achieving the food requirements projected for 2025.The need for irrigation water is likely to be greater than currently anticipated, and the available supply of it less than anticipated. Groundwater overdrafting, salinization of soils, and reallocation of water from agriculture to cities and aquatic ecosystems will combine to limit irrigated crop production in many important food-producing areas.

None of the NE states are in the top 20 of consumption of water in 1990. The NE from 1982 to 1992 used 15% of the total water used for irrigation in the US (from data that does not include West Virginia). While the NE will never be able to mitigate the water crises in other regions, abundant water may be one of the Northeast's greatest agricultural production assets in the future.

[1] *Postel, S.* Water for Food Production: Will there be enough in 2025? *BioScience 48:629-637, August 1998.*

Figure 41. IRRIGATED LAND BY STATE, 1959–1997

acres

	1959	1974	1982	1992	1997
Maine	2,000	6,000	6,000	10,000	22,000
New Hampshire	1,000	2,000	1,000	2,000	3,000
Vermont	2,000	1,000	1,000	2,000	3,000
Massachusetts	20,000	19,000	17,000	20,000	25,000
Rhode Island		2,000	2,000	3,000	3,000
Connecticut	5,000	7,000	7,000	6,000	7,000
New York	58,000	55,000	52,000	47,000	69,000
New Jersey	74,000	89,000	83,000	80,000	93,000
Pennsylvania	17,000	18,000	18,000	23,000	36,000
Delaware	16,000	20,000	44,000	62,000	73,000
Maryland	11,000	23,000	39,000	57,000	69,000
West Virginia	1,000	2,000	1,000	3,000	3,000
California	7,396,000	7,749,000	8,461,000	7,751,000	8,713,000

Source: USDA-NASS 2001

Organic Agriculture

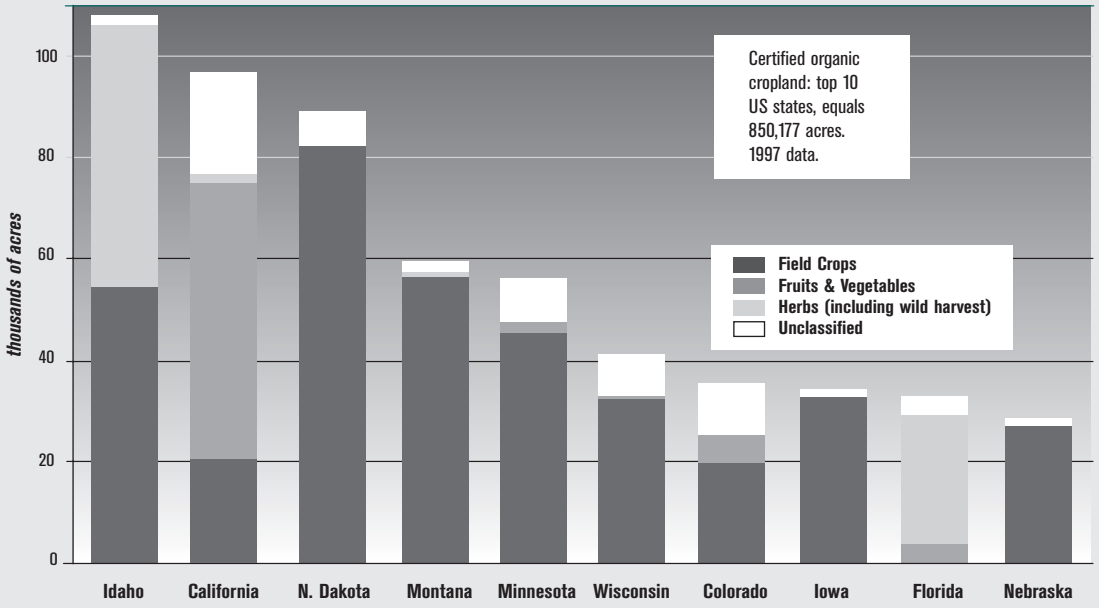
The number of organic farms in the US has increased dramatically in the past decade. One of the main reasons for this growth is the exploding market for organic products. While organic food production responds in part to consumer demand, organic agriculture is first of all a production methodology — a specific way of managing the resource base and inputs.

Certified organic cropland doubled in the 1990s. In 1997 there were 1,346,558 acres of certified cropland in the US, most of which were located in Idaho, California, North Dakota, Montana, and Minnesota. California grew over 50% of the organic vegetables in 1997, and certified cropland there increased 30% from 1997 to 1999. The International Trade Center estimates that retail sales of organic foods and beverages in major world markets reached $11 billion in 1997.

In the NE, there were 1,427 certified organic farms in 2000.

Sources: Richman, N.J. 2000. The Growing Natural Foods Market: Opportunities and Obstacles for Mass Market Supermarkets. *The Retail Food Industry Center. University of Minnesota Organic Farming Research Foundation. 2000. Greene,C. 2000.* US Organic Agriculture Gaining Ground. *Agriculture Outlook. USDA*

Figure 42. TOP STATES, ORGANIC FARM ACREAGE, 1997
Much of the certified organic acreage in the US is in the West



Source: Economic Research Service USDA

Figure 43. CERTIFIED ORGANIC FARMS IN THE NE, 2000

	# acres	# farms
Maine	6,761	250
New Hampshire	265	56
Vermont	4,146	250
Massachusetts	1,134	80
Rhode Island	132	34
Connecticut	319	52
New York	25,718	279
New Jersey	1,334	61
Pennsylvania	6,511	277
Delaware	165	0
Maryland	1,645	71
West Virginia	733	17

Source: Organic Farming Research Foundation. 2001.

SECTION FIVE
Northeast Farm Economics

The US food and fiber system (production and its related industries) accounted for $997.7 billion (13.1%) of the gross domestic product (GDP) and employed almost 23 million people (17% of the US labor force). Although farming accounts for less than 1% of the GDP (and employs about 1% of the workforce), its effect on the national economy is much larger because of its links to a wide variety of industries. Farmers require machinery, fertilizer, seed, feed, labor, financial services, and other inputs to produce products. Then farmers sell their products to the sectors that store, process, transport, manufacture, distribute, export, and retail them. Combined, these sectors accounted for another 12.2% of the GDP in 1996.

Figure 44. US FARM INCOME, 1989–1998

billions of dollars

	Gross Farm Income	Production Expenses	Net Farm Income
1989	191.9	146.7	45.3
1990	198.0	153.3	44.7
1992	200.5	152.6	47.9
1994	216.1	166.8	49.2
1996	235.7	180.8	54.9
1998	233.1	189.0	44.1

Source: ERS, Farm Structure and Performance Branch; NASS, Environmental, Economics and Demographics Branch in Agricultural Statistics 2000.

Many features of farm economics work to the disadvantage of NE farmers. Costs of production such as land, taxes, transportation, inputs like livestock feed, and equipment repair are higher in this region than in others. But the most serious undermining of farm viability is our implicit national "cheap food" policy.

So, while farmers play a vital role in the nation's economy, the majority of farmers do not fare well in that economy. Figure 44 illustrates the major problem for many US farmers. While gross farm income has increased from 1989 to 1998 by 22%, production expenses have increased 29% during the same period. This is one of the factors leading to stagnant, if not declining, net farm income.

Source: Lipton, K., Edmonson, W., and Alden Manchester. 1998. The Food and Fiber System. *USDA, ERS.*

FARMS TO FOOD FACTS

- Dairy farmers are paid about $10.50 for a hundredweight of milk. That's about 84¢ per gallon. This is the same price they received 20 years ago. This is the price received before costs, not net or profit. To cover costs and keep up with the relative increase in the price of milk and the costs of producing milk, farmers would have to be paid $31.40 and not $10.50 per hundredweight. *(Source: PA Food, Farm and Consumer Forum. Vol 17. July 2000)*
- A typical US poultry farmer, who produces 240,000 birds annually in a "factory system" under contract to one of the major poultry companies, nets only $12,000 per year or 5¢ per bird. *(Source: The Ecologist, June 2000)*

Farm Sales by Class

We know that 94% US and NE farms are categorized as small, according to the USDA farm typology which sets a gross annual sales limit of $250,000. This may not sound small; however, the average farm with annual gross sales between $50,000 and $250,000 has a net cash income of only $23,159 (as compared to average net income from large farms which is $152,724). Remember that over 80% of a farmer's gross sales is absorbed by farming expenses.

Nationally, this 94% of farms receive 41% of all agricultural receipts. Eight percent of US commercial farms account for 72% of total sales. Three-quarters of US farms have gross sales under $50,000; half of these rely on off-farm income. Even for farms in the $50,000-$250,000 gross sales category, where 86% of these farmers count farming as their primary occupation, the average return on equity is negative.

Source: USDA National Commission on Small Farms, A Time to Act, *1998.*

In Figure 46 we see the distribution of farms by sales category in each NE state. In all NE states, the majority of farms have annual gross sales under $100,000. We see that changes in the region's farms according to sales have been uneven. For example, while Pennsylvania's farms grossing over $100,000 grew by 28% between 1987 and 1997, the same sales class declined in Maine by 15%, and New York by 6%.

Figure 45. FARM ACREAGE IN US, BY REGION, BY SALES CLASS, 2000

acres

The table below shows the regional differences in economic sales class categories in terms of acreage. These data also illustrate the large proportion of Northeastern acreage that is in the $1,000-$9,999 sales class relative to other regions in the US.

	ECONOMICS SALES CLASSES (Gross Annual Sales)			
NE	**$1,000-$9,999**	**$10,000-$99,999**	**$100,000 & Over**	**TOTAL**
1997	5,475,000	6,100,000	8,800,000	20,375,000
1998	5,480,000	6,005,000	8,885,000	20,370,000
1999	5,580,000	5,800,000	8,890,000	20,360,000
NC				
1997	34,500,000	109,900,000	210,600,000	355,000,000
1998	33,800,000	108,400,000	212,300,000	354,500,000
1999	33,800,000	108,500,000	211,700,000	354,000,000
SOUTH				
1997	64,900,000	93,985,000	128,500,000	287,385,000
1998	64,653,000	93,552,000	128,475,000	286,680,000
1999	64,653,000	96,007,000	123,480,000	284,030,000
WEST				
1997	30,500,000	78,500,000	184,250,000	293,250,000
1998	29,855,000	79,060,000	183,035,000	291,950,000
1999	29,205,000	77,885,000	181,860,000	288,950,000
US				
1997	135,375,000	288,485,000	532,150,000	956,010,000
1998	133,788,000	287,017,000	532,695,000	953,500,000
1999	133,128,000	288,192,000	526,020,000	947,340,000

The regional boundaries for this chart do not conform to the definition of the NE used in this publication. Here are the region's according to agricultural statistics used to produce this chart:
NE: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont; **NC:** Illinois, Indiana, Iowa, Kansas, Michigan, Minnisota, Missouri, Nebraska, North Dakota, South Dakota, Wisconsin; **SOUTH:** Alabama, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia; **WEST:** Arkansaw, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

Source: Agricultural Statistics 2000

Figure 46. NE FARMS, BY SALES CLASS, 1987 & 1997

number of farms

	MAINE		VERMONT		NEW HAMPSHIRE		MASSACHUSSETTS	
	1997	1987	1997	1987	1997	1987	1997	1987
Less than $2,500	1,923	2,059	1,504	1,523	1,121	1020	1,616	2,167
$2,500-$4,999	743	870	655	589	460	371	664	830
$5,000-$9,999	751	719	704	480	388	320	707	720
$10,000-$24,999	798	700	719	453	363	234	753	770
$25,000-$49,999	438	466	344	446	187	131	507	494
$50,000-$99,999	390	553	569	992	143	175	468	515
$100,000 or more	767	902	1,333	1,394	275	264	859	720

	NEW YORK		NEW JERSEY		PENNSYLVANIA		DELAWARE	
	1997	1987	1997	1987	1997	1987	1997	1987
Less than $2,500	7,707	9,168	3,352	3,089	10,299	12,747	375	540
$2,500-$4,999	3,424	4,061	1,105	1,281	5,036	6,517	173	270
$5,000-$9,999	3,484	3,892	1,097	1,163	5,546	6,378	195	297
$10,000-$24,999	4,269	4,426	1,195	1,201	6,384	6,720	262	280
$25,000-$49,999	2,673	3,337	689	632	3,964	4,680	200	214
$50,000-$99,999	3,335	5,560	502	578	4,630	6,893	177	257
$100,000 or more	6,865	7,299	1,161	1,088	9,598	7,614	1,078	1.108

	RHODE ISLAND		CONNECTICUT		MARYLAND		WEST VIRGINIA	
	1997	1987	1997	1987	1997	1987	1997	1987
Less than $2,500	210	290	1,165	1,166	3,097	4,165	7,819	7,977
$2,500-$4,999	91	79	555	482	1,365	1,948	3,415	3,463
$5,000-$9,999	91	82	500	445	1,551	1,881	2,863	2,547
$10,000-$24,999	109	79	511	436	1,668	2,012	1,936	1,781
$25,000-$49,999	73	41	271	275	952	1,100	675	583
$50,000-$99,999	64	55	221	247	854	1,084	431	400
$100,000 or more	97	75	464	529	2,597	2,586	633	486

Source: USDA Agriculture Census 1997

Farmers' Share of the Food Dollar

Farm production is integrally linked to both the inputs and the processing-distribution sectors of the food system. In recent decades, these sectors have taken a larger and larger chunk of the farmer's share of the food dollar. In fact, most of the income generated from agriculture does not go to the farmer, but to marketing costs associated with the food chain. For example, for every dollar spent on food in 1995, 21¢ went to the farmer, while the remaining 79¢ went to other costs in the marketing bill such as trucking, packaging, and the retail costs of selling the product. Out of this 21¢, the farmer must pay expenses like labor and equipment.

The figures below reflect the difference between the retail price and farm value. Farm value is payment at the first point of sale and may include marketing charges such as grading and packing. Farm price is not equivalent to farm profit because it reflects gross income before paying expenses.

FARMS TO FOOD FACTS

Prices Received by Farmers for Various Commodities in 2000:

Wheat Flour, 5 pounds – Retail $1.59/Farmer 26¢

Bread, 1 loaf, Retail $1.39/Farmer 5¢

Wheaties, 14.75 oz. box – Retail $3.71/Farmer 4.6¢

Milk, 1 gallon – Retail $2.89/Farmer $1.00

Beef, 1 pound sirloin steak – Retail $4.39/Farmer 68¢

Bacon, 1 pound – Retail $3.29/Farmer 40¢

Eggs, 1 dozen – Retail $1.15/Farmer 52¢

Lettuce, 1 head – Retail $1.29/Farmer 9¢

Source: USDA NASS 2000 and Safeway, Va.

Figure 47. FARM SHARE OF CONSUMERS' FOOD PRODUCT PURCHASES, 1957–1997

In 1952, the farmer share of the consumer's food dollar was 40%, which slipped to 33% in 1962 and in 1997 was only 21%. Pricing is extremely important because farming has fixed operating costs, such as land taxes, gasoline, and fertilizers, so the fluctuating prices for food crops can wreak havoc on a farm business.

The figures below reflect the difference between the retail price and farm value. Farm value is payment at the first point of sale and may include marketing charges such as grading and packing. Farm price is not equivalent to farm profit because it does not include any production input or preprocessing costs.

	Consumer Expense	Marketing Bill	Farm Value	Farm Percent of Purchase
1957	$58.3 billion	$37.9 billion	$20.4 billion	35%
1967	$91.6 billion	$62.4 billion	$29.2 billion	32%
1977	$190.9 billion	$132.7 billion	$58.2 billion	30%
1987	$375.6 billion	$285.1 billion	$90.4 billion	24%
1997	$561.1 billion	$441.1 billion	$120 billion	21%

Source: USDA: ERS: Food Cost Review

In Figure 48 on the next page, relative prices received by farmers between 1990 and 1998 are shown. The data in Figure 49 describes prices paid by farmers during that same time period. Overall, the trends suggest that while prices received by farmers are declining, prices paid by farmers are increasing, with obvious serious implications for farm viability.

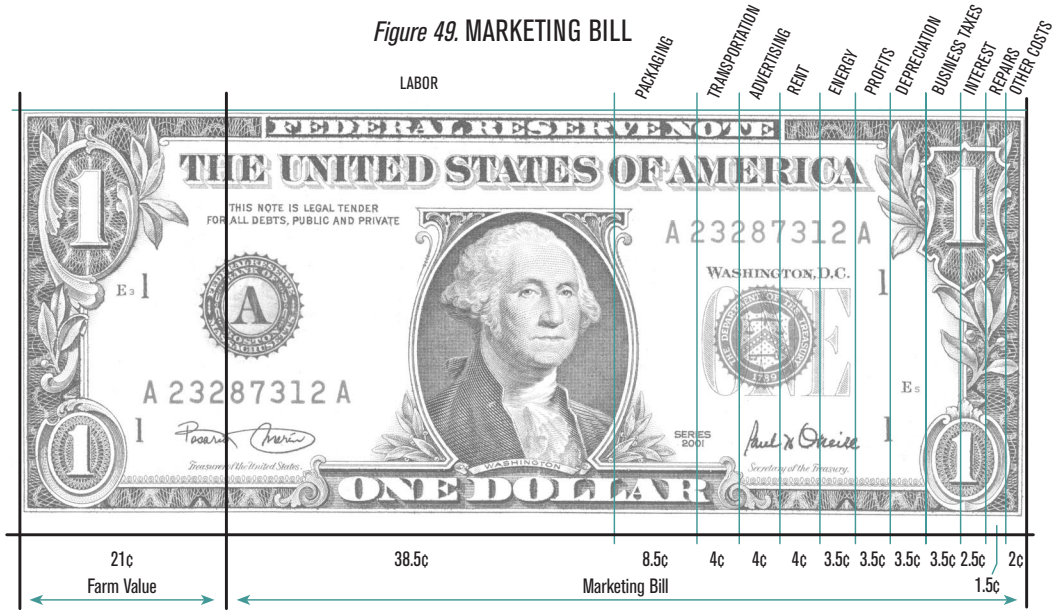
Figure 48. INDEX OF COMMODITY PRICES RECEIVED AND EXPENSES PAID BY US FARMERS, 1990–1998

These indexes are computed using the price estimates of averages for all classes and grades for individual commodities being sold in local farm markets. In computing the group indexes, prices of individual commodities have been compared with 1990-1992 weighted average prices. The resulting ratios are seasonally weighted by average quantities sold for the most recent previous five-year period. For example, 1994 indexes use quantities sold for the period 1988-1992.

(1990-92=100)	Food Grains	Feed Grains/ Hay	Fruit/ Nuts	Vegetables	Dairy Products	Poultry/ Eggs	Livestock	All Farm Products
1990	100	105	97	102	105	105	105	104
1992	113	98	99	111	100	97	97	97
1994	119	106	90	109	99	106	95	94
1996	157	146	118	111	114	120	99	98
1998	103	100	110	119	119	117	97	88
(1990-92=100)	**Production**	**Feed**	**Seed**	**Fertilizer**	**Chemicals**	**Fuels**	**Repairs**	**Total**
1990	99	103	102	97	95	100	96	99
1992	101	99	99	100	103	96	104	101
1994	106	106	108	105	112	89	109	106
1996	115	129	115	125	119	102	115	115
1998	115	110	122	112	122	88	119	116

Source: Agricultural Statistics 2000: NASS Environmental Economics and Demographics Branch

Figure 49. MARKETING BILL



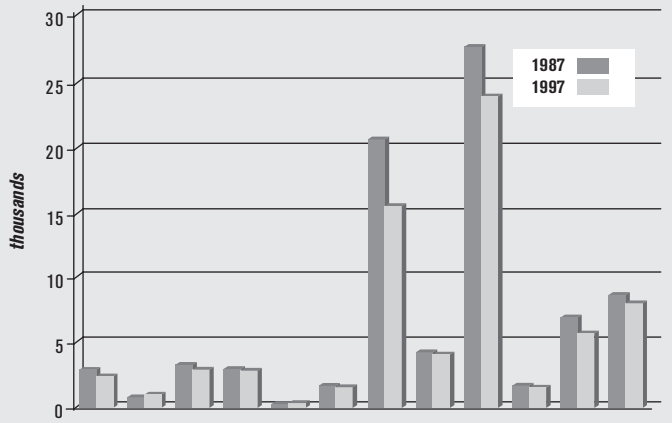
Net Cash Returns in the US and NE

Figure 50. INDEX OF COMMODITY PRICES RECEIVED AND PAID BY US FARMERS, 1990–1998

	Net Farm Income		Value of Production ($ per Acre)		Net Farm Income per Acre ($ per Acre)		Net Farm Income per Operation ($ per Operation)	
1	California	$4,986,433	**Connecticut**	$1,462	**Connecticut**	$376	Arizona	$91,907
2	Texas	$4,649,677	**Delaware**	$1,447	Florida	$271	Florida	$62,563
3	Florida	$2,815,328	**New Jersey**	$1,026	North Carolina	$211	California	$56,027
4	Georgia	$2,099,384	California	$959	**Delaware**	$208	**Delaware**	$46,415
5	North Carolina	$1,966,190	**Rhode Island**	$938	**Rhode Island**	$196	Georgia	$41,988
6	Arkansas	$1,830,918	North Carolina	$937	Georgia	$187	New Mexico	$41,280
7	Nebraska	$1,650,646	**Maryland**	$834	California	$179	Arkansas	$37,751
8	Kansas	$1,547,850	**Massachusetts**	$810	**Maryland**	$161	South Dakota	$36,614
9	Iowa	$1,450,176	Florida	$701	Alabama	$158	Idaho	$35,664
10	Alabama	$1,449,606	**Pennsylvania**	$582	**New Jersey**	$153	**Connecticut**	$34,823

Source: USDA,ERS. Agricultural Income and Financial Situation and Outlook. 2000

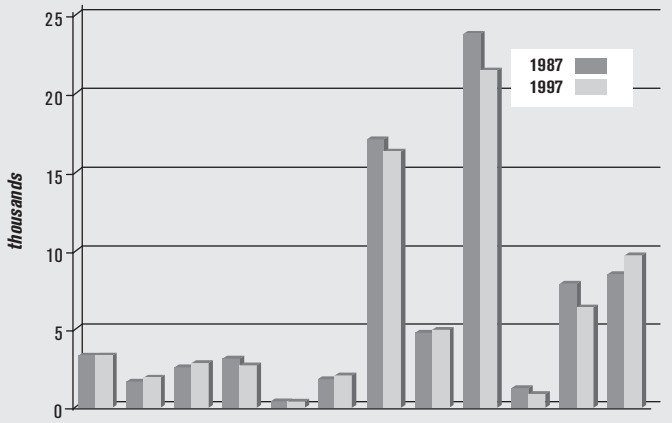
Figure 51. NE FARMS WITH NET GAINS, 1987 & 1997



	ME	NH	VT	MA	RI	CT	NY	NJ	PA	DE	MD	WV
1987	2,912	830	3,313	3,017	285	1,708	20,624	4,266	27,737	1,695	6,913	8,705
1997	2,469	983	2,968	2,861	353	1,632	15,498	4,099	23,922	1,524	5,711	8,070

Source: USDA Agriculture Census 1997

Figure 52. NE FARMS WITH NET LOSSES, 1987 & 1997



	ME	NH	VT	MA	RI	CT	NY	NJ	PA	DE	MD	WV
1987	3,354	1,682	2,568	3,199	417	1,872	17,116	4,768	23,812	1,270	7,861	8,532
1997	3,332	1,938	2,838	2,710	382	2,052	16,312	4,995	21,515	934	6,398	9,737

Source: USDA Agriculture Census 1997

Exports

US agricultural exports totaled $49 billion in FY 1999. FY 2000 data indicates that exports increased an additional $1 billion in one year. Yet, exports between 1995 and 1999 *decreased by nearly 10%.* Increased trade liberalization through free trade agreements such as NAFTA and GATT, increased production and transportation technology and, in some cases, increased foreign demand, had led US agriculture to greater dependency on export markets than ever before. Yet foreign export has not turned out to be the savior predicted by many. While the US continues to rely on agricultural exports to balance overall trade, NE's smaller and more diverse farms do not by and large benefit from export markets. Many caution that an internationally-oriented food system exposes US farmers to higher risk, increases pollution, and favors large operations and transnational corporations at the expense of family-sized farms and regional agriculture.

FARMS TO FOOD FACTS

- Pennsylvania led the NE in agricultural exports with $592 million in 1999, followed by New York and Maryland.
- Poultry and products were the top exported commodity in the NE, totalling $207.7 million in 1999.
- Connecticut had the largest five-year gain in exports from $46 million in 1995 to $93.3 in 1999, primarily due to a temporary boom in tobacco products.
- The NE had only 3.3% of the US total agricultural exports in 1999.

Source: USDA Economic Research Service, Document 16010 — US Agricultural exports: Estimated value, by commodity group and state, *FY 1995-99*

Figure 53. US AGRICULTURAL EXPORTS, BY COMMODITY GROUPS

millions of $

	Wheat and Products	Feed Grains and Products	Soybeans and Products	Tobacco Unmfd.	**Fruits and Preps	Vegetables and Preps.	Live Animals and Meat (Not Poultry)	Hides and Skins	Poultry and Products	Dairy Products	*Other	TOTAL
Connecticut (1999)	$0.0	$0.0	$0.0	$84.4	$0.1	$0.0	$0.0	$0.0	$2.2	$3.5	$3.0	**$93.3**
Delaware (1999)	$9.2	$0.0	$17.0	$0.0	$0.0	$19.0	$0.0	$0.0	$61.5	$0.0	$0.6	**$107.2**
Maine (1999)	$0.0	$0.0	$0.0	$0.0	$2.4	$35.5	$0.0	$0.0	$3.6	$0.0	$0.5	**$41.9**
Maryland (1999)	$26.6	$30.0	$34.0	$8.7	$0.0	$17.3	$0.0	$0.0	$58.8	$7.3	$14.7	**$199.7**
Massachusetts (1999)	$0.0	$0.0	$0.0	$20.1	$7.2	$0.5	$0.0	$0.0	$0.0	$13.5	$2.4	**$44.1**
New Hampshire (1999)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$1.0	**$1.0**
New Jersey (1999)	$5.6	$0.0	$7.5	$0.0	$16.5	$19.5	$2.2	$0.6	$0.0	$6.1	$90.6	**$152.6**
New York (1999)	$12.5	$44.1	$0.0	$0.0	$59.1	$82.9	$24.2	$3.2	$9.7	$48.1	$59.5	**$368.0**
Pennsylvania (1999)	$25.7	$76.7	$37.7	$17.4	$24.1	$14.3	$153.3	$30.3	$56.5	$50.8	$55.8	**$592.8**
Rhode Island (1999)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.6	**$0.6**
Vermont (1999)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$10.0	$0.3	**$10.3**
West Virginia (1999)	$1.1	$0.0	$0.0	$1.6	$1.2	$0.0	$0.0	$0.0	$15.4	$0.0	$0.3	**$19.7**
United States (1995)	$5,264.1	$8,842.9	$7,194.0	$1,329.1	$3,255.6	$3,875.8	$5,135.6	$1,738.4	$2,216.0	$806.4	$5,374.1	$54,725.1
(1999)	$3,930.7	$6,805.6	$6,530.3	$1,375.5	$3,282.0	$4,245.2	$5,334.5	$1,108.5	$2,056.1	$897.5	$6,474.7	$49,102.1

Totals may not add due to rounding.
*Mainly confectionery, nursery and greenhouse, essential oils, beverages; excluding juice and other miscellaneous animal and vegetable products.
**For 1999, apples and apple juice assumed to equal 1998, since 1999 production data had not yet been released.

Government Payments

Government payments are for a range of programs mainly aimed at maintaining the food supply and promotion of safety practices and — to a lesser extent — stabilizing farm income. Most federal payment programs address production subsidies, price shortfalls, and disaster relief. Some programs limit production, including rental payments for land set aside for conservation, such as the Conservation Reserve Program (CRP). Federal farm policy, as reflected in the 1997 Farm Bill, removed many of the traditional "safety net" programs for farmers. At the same time, commodity surpluses, increased foreign production, and weak export markets drove prices down.

FARMS TO FOOD FACTS

- NE farms received only 3.9% of all federal agriculture program payments.
- One percent of all USDA conservation payments are made to NE farms; CRP payments accounted for $14 million in the NE, distributed among 5,420 farms.
- Slightly more than $95 million in government payments was distributed in the NE region in 1997. Only 56 NE farms received more than $50,000.
- In the NE, $45.656 million in loans were made in 1997. New York and Pennsylvania received the greatest number and dollar value ($33 million among 1,200 farms) in loans for commodity production, mostly for corn and soybeans.
- In 1999, 41.6% of US farms received government payments, up 5% in one year. Gross cash income for these farms averaged $125,937, of which 13.3% was government payments, averaging $16,751.
- The largest government payments went to very large family farms. They represent 8% of gross cash income, but received 69% of payments.

  Source: UbnSDA Agriculture Census
- Net farm income was $45.6 billion in 2000, up $2.2 billion from 1999, and $400 million above the 1990-1999 average of $45.2 billion. The increase is primarily due to government assistance that will surpass the 1999 payments by $2.7 billion.

  Source: USDA, ERS. Agricultural Income and Financial Situation and Outlook. 2000)

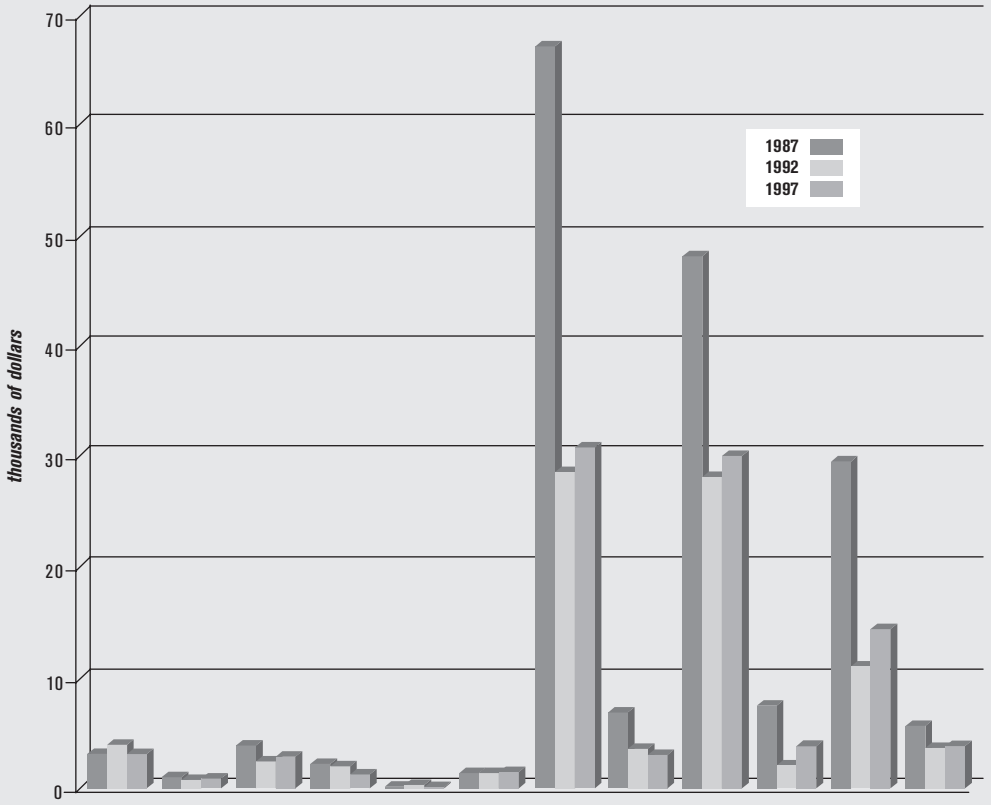
Figure 54. DISTRIBUTION OF GOVERNMENT PAYMENTS AMONG FARMS, 1999

	% of Payments	% of All Farms
All Farms	**100**	**100**
Economic Class		
$500,000 or more	24	3
$250,000-$499,999	21	4
$100,000-$249,000	29	9
$50,000-$99,999	12	8
$10,000-$49,999	11	21
Less than $10,000	3	56
Farm Acres Operated		
2,000 acres or more	25	3
1,000 to 1,999 acres	26	5
250 to 999 acres	37	20
100 to 249 acres	9	24
Less than 100 acres	2	48
Farm Type		
Cash grain and oilseed	55	15
Cotton	7	1
Other crop	17	27
Beef	11	37
Dairy	6	4
Other Livestock	5	16
ERS Resource Regions		
Heartland	38	21
Northern Crescent*	9	14
Northern Great Plains	11	4
Prairie Gateway	19	14
Eastern Uplands*	2	16
Southern Seaboard	5	11
Other	17	20
Farm Typology		
Limited-Resource	1	6
Retirement	3	14
Residential/lifestyle	9	43
Farming Occupation/low sales	15	22
Farming Occupation/high sales	25	8
Large	21	4
Very Large	22	3
Nonfamily	4	2

*USDA Resource Regions that include NE states

Source: USDA, ERS. Agricultural Income and Financial Situation and Outlook. 2000

Figure 55. GOVERNMENT PAYMENTS TO NE FARMS, 1987–1997



	ME	NH	VT	MA	RI	CT	NY	NJ	PA	DE	MD	WV
1987	3,062	951	3,882	2,213	39	1,277	66,924	6,777	47,982	7,414	29,512	5,597
1992	3,843	738	2,381	1,886	197	1,294	28,672	3,560	28,134	1,962	10,960	3,654
1997	2,977	809	2,916	1,209	122	1,433	30,750	2,942	29,978	3,770	14,330	3,892

Chapter Two: PROCESSING AND DISTRIBUTION

SECTION ONE
Overview

It is not possible to determine where much of our region's food comes from and goes to — one of the frustrations in researching this report. We do know that more of it comes from further and further away, subsidized by cheap transportation, labor, water, and often with environmental costs. As global trade expands, importation of fresh produce and other food products has increased, while export markets have not fulfilled their promise for the vast majority of NE producers. There is some information that helps us understand the path that agricultural products may take once they leave the farm. Data from two NE terminal markets provides some insight into where the NE gets its fresh produce.

Major Trends

We know that there are fewer farmers than there were 20 years ago. What is also true is that there are far fewer businesses in control of farm inputs, processing, distribution, and marketing of farm products. In 1999 Dr. William Heffernan of the University of Missouri released a study that described how hundreds of previously independent food companies had been consolidated into a few "food clusters." With producers on one end, and millions of consumers at the other, these companies are controlling the flow of products between them.

Consolidation ("horizontal" merging of similar companies under one ownership) and vertical integration (control of multiple steps in production, processing, and distribution) are major recent trends in the food system. These trends are more dramatic in regions where commodity crops (e.g. beans and grains) and livestock dominate. However, some NE states are experiencing these influences: Maryland and Delaware in the poultry industry, Pennsylvania in hogs, and New York, Pennsylvania, and New England in dairy.

According to Heffernan, three clusters of companies — or "food chains" — control food production from inputs (e.g., pesticides and seeds) through processing to the grocery shelf. These clusters are: Cargill-Monsanto, ConAgra, and Novartis-ADM.

Processing and distribution activities begin once the product is harvested. In its simplest form, a farmer *processes* the products (e.g., washing, cooling, trimming, and sorting) and *distributes* them directly to customers (e.g., at a roadside stand or farmers market). While direct marketing is on the rise, especially in the NE, the overall trend in distribution is toward more intermediary steps and more players vying for the food dollar.

Sometimes produce goes to larger storage facilities or to packing houses which also may collect and distribute produce from other regions and countries to supply NE markets year-round, at prices that undercut our own regional growers. As one supermarket buyer stated, "local" meant anything he could get within 24 hours. Nutritional value, taste, and quality are often sacrificed as foods are grown more for travel-ability than taste or nutritional content.

FARMS TO FOOD FACTS

- Four companies control 89% of the cereal market. *(A.V. Krebs, 1999)*
- Four meatpacking companies control an estimated 79% of cattle slaughter. *(Heffernan, 1999)*
- Four companies control 49% of the broiler industry. *(Heffernan, 1999)*
- An estimated 10¢ of every food dollar goes to Phillip Morris. *(Just Food)*
- Two companies control 50% of grain exports. *(Just Food)*
- Thirty-five percent of the fluid milk market is controlled by four companies. *(Hendrickson et al, 2001)*
- New York State orchards produce nine times the number of apples consumed in New York City, yet they supply a mere 3.4% of the apples eaten in New York City. (*Source: Just Food, N.Y.)*

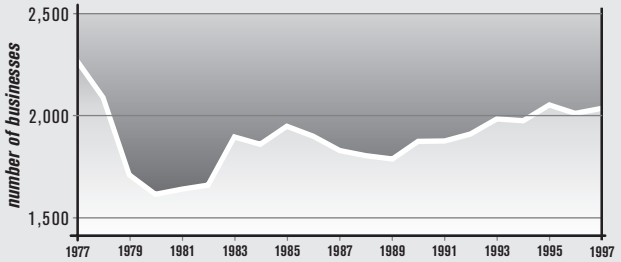
SECTION TWO
Processing

With the exception of fresh fruits and vegetables, agricultural products need some sort of processing: grapes into wine, apples into sauce, hogs into hams, raw milk into cheeses, fresh carrots into frozen carrots, tomatoes into sauce, grains into feed. Many foods undergo far more processing than that: ready-to-eat meals and elaborately packaged convenience foods, for example.

In the NE, there are processing facilities of all sorts and all sizes. The largest companies include Ocean Spray, Welch's, and Smuckers. There are also large processing firms in the extract and flavoring sector that line New Jersey's manufacturing corridor.

At the other end are small-scale and micro-processing companies that produce specialty value-added foods such as jams, vinegars, specialty meats, soy products (e.g., tofu and miso), dried herbs, and medicinals, etc.

Figure 1. NUMBER OF NE SMALL-SCALE PROCESSORS (1-9 EMPLOYEES), 1977–1997



Source: County Business Patterns; prepared by Community Food and Agriculture Program (formerly Farming Alternatives Program), Cornell University, N.Y.

Figure 2. PROCESSING OF POULTRY IN THE NE

POULTRY PROCESSING

	Establishments	Sales	Payroll	Employees
Maryland	9	$503,948,000	$54,886,000	3,323
Massachusetts	5	$86,412,000	$10,222,000	439
New Jersey	11	$152,013,000	$23,255,000	1,255
New York	14	$63,018,000	$6,335,000	323
Pennsylvania	19	$768,711,000	$98,248,000	4,632
West Virginia	3	$374,474,000	$51,667,000	2,706
REGION	**61**	**$1,948,576,000**	**$244,613,000**	**12,678**

YOUNG CHICKENS *(usually under 20 weeks)*	1997 Value of Product Shipments
Delaware	$769,122,000
Maryland	$425,918,000
New Jersey	$50,855,000
Pennsylvania	$299,904,000
Georgia	$2,737,838,000
US	$16,526,845,000

TURKEY *(including frozen)*	1997 Value of Product Shipments
New Jersey	$14,454,000
Pennsylvania	$149,107,000
North Carolina	$624,440,000
US	$3,802,062,000

PROCESSED POULTRY & SMALL GAME (except soups) containing 20% or more poultry meat	1997 Value of Product Shipments
Connecticut	$274,776,000
Massachusetts	$63,146,000
New Jersey	$95,905,000
Pennsylvania	$301,758,000
Arkansas	$1,679,706,000
US	$9,200,202,000

Source: 1997 Economic Census: Manufacturing Industry Series

The data shown in Figure 1 should be used only as an indicator of trends in small-scale processing, since (if it isn't already obvious), most processors at the "microenterprise" level don't even support an owner, let alone an employee, and therefore are not included in Department of Commerce survey estimates. So, a lot of businesses are missing in this data. Still, it is the best publicly available information we have.

According to the results of one 1995 survey by Cornell University, in New York state there are as many as *3,000-5,000* food microenterprises — home- and farm-based businesses. Many of these are very small, not supporting even one employee, thus falling under the radar screen of the US Department of Commerce survey estimates. Yet they are a vital thread in the fabric of our region's food system and particularly important for rekindling interest in local and "artisinal" foods.

Figure 3. MEAT PROCESSING IN THE NE

MEAT PROCESSED FROM CARCASSES

	Establishments	Sales	Payroll	Employees
Connecticut	21	$164,083,000	$21,836,000	746
Maryland	13	$130,118,000	$15,438,000	778
Massachusetts	26	$314,713,000	$31,061,000	1,192
New Jersey	49	$435,723,000	$67,485,000	1,815
New York	96	$1,209,648,000	$75,322,000	2,419
Pennsylvania	74	$1,490,660,000	$149,440,000	5,169
Rhode Island	9	$41,543,000	$365,760,000	12,286
REGION	**288**	**$3,786,488,000**	**$726,342,000**	**24,405**

ANIMAL SLAUGHTERING
(except poultry)

	Establishments	Sales	Payroll	Employees
New York	37	$101,281,000	$8,513,000	410
Pennsylvania	56	$1,750,503,000	$148,478,000	4,923
Texas	102	$6,046,518,000	$298,860,000	4,923
UNITED STATES	**1,393**	**$54,501,553,000**	**$3,245,844,000**	**142,374**

FRESH & FROZEN BEEF made from animals slaughtered in this place
(not canned or made into sausage)

	1997 Value of Product Shipments
New Jersey	$5,533,000
New York	$12,501,000
Pennsylvania	$1,098,822,000
Kansas	$5,864,883,000
UNITED STATES	**$28,209,408,000**

Source: 1997 Economic Census: Manufacturing Industry Series

Figure 4. MILK PRODUCTS IN THE NE

CHEESE MANUFACTURING

	Establishments	Sales	Payroll	Employees
New Jersey	15	$222,790,000	$14,982,000	595
New York	36	$1,331,619,000	$62,177,000	2,387
Pennsylvania	26	$966,208,000	$68,706,000	1,995
Vermont	13	$2,798,614,000	$17,180,000	639

ICE CREAM & FROZEN DESSERT MANUFACTURING

	Establishments	Sales	Payroll	Employees
Connecticut	16	$116,071,000	$11,034,000	276
Maryland	9	$216,320,000	$20,183,000	692
Massachusetts	29	$457,602,000	$73,594,000	781
New Jersey	17	$209,784,000	$13,901,000	360
New York	39	$198,286,000	$25,300,000	773
Pennsylvania	40	$394,872,000	$38,400,000	843
California	65	$716,196,000	$79,857,000	1,632
UNITED STATES	**451**	**$5,863,483,000**	**$608,217,000**	**14,242**

FLUID MILK MANUFACTURING

	Establishments	Sales	Payroll	Employees
Connecticut	7	$168,084,000	$19,348,000	510
Maine	7	$130,211,000	$13,848,000	420
New Jersey	10	$716,534,000	$78,928,000	1,930
Pennsylvania	50	$1,194,937,000	$132,327,000	3,858
California	60	$3,044,138,000	$229,532,000	5,844
UNITED STATES	**612**	**$22,212,148,000**	**$1,921,494,000**	**58,217**

BULK FLUID MILK & CREAM

	1997 Value of Product Shipments		1997 Value of Product Shipments
Connecticut	$104,516,000	New Jersey	$556,621,000
Maine	$108,941,000	New York	$675,430,000
Maryland	$244,402,000	Pennsylvania	$647,330,000
Massachusetts	$493,085,000		
		UNITED STATES	**$12,553,702,000**

Source: 1997 Economic Census: Manufacturing Industry Series

Figure 5. FRUIT AND VEGETABLE CANNING IN THE NE

FRUIT & VEGETABLE CANNING

	Establishments	Sales	Payroll	Employees
New Jersey	17	$444,085,000	$48,872,000	1,391
New York	57	$1,313,693,000	$108,715,000	3,863
Pennsylvania	28	$529,670,000	$61,349,000	2,289

CATSUP & OTHER CANNED TOMATO SAUCES	1997 Value of Product Shipments
New Jersey	$201,014,000
New York	$112,673,000
Pennsylvania	$109,302,000
UNITED STATES	$4,234,497,000

CANNED JAMS, JELLIES & PRESERVES	1997 Value of Product Shipments
New York	$148,922,000
Pennsylvania	$108,886,000
UNITED STATES	$1,007,148,000

FRESH FRUIT JUICES & NECTARS	1997 Value of Product Shipments
Connecticut	$10,797,000
Florida	$432,847,000
Massachusetts	$53,099,000
New Jersey	$33,707,000
New York	$221,483,000
Pennsylvania	$33,526,000
UNITED STATES	$1,426,476,000

FROZEN FRUIT, JUICE & VEGETABLE MANUFACTURING

	Establishments	Sales	Payroll	Employees
New Jersey	4	$98,061,000	$16,318,000	569
New York	14	$273,426,000	$23,256,000	928
Pennsylvania	6	$87,020,000	$11,737,000	418
UNITED STATES	258	$9,631,300,000	$1,062,357,000	46,760

FROZEN VEGETABLES	1997 Value of Product Shipments
Delaware	$22,594,000
New York	$220,035,000
UNITED STATES	$6,355,659,000

Source: 1997 Economic Census: Manufacturing Industry Series

Figure 6. BREAD PRODUCTION IN THE NE

COMMERCIAL BAKERIES

	Establishments	Sales	Payroll	Employees
Connecticut	45	$394,562,000	$70,569,000	2,064
Maryland	54	$464,748,000	$72,776,000	2,914
Massachusetts	121	$652,957,000	$109,652,000	4,371
New Hampshire	8	$4,743,000	$1,244,000	112
New Jersey	136	$430,054,000	$92,366,000	3,314
New York	374	$1,447,753,000	$347,128,000	11,148
Pennsylvania	144	$1,292,294,000	$246,662,000	8,653
Rhode Island	25	$79,816,000	$17,514,000	737
Vermont	22	$37,644,000	$6,565,000	331
West Virginia	16	$174,056,000	$42,528,000	1,147
REGION	945	$4,978,627,000	$1,007,004,000	34,791

RETAIL BAKERIES

	Establishments	Sales	Payroll	Employees
Connecticut	134	$47,742,000	$13,752,000	959
Massachusetts	278	$80,660,000	$24,254,000	2,002
New Hampshire	36	$7,496,000	$2,004,000	178
New Jersey	466	$152,101,000	$45,806,000	3,060
New York	978	$260,096,000	$70,339,000	4,927
Pennsylvania	378	$116,212,000	$34,082,000	2,759
REGION	2,270	$664,307,000	$190,237,000	13,885

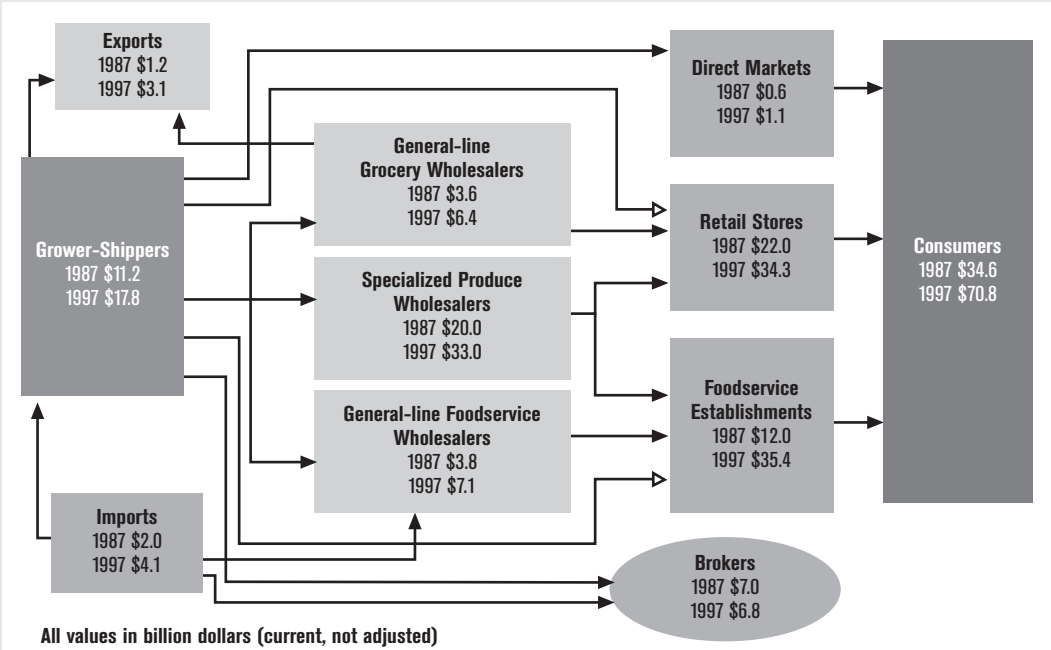
Source: 1997 Economic Census: Manufacturing Industry Series

SECTION THREE
Distribution

Figure 7 diagrams how fresh fruits and vegetables move through marketing channels. While nearly all numbers grew between 1987 and 1997, the largest increase is in food service establishments. Note too, the growth in imports, more than doubling in the 10-year interval.

Marketing cooperatives are a variation on the traditional wholesaling process. A cooperative is a member-owned business. Members pool their products which are then sold to various buyers. There are very large coops such as the Cape Cod Cranberry Growers Association that markets to Ocean Spray, and Agrimark, a dairy producers' coop that processes and distributes milk products.

Figure 7. FRESH FRUITS AND VEGETABLES, PRIMARY MARKET CHANNELS
1987 & 1997



Sources: Bureau of the Census, Census of Wholesale Trade and Census of Retail Trade; Blue Book, 1997; Edward W. McLauglin and others, FreshTrack 1999: New Dynamics of Produce Buying and Selling, *Produce Marketing Association, Newark, Delaware, 1999.*

Figure 8. NUMBER OF FRUIT AND VEGETABLE CO-OPS, 1994 & 2000
by thousands

Sales category	1994	2000
< $500	14	18
$500-$1,999	6	7
$2,000-$2,449	3	2
$2,500-$4,999	5	4
$5,000-$9,999	7	4
≥ $10,000	7	5
TOTAL	42	40

Source: 2000 Cooperative Census, USDA Rural Business Cooperative Service

The number of cooperatives in the NE has been fairly steady over the last decade, despite the substantial survival challenges that coops — especially smaller coops — face. According to a study by Cornell University and USDA, there are at least 40 fruit and vegetable growers coops in the NE. Thirty-five of those have annual sales of less than $10 million. Between 1994 and 2000, there was a *28% increase* in coops with annual sales of less than $500,000 (figure 8).

Wholesaling

Various kinds of wholesalers serve different industries. One example is a general-line grocery wholesaler who purchases all kinds of grocery items for retailers that lack transportation or storage facilities. Supervalu is the largest general-line wholesaler in the US. It sells a complete line of products to over 4,400 retail foodstores. General-line foodservice wholesalers, such as Sysco and Alliant, provide dry and perishable goods for restaurants, hospitals, schools, and hotels.

Supermarkets without their own distribution centers and small grocery stores purchase their supplies from these wholesale companies. The NE is home to some of the largest wholesale companies that serve the grocery market, such as The Great Atlantic & Pacific Tea Company, headquartered in Montvale, N.J. A&P serves over 975 stores, of which 690 are conventional supermarkets, 283 are superstores, and two are warehouse stores. The company had overall sales in 1996 that were estimated at $10 billion.

The wholesaler also supplies 49 franchised Food Basic stores in Canada, and operates three large distribution facilities. Many of these large wholesale companies have buying offices from which the majority of transactions occur, from procuring the product to arranging shipment. A&P's buying operations for the New Jersey and New York divisions also manage transactions for Food Emporium and Walbaum. In addition A&P operates under the store names of A&P, Food Bazaar, and Sav-A-Center.

Wholesalers in the fresh produce industry buy fruits and vegetables from brokers or directly from grower shippers and importers. Their primary function is to procure produce and distribute it to retail or foodservice customers. Buying produce can be challenging work. If a wholesaler buys too much of one crop or another, it could rot in the warehouse. Similarly, prices rise and fall according to changes in the weather, market conditions, and crop reports, making it "like the stock market, but with perishables."

Sources: Moore, S. Midnight in a Garden of Green. *Los Angeles Times. December 27, 2000. 2(B)*

Team Canada Market Research Center. 1999. Overview of the Retail Grocery Market in the Upper Mid-Atlantic United States. *Government of Canada.*

Figure 9. WHOLESALE TRADE IN THE NE

ALL WHOLESALE TRADERS OF GROCERY & RELATED PRODUCTS

	Firms	Sales	Payroll	Employees
Connecticut	478	$6,340,246,000	$324,934,000	9,137
Delaware	75	$689,634,000	$28,419,000	1,086
Maine	378	$1,940,926,000	$138,457,000	4,878
Maryland	672	$9,278,372,000	$521,248,000	16,200
Massachusetts	1,233	$21,314,279,000	$853,598,000	23,812
New Hampshire	169	$2,082,334,000	$112,120,000	3,155
New Jersey	2,034	$30,826,918,000	$1,265,803,000	33,758
New York	4,546	$43,105,874,000	$1,829,253,000	53,877
Pennsylvania	1,646	$26,077,870,000	$1,212,143,000	38,742
Rhode Island	190	$1,188,583,000	$77,994,000	2,730
Vermont	147	$1,782,198,000	$91,791,000	3,020
West Virginia	159	$1,139,772,000	$96,521,000	3,770
REGION	**11,727**	**$145,767,006,000**	**$6,552,281,000**	**194,165**

Source: 1997 Economic Census: NAICS #4224

Figure 10. GENERAL-LINE GROCERIES IN THE NE

GENERAL-LINE GROCERY WHOLESALERS

	Firms	Sales	Payroll	Employees
Connecticut	37	$1,305,670,000	$62,851,000	1,697
Delaware	5	$16,183,000	$1,205,000	56
Maine	18	$298,186,000	$14,913,000	535
Maryland	59	$2,557,101,000	$139,307,000	3,526
Massachusetts	131	$3,773,772,000	$158,938,000	4,278
New Hampshire	11	$302,166,000	$20,378,000	544
New Jersey	161	$5,497,370,000	$195,171,000	4,742
New York	413	$10,319,088,000	$334,820,000	9,620
Pennsylvania	162	$6,321,553,000	$297,465,000	9,286
Rhode Island	17	$61,118,000	$5,214,000	191
Vermont	15	$102,860,000	$9,173,000	285
West Virginia	159	$1,139,772,000	$96,521,000	3,770
REGION	**1,188**	**$31,694,839,000**	**$1,335,956,000**	**38,530**

Wholesale Industries

These wholesale industry figures are from the 1997 Economic Census, and reflect the entire wholesale foods business in the NE broken down into specific industries.

Figure 11. FOOD WHOLESALE INDUSTRIES IN THE NE

POULTRY & POULTRY PRODUCT WHOLESALERS

	Firms	Sales	Payroll	Employees
Connecticut	7	$82,451,000	$2,982,000	89
Delaware	7			
Maine	3			
Maryland	25	$341,139,000	$12,659,000	359
Massachusetts	27	$458,142,000	$13,012,000	294
New Hampshire	11	$292,827,000	$8,575,000	273
New Jersey	39	$318,550,000	$15,201,000	523
New York	93	$1,986,455,000	$43,256,000	1,221
Pennsylvania	62	$577,992,000	$22,270,000	921
Rhode Island	2			
Vermont	4			
West Virginia	2			
REGION	282	$4,057,556,000	$117,955,000	3,680

MEAT & MEAT PRODUCT WHOLESALERS

	Firms	Sales	Payroll	Employees
Connecticut	28	$202,763,000	$14,069,000	432
Delaware	8			
Maine	8	$142,727,000	$8,080,000	220
Maryland	42			
Massachusetts	82	$2,243,479,000	$65,923,000	2,152
New Hampshire	5			
New Jersey	222	$1,565,212,000	$84,168,000	2,211
New York	539	$3,198,165,000	$137,056,000	4,595
Pennsylvania	154	$2,505,794,000	$77,407,000	2,438
Rhode Island	19	$245,454,000	$11,060,000	377
Vermont	12			
West Virginia	7			
REGION	1,126	$10,103,594,000	$397,763,000	12,425

DAIRY PRODUCT WHOLESALERS (excluding dried and canned goods)

	Firms	Sales	Payroll	Employees
Connecticut	32	$599,305,000	$23,129,000	783
Delaware				
Maine	12	$38,990,000	$2,725,000	109
Maryland	30			
Massachusetts	50	$530,391,000	$29,176,000	813
New Hampshire	8	$35,151,000	$3,130,000	91
New Jersey	144	$1,908,403,000	$93,725,000	2,616
New York	350	$4,537,725,000	$141,384,000	4,159
Pennsylvania	122	$1,534,577,000	$67,835,000	2,090
Rhode Island	7			
Vermont	7			
West Virginia	12	$46,528,000	4,067,000	119
REGION	774	$9,231,070,000	$365,171,000	10,780

FRUIT & VEGETABLE WHOLESALERS

	Firms	Sales	Payroll	Employees
Connecticut	52	$279,403,000	$15,395,000	509
Delaware	14	$94,812,000	$4,100,000	137
Maine	34	$101,851,000	$8,993,000	411
Maryland	68	$647,213,000	$49,007,000	1,648
Mass.	178	$1,297,091,000	$91,415,000	2,341
New Hamp.	10	$24,290,000	$2,865,000	122
New Jersey	240	$1,798,753,000	$84,861,000	2,456
New York	519	$3,390,200	$187,337	5,352
Pennsylvania	257	$2,047,605,000	$131,718,000	4,392
Rhode Island	26			
Vermont	10			
West Virginia	28	$120,644,000	12,488,000	666
REGION	1,436	$9,801,862	$588,179	18,034

Source: 1997 Economic Census

NE Fresh Produce Distribution

Terminal markets are a major source of wholesale fresh fruits and vegetables for our major urban areas. The *USDA Fruit and Vegetable Market News* reports the daily prices, arrival figures, and methods of transport of fresh product shipped to these large distribution nodes. For this report, the Jessup, Md. Terminal Market and the Boston, Mass. Terminal Market were studied. Data were compiled with the cooperation of supermarket chains, wholesalers, brokers, transportation authorities and retailers. The data show that fresh produce is traveling further, and that the share of NE produce distributed through these regional markets is declining.

NORTHEAST DISTRIBUTION FACTS

Jessup, Maryland Terminal Market	*Boston, Massachusetts Terminal Market*
• The average shipping distance per pound of fresh produce increased from 1,623 miles in 1980 to 1,685 miles in 1997.	• The average shipping distance per pound of fresh produce increased from 2,002 miles in 1980 to 2,374 miles in 1995.
• The average shipping distance per pound of FRUIT increased from 1,830 miles to 2,416 miles and the average shipping distance per pound of VEGETABLES increased from 1,409 miles in 1980 to 1,596 miles in1997.	• The average shipping distance per pound of FRUIT increased from 2,336 miles to 2,568 miles and the average shipping distance per pound of VEGETABLES increased from 1,668 miles in 1980 to 2,141 miles in 1997.
• The NE share of fresh produce distributed at Jessup declined from 19.5% in 1980 to 8.3% in 1997.	• The NE share of fresh produce distributed at Boston declined from 20.2% in 1980 to 11.6% in 1995.
• The NE's largest producer of fresh produce distributed at Jessup was New York in both 1980 and 1997, but New York's share declined from 8% to 2.4%.	• The NE's largest producer of fresh produce distributed at Boston was Maine in both 1980 and 1997, but Maine's share declined from 7.5% to 4.8%.
• Foreign producers increased their share of the total fresh produce distributed from 13.5% in 1980 to 23% in 1997.	• Foreign producers increased their share of the total fresh produce distributed from 9.2% in 1980 to 22.6% in 1997.
• The NE lost significant market share at Jessup with the following key crops: Apples: NE share declined from 36.7% in 1980 to 13.2% in 1997. Peaches: NE share declined from 52% in 1980 to 7.9% in 1997. Potatoes: NE share declined from 52.7% in 1980 to 19.9% in 1997.	• The NE lost significant market share at Boston with the following key crops: Apples: NE share declined from 50.9% in 1980 to 25% in 1995. Peaches: NE share declined from 29.9% in 1980 to 17% in 1995. Sweet Corn: NE share declined from 45% in 1980 to 23% in 1995.
Source: Data from 1995 Boston Fresh Fruit and Vegetable Wholesale Market Prices & Arrivals	• The NE remained a strong supplier of potatoes, cranberries, and blueberries.

Jessup, Md. & Boston, Mass. Fruit & Vegetables, 1980 & 1997

For this assessment of the northeastern food system, an analysis of the US Department of Agriculture *Fruit and Vegetable Market News* was performed in order to determine the source of the fruits and vegetables that are consumed in our major cities. The following data indicates where two key markets in the NE get their fresh produce. Covering most major supermarket chains and wholesalers in the Baltimore/Washington and Boston areas, the USDA reports include weekly prices, arrival figures and methods of transport of all fresh produce that were shipped to the Jessup, Md. and Boston, Mass. terminal markets. The data were compiled with the cooperation of supermarket chains, wholesalers, brokers, transportation authorities, and retailers.

Figure 12. SUMMARY INFORMATION, JESSUP, MD., 1980 & 1997

NATIONAL & NE DATA, 1980	
Total Distributed Pounds	873,200,000
Total Northeast Share of Distribution	170,200,000
Northeast % of Total	19.5

BIGGEST PRODUCERS, US, 1980	Pounds	%
CA	209,500,000	24
FL	185,300,000	21
NY	71,500,000	8
MD	33,300,000	3.8

BIGGEST PRODUCERS, NE, 1980	Pounds	%
NY	71,500,000	8
MD	33,300,000	3.8
ME	26,600,000	3
NJ	12,200,000	1.3

TOTAL NON-US PRODUCERS, 1980	Pounds	%
	118,200,000	13.5
BIGGEST NON-US PRODUCERS includes "imports"	Pounds	%
Mexico	14,900,000	1.7
Canada	5,700,000	0.6
Chile	1,700,000	0.1

JESSUP, MD. DATA, 1980	
Avg. shipping dist. for all crops*	1,623.3 miles
Avg. shipping dist. for fruits	1,830.5 miles
Avg. shipping dist. for vegetables	1,409.8 miles
% fresh produce shipped by truck	81.9

**Weighted averages for the average pound of fresh produce.*

NATIONAL & NE DATA, 1997	
Total Distributed Pounds	1,314,500,000
Total Northeast Share of Distribution	109,600,000
Northeast % of Total	8.3

BIGGEST PRODUCERS, US, 1997	Pounds	%
CA	380,600,000	29
FL	191,800,000	14
WA	56,000,000	4
ID	43,200,000	3

BIGGEST PRODUCERS, NE, 1997	Pounds	%
NY	32,500,000	2.4
MD	28,300,000	2
PA	15,500,000	1.1
ME	11,500,000	.9

TOTAL NON-US PRODUCERS, 1997	Pounds	%
	303,000,000	23
BIGGEST NON-US PRODUCERS includes "imports"		
Mexico	53,800,000	4
Canada	16,800,000	1.3
Chile	15,000,000	1.1

JESSUP, MD. DATA, 1997	
Avg. shipping dist. for all crops*	1,685.5 miles
Avg. shipping dist. for fruits	2416 miles
Avg. shipping dist. for vegetables	1,596 miles
% fresh produce shipped by truck	97.0

Source: Data from 1997 USDA Agriculture Marketing Service Baltimore Fruit & Vegetable Report

Figure 13. SUMMARY INFORMATION, BOSTON, MASS., 1980 & 1995

NATIONAL & NE DATA, 1980	
Total Distributed Pounds	1,542,500,000
Total Northeast Share of Distribution	311,400,000
Northeast % of Total	20.2

BIGGEST PRODUCERS, US, 1980	Pounds	%
CA	545,400,000	35.4
FL	273,800,000	17.8
ME	115,300,000	7.5

BIGGEST PRODUCERS, NE, 1980	Pounds	%
ME	115,300,000	7.5
NY	70,400,000	4.6
MA	43,800,000	2.8

TOTAL NON-US PRODUCERS, 1980	Pounds	%
	142,700,000	9.2
BIGGEST NON-US PRODUCERS includes "imports"	Pounds	%
Mexico	47,500,000	3.1
Canada	34,400,000	2.2
Chile	5,600,000	.4

BOSTON, MASS. DATA, 1980	
Avg. shipping dist. for all crops*	2,002.0 miles
Avg. shipping dist. for fruits	2,336.0 miles
Avg. shipping dist. for vegetables	1,668.0 miles
% fresh produce shipped by truck	76.2

**Weighted averages for the average pound of fresh produce.*

NATIONAL & NE DATA, 1995	
Total Distributed Pounds	2,033,500,000
Total Northeast Share of Distribution	237,900,000
Northeast % of Total	11.6

BIGGEST PRODUCERS, US, 1995	Pounds	%
CA	616,400,000	30
FL	239,600,000	11.7
ME	98,700,000	4.8

BIGGEST PRODUCERS, NE, 1995	Pounds	%
ME	98,700,000	4.8
NY	42,300,000	2
NJ	23,300,000	1.1

TOTAL NON-US PRODUCERS, 1995	Pounds	%
	460,100,000	22.6
BIGGEST NON-US PRODUCERS includes "imports"		
Canada	94,000,000	4.6
Mexico	84,700,000	4.1
Chile	15,600,000	.7

BOSTON, MASS. DATA, 1995	
Avg. shipping dist. for all crops*	2,374 miles
Avg. shipping dist. for fruits	2,568 miles
Avg. shipping dist. for vegetables	2,141 miles
% fresh produce shipped by truck	80.0

Note on Data: The average shipping distance per pound of produce was compiled from a random sampling of 24 crops (53 total)

Source: Data from 1995 Boston Fresh Fruit and Vegetable Wholesale Market Prices & Arrivals

Retailing

For most Americans, shopping at a supermarket is their main interaction with agriculture. The supermarket industry has undergone dramatic changes in the last decade, particularly from mergers and consolidations, and advances in information technology.

In 1987, warehouse clubs and supercenters such as Sam's Club and Wal-Mart carried few food products, especially perishables, but by 1997 they had increased their share of the retail fresh produce sales (from less than .1% in 1987 to 3.8% in 1997) to provide competition to the grocery industry. This is one of the reasons why some large supermarket chains are bypassing the "middlemen" of the produce industry altogether, and purchasing directly from growing regions, as mentioned in the previous section.

Another cost-cutting measure is contractual arrangements with growers, and while contracts have been common to the foodservice industry, it is relatively new to retail. In 1997, 45% of retailers surveyed in a Produce Marketing Association (PMA) survey reported using some form of contractual arrangements with growers. The heaviest users of contracts are the biggest firms (over $1.5 billion annual sales), and typically involve large commercial growers.

Sources: Kaufman,P.R., Handy, C.R., McLaughlin, E.W., Park, K., Green, G.M. 2000. Understanding the Dynamics of Produce Markets. *Agriculture Information Bulletin. No. 758. US Department of Agriculture, Economic Research Service.*

Cook, R.L. 1999. An Overview of Key Food Industry Drivers: Implications for the Fresh Produce Industry. *Journal of Food Distribution Research. (30).*

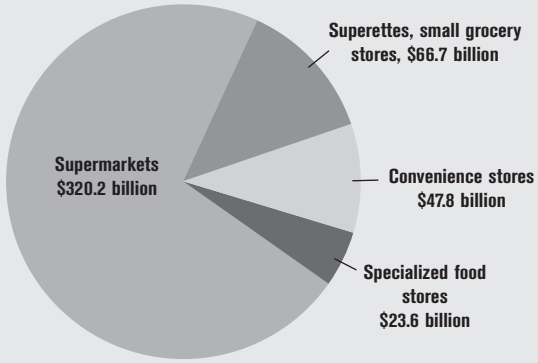
Foodstore Sales in the US, 1999

"The major concern about concentration in the food system focuses on the control exercised by a handful of firms over decision-making throughout the food system. The question is who is able to make decisions about buying and selling products in a marketplace."

Heffernan, W., Hendrickson, M., and Gronski, R. 1999. Consolidation in the Food and Agriculture System. *Report to the National Farmers Union.*

Figure 14. FOODSTORE SALES IN THE US, 1999

Foodstore sales reached $458.3 billion



Sources: Bureau of the Census, Monthly Retail Trade Survey, annual summary, 1990-99; USDA, ERS, US food expenditure tables.

Supermarkets and Grocery Stores

Food retailing underwent dramatic changes between 1987 and 1997. During that time, the four largest food retailers' share of grocery sales rose from 17.1% to 26.8%.

The retail market industry consists of independent stores and chains. *Chain supermarkets* are classified as those that retail a general line of food and operate more than 11 stores with annual sales of at least $2 million per store. *Independent supermarkets* are operated by companies with 11 stores or less and over $2 million in sales per store. *Grocery stores* are defined as having 11 stores or less, with annual sales below $2 million per store. *Convenience stores* (except those with fuel pumps) are those with a more limited line of goods, usually milk, bread, soda, and snacks.

Figure 15. GROCERY STORES IN THE NE
Includes supermarkets, grocery and convenience stores

	Stores	Sales	Payroll	Employees
Connecticut	1,133	$5,497,881,000	$590,034,000	39,245
Delaware	286	$1,109,851,000	$121,887,000	8,057
Maine	773	$1,605,000	$199,660,000	15,665
Maryland	1,866	$8,102,296,000	$958,478,000	52,964
Massachusetts	2,374	$9,623,688,000	$962,760,000	74,423
New Hampshire	576	$2,538,897	$188,760,000	16,821
New Jersey	3,845	$13,184,214,000	$1,498,139,000	95,635
New York	8,908	$22,297,296,000	$2,396,966,000	169,431
Pennsylvania	4,266	$16,978,241,000	$1,735,855,000	137,654
Rhode Island	351	$1,341,785,000	$126,837,000	10,089
Vermont	460	$1,011,064,000	$100,710,000	8,508
West Virginia	830	$2,299,259,000	$210,763,000	17,937
REGION	**25,668**	**$83,986,077,000**	**$9,090,849,000**	**646,429**

Source: 1997 Economic Census

Figure 16. TOP WORLD, NORTH AMERICAN FOOD RETAILERS

TOP WORLD FOOD RETAILERS		Sales (in billions)
1. Wal-Mart*	US	$164.9
2. Carrefour	France	$80.0
3. Kroger	US	$45.4
4. Metro AG Group	Germany	$39.8
5. Alberston's	US	$37.5
6. Royal Ahold	Netherlands	$33.8

** Total Store Sales*

TOP NORTH AMERICAN GROCERY CHAINS		Sales (in billions)
1. Kroger	Cincinnati	$45.4
2. Wal-Mart*	Bentonville, Ariz.	$45.0
3. Albertson's	Boise	$37.5
4. Safeway	Pleasanton, Calif.	$28.9
5. Ahold USA	Chantilly, Vir.	$20.3

** Total Store Sales*

Source: Supermarket News 2000

FARMS TO FOOD FACTS

- "There are only 12 major food retailers in the entire world. Number one is Wal-Mart." *(Agriculture Commissioner Robert Spear, Maine, 1999)*
- Six multinational corporations account for over 46% of retail purchases of food in the US. In 1992, of a total of $221 billion in food and beverage sales:
  - Phillip Morris = $33 billion
  - Conagra = $21 billion
  - Pepsico = $14 billion
  - Coca Cola = $13 billion
  - IBP Inc. = $11 billion
  - Anheuser Busch = $10 billion
- Phillip Morris owns General Foods owns Kraft owns Taco Bell.
- The Phillip Morris companies spent $2,278,900,000 on advertising in 1996. *(Source: Just Food)*
- Sales of natural foods, (including organically grown fruits and vegetables) grew 59.7% between 1997 and 1998 (compared to 2.5% in other retail products). *(Source: Richman, N.J., University of MN, 2000)*

The following are some of the major supermarket chains in operation in the northeastern states.

Figure 17. GROCERY CHAIN STORES IN THE NE

Supermarket Chain	Owner	ME	VT	NH	MA	RI	CT	NJ	NY	DC	DE	MD	PA	WV	Total
Food Lion	Delhaize America Inc.-Belgium					1,100 stores in 11 states									1,100
Hannaford Bros/Shop N Save	Delhaize America Inc.	46	10	22	6				28						112
Safeway	Safeway							5		16		69	32		122
Genuardi Family Markets	Safeway							3			3		31		37
Stop N Shop	Ahold, Inc.-Netherlands				108	22	73	46	60						309
Giant Food	Ahold, Inc.									5	3	104			112
Giant Food, Penn.	Ahold, Inc.												97		97
Tops	Ahold, Inc.								96				4		100
Wilson Farms									119						119
Shaw's	J. Sainsbury-UK	20	16	25	88	13	23								185
Star	J. Sainsbury				37										37
Shop Rite Supermarkets	Wakefern Food Corp.						12	117	38		3		20		190
Food Emporium	Great Atlantic & Pacific Tea Co.						3	1	37						41
A&P	Great Atlantic & Pacific Tea Co.							95	38						133
Super Fresh	Great Atlantic & Pacific Tea Co.							14		1	10	47	28		100
Acme	Albertson's, Savon, Osco							65				11	62		138
Shop N Save, Laneco, Shoppers Food	Supervalu								20				65		85
Demoulas Supermarket				27	34										61
Fresh Fields, Whole Foods	Whole Foods				11	1	1	4	3	3		5	6		34
Weis Markets								3	3			23	136	1	166

Sources: Company Reports

Figure 18. SUPERMARKET ACQUISITIONS AND CONSOLIDATIONS BY US REGION

Acquiring and Acquired Retailer	Grocery Stores Acquired	Sales of Acquired Stores
PACIFIC REGION		
Safeway – Vons, 1997	325	$5,400,000,000
Yucaipa – Fred Meyer, 1997	101	$3,124,000,000
Quality Foods Centers – Hughes, 1997	57	$1,250,000,000
Yucaipa – Smiths Food & Drug, 1997	150	$3,000,000,000
Yucaipa – Quality Foods Centers, 1997	203	$1,200,000,000
Albertson's – Lucky (American Stores), 1998	448	$8,295,000,000
MIDWEST REGION		
Giant Eagle – Riser Foods, 1997	56	$4,000,000,000[2]
Lund's – Byerly's, 1997	11	$65,000,000
Albertson's – Jewel/Osco (American Stores), 1998	17[1]	$3,166,000,000
INTER-REGIONAL		
Safeway – Dominicks, 1998	112	$2,300,000,000
Kroger – Yucaipa/Fred Meyer, 1999	800	$15,000,000,000
Safeway – Randalls, 1999	116	$2,500,000,000
NORTHEAST REGION		
Ahold – Stop & Shop, 1996	189	$4,400,000,000
Ahold – Giant Food, Inc., 1998	176	$4,200,000,000
Albertson's – Acme (American Stores), 1998	183	$3,388,000,000
Food Lion – Hannaford, 1999	150	$3,400,000,000
SOUTHEAST REGION		
Food Lion – Kash & Karry (Florida), 1997	100	$1,000,000,000
Jitney Jungle – Delchamps, 1997	118	$1,300,000,000
Kohlberg & Co. – Schwegmann's, 1997	26	$115,000,000

1 Total sales of American Stores (Lucky, Jewel/Osco, and Acme) was $19.9 billion in 1998. Sales by region exclude sales of 773 pharmacy/drugstores.
2 Sales include wholesale sales to 586 independent grocery retailers.

Source: Kaufman, P.R., Handy, C.R., McLaughlin, E.W., Park, K., Green, G.M. 2000.

Direct Marketing

Direct marketing (roadside farmstands, farmers markets, Community Supported Agriculture) is one of the most successful marketing strategies for NE farmers. With our large consumer population and many urban-edge farms, direct producer-consumer relationships provide NE farmers with accessible and often committed markets. Many farmers, as well as government officials and economic development professionals see direct marketing as a means to improve farm income (capturing more of the farm dollar away from middlemen) and local economies. Direct marketing plays an important role in rural development, despite 1992 census data that indicates that the income from direct selling is limited to communities near urban areas.

FARMS TO FOOD FACTS

- NE accounts for 30% of all farmers' market sales in the US. *(Source: 1994 National Farmers' Market Directory, USDA)*
- There are 279 CSAs in the NE; 38% of total US number. *(Robyn Van En Center 1999)*
- Five NE states are among the top 10 states with the greatest increases in number of farms direct marketing: Vt. (46%); N.H. (35%); W.Va. (26%); Maine (17%); N.Y. (17%). *(Source: USDA Census of Agriculture, 1997)*

Figure 19. TOP STATES, DIRECT TO CONSUMER SALES, 1992

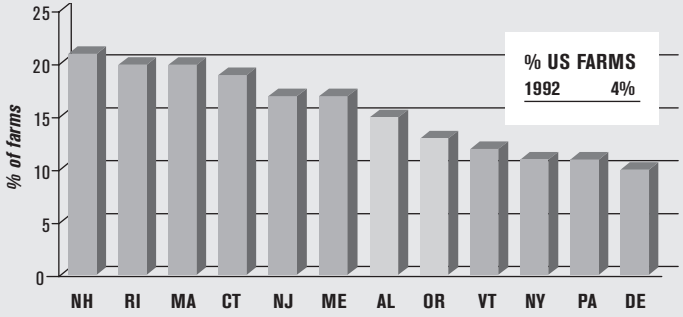


Figure 21. TOP STATES, AVERAGE VALUE OF DIRECT MARKET SALES

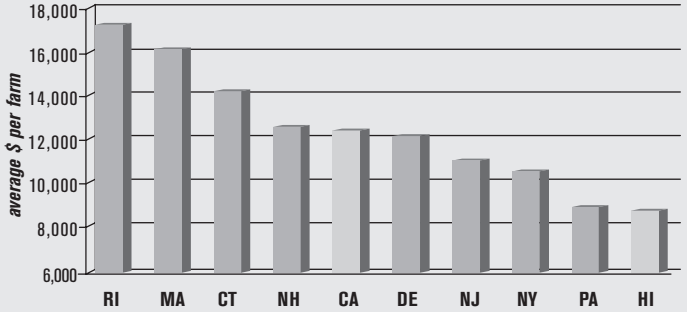
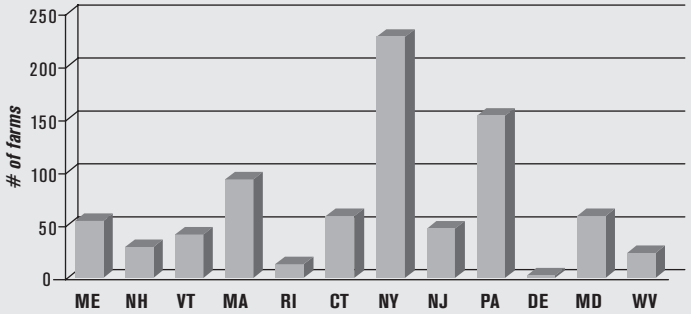
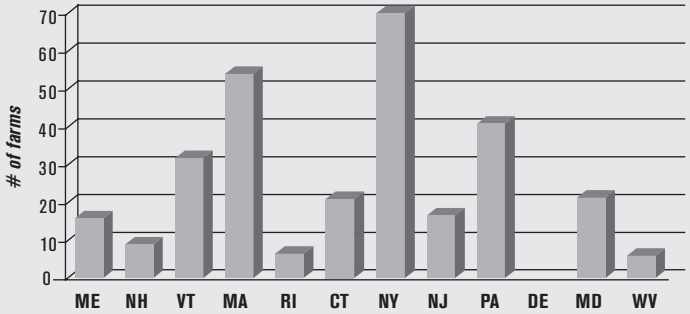


Figure 20. FARMERS MARKETS IN NE



Source: USDA Agriculture Marketing Service, Farmers Market Guide 2001

Figure 22. CSA FARMS IN NE



Source: Robyn Van En Center for CSA Resources 2001

Transportation and "Food Miles"

The US agricultural sector is the largest user of freight transportation services. When shipments of raw agricultural commodities (produce, livestock, grains, timber), processed products (foodstuffs, canned foods, lumber), and agricultural inputs (fertilizer, pesticides, farm machinery) are combined, agriculture accounts for almost one-third of all freight transportation services in the US.[1]

US agriculture is dependent upon a transportation system that is reliable, inexpensive, and includes all major modes of shipping (water, rail, and highway). For example, the rise and continued success of California and the southwest as major suppliers of fresh vegetables occurred due to the development of refrigerated rail cars and more efficient refrigerated containers; the continued domination of this market by these producers is a direct result of the availability of high-speed, long-haul refrigerated trucks.[2]

The trucking industry is changing along with other players in the food system. In the US it is estimated that there are over four million tractor-trailers, from individual operators to large firms that own fleets of up to 45 tractor-trailers. There are approximately 423,000 total trucking firms with an average fleet size of 9.5 vehicles, with over 69% of the firms operating less than six vehicles.

Fuel, road, and vehicle maintenance, and numerous fees and charges applied to the trucking industry account for a portion of the price we pay for food at retail outlets. The costs for intercity transportation of food products was $23.6 billion in 1997, which was a 2.9% increase from 1996, primarily due to higher trucking rates.[3] In 1997, over 170 billion miles were traveled by tractor-trailers, using 42.5 billion gallons of diesel fuel.[4] Tractor-trailers average 5.9 miles per gallon, which is low fuel efficiency, and diesel fuel is also responsible for a significant portion of air pollution, especially particulate matter. We enjoy an abundant and year-round supply of food at a price that is only partially reflected in food costs.

Just how far do food products travel in the U.S, and why does it matter? Various studies have assessed the shipping distances of food products in the US and the UK, sometimes referred to as "food miles." Some of these studies include the environmental impacts of fossil fuel use and other external costs of the food chain in their treatment of transportation in the food system. Other studies just report the quantity of the products shipped, as in the US Department of Transportation Commodity Flow Survey, where it was reported that in 1993, 257 million tons of fresh produce was shipped by truck in the US. Traveling over 23 billion-ton miles (BTM), they concluded that the average distance per shipment was 191 miles.[5]

An oft-quoted statistic states that the average food product travels 1,300 miles in the US. This figure is from a 1969 Office of Civil Defense report that analyzed the impact of a nuclear attack on American agriculture. They actually determined that the distance was 1,346.1 miles, but were measuring only certain commodities *(not including fresh produce)* and, according to some, utilized questionable statistical models.[6]

FARMS TO FOOD FACTS

- A nationally-sourced food system uses four to 10 times more fuel than a system that relies on local and regional sources of food.
- A nationally-sourced food system releases five to 10 times more CO_2 from the burning of this fuel than a regionally-based food system. *(Source: R. Pirog, 2001)*
- Transportation costs represent 6-12% of the consumer dollar spent on food consumed at home. *(Source: V. James Rhodes, The Agricultural Marketing System, 4th Edition. 1993)*

1 Klindworth, K. 1999. Draft: Agricultural Transportation Challenges for the 21st Century: A Framework for Discussion. *Transportation and Marketing Programs. USDA/AMS.*

2 Stoll, S. 1998. The Fruits of Natural Advantage: Making the Industrialized Countryside in California. *University of California Press.*

3 Elitzak, H. 1999. Food Cost Review, 1950–1997. Agricultural Economic Report No. 780. Food and Rural Economics Division, Economic Research Service, US Department of Agriculture

4 American Transportation Association. Available at .com http://www.ata.com.

5 US Department of Tranportation, Bureau of Transportation Statistics. 1993 Commodity Flow Survey.

6 US Department of Energy, 1969. US Agriculture: Potential Vulnerabilities. Research Report prepared by the Stanford Research Institute, Menlo Park, Calif.

Chapter Three: CONSUMPTION

SECTION ONE Population and Demographics

Census Population Change

The NE is the most densely populated region in the US. This means market opportunities for food producers and marketers, not only in terms of sheer numbers, but also in terms of the variety of "customer" eating habits and preferences. This large population is increasingly diverse, and concentrated in metropolitan and semi-urban areas.

Figure 1. NE POPULATION CHANGE, 1990–2000

	April 1, 2000	April 1, 1990	Change in Population	% Increase
Delaware	783,600	666,168	117,432	17.6
New Hampshire	1,235,786	1,109,252	126,534	11.4
Maryland	5,296,486	4,781,468	515,018	10.8
New Jersey	8,414,350	7,730,188	684,162	8.9
Vermont	608,827	562,758	46,069	8.2
Massachusetts	6,349,097	6,016,425	332,672	5.5
New York	18,976,457	17,990,455	986,002	5.5
Rhode Island	1,048,319	1,003,464	44,855	4.5
Maine	1,274,923	1,227,928	46,995	3.8
Connecticut	3,405,565	3,287,116	118,449	3.6
Pennsylvania	12,281,054	11,881,643	399,411	3.4
West Virginia	1,808,344	1,793,477	14,867	0.8
NORTHEAST	**61,482,808**	**58,050,342**	**3,432,466**	**7**
UNITED STATES	**281,421,906**	**248,709,873**	**32,712,033**	**13.2**

Note: 1990 populations shown in this table were originally published in 1990 Census reports and do not include subsequent revisions due to boundary or other changes.

Source: US Census Bureau 2000 PHC-T-2. Ranking Tables for States: 1990 and 2000 Table 2. States Ranked by Numeric Population Change: 1990 to 2000

It is projected that nationally, non-Hispanic whites will account for 54% of the population in 2020, down from 74% now. Hispanics and Asians will constitute 61% of US population growth in the next 25 years. Asian and Hispanic populations are clustered in several "melting pot" — usually urban — centers.

While many NE citizens can choose from a wide variety of food products from super-supermarkets and miles of fast food options, others are not able to easily access fresh and culturally appropriate foods. Hunger and food insecurity are on the rise in parts of the NE. Until recently, household income was increasing at all income levels. In 1996, poverty in the US was lowest since 1979 at 11.8%. At the same time, the gap between rich and poor widens. One percent of the population owns nearly 42% of the nation's wealth. In the 1990s, incomes of the poor remained flat, middle class incomes grew by only 2%, while average income of the top 5% grew by 27%.

FARMS TO FOOD FACTS

- The NE occupies less than 7% of total coterminous US land, and is home of 22% of US total population.
- The average population density is 313 persons per square mile, nearly four times the US average.
- Population densities range from 1,135 persons/square mile in New Jersey, the highest in the nation to 41 in Maine.

Population by Race or National Origin

Figure 2. NE POPULATION BY RACE OR NATIONAL ORIGIN, 2000

	Total Population	White	Black or African	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Hispanic or Latino	Some Other Race
US	**281,421,906**	**211,460,626**	**34,658,190**	**2,475,956**	**10,242,998**	**398,835**	**35,305,818**	**18,521,486**
NORTHEAST	**62,054,867**	**47,404,461**	**8,128,502**	**186,031**	**2,371,237**	**24,214**	**5,576,512**	**2,566,107**
NEW ENGLAND								
Maine	1,274,923	1,236,014	6,760	7,098	9,111	382	9,360	2,911
New Hampshire	1,235,786	1,186,851	9,035	2,964	15,931	371	20,489	7,420
Vermont	608,827	589,208	3,063	2,420	5,217	141	5,504	1,443
Massachusetts	6,349,097	5,367,286	343,454	15,015	238,124	2,489	428,729	236,724
Rhode Island	1,048,319	891,191	46,908	5,121	23,665	567	90,820	52,616
Connecticut	3,405,565	2,780,355	309,843	9,639	82,313	1,366	320,323	147,201
MIDDLE ATLANTIC								
New York	18,976,457	12,893,689	3,014,385	82,461	1,044,976	8,818	2,867,583	1,341,946
New Jersey	8,414,350	6,104,705	1,141,821	19,492	480,276	3,329	1,117,191	450,972
Pennslyvania	12,281,054	10,484,203	1,224,612	18,348	219,813	3,417	394,088	188,437
SOUTH ATLANTIC								
Delaware	783,600	584,773	150,666	2,731	16,259	283	37,277	15,855
Maryland	5,296,486	3,391,308	1,477,411	15,423	210,929	2,303	227,916	95,525
Washington DC	572,059	176,101	343,312	1,713	15,189	348	44,953	21,950
West Virginia	1,808,344	1,718,777	57,232	3,606	9,434	400	12,279	3,107

NOTE: Data not adjusted based on the Accuracy and Coverage Evaluation. For information on confidentiality, protection, sampling error nonsampling error and definitions, see http://factfinder.census.gov/home/en/datanotes/expplu.html.

NOTES: Categories may add up to more than total population due to multiple reporting.

Source: US Census Bureau; Internet Release date: April 2,2001

SECTION TWO
Eating Habits and Market Trends

The vast majority of NE citizens are not directly connected with the sources of their food. We have come to expect exotic fruits throughout the year. Many children believe that milk comes from a container, never having seen a cow. This disconnect creates a population indifferent to their dependence on food production and less aware of the impacts of their food choices.

Several major trends are shaping consumer food buying habits. One is globalization. Importation of a wide variety of foods year-round, at low prices, offers customers a dazzling cornucopia of products. A key lifestyle trend is the continued increase of women in the workforce. People are spending less time on food preparation. This leads to an increasing demand for high-convenience foods and ready-to-eat meals, and a rise in meals away from home. These factors enable companies that sell less nutritional, highly processed and packaged goods to capture more and more of the consumer's dollar.

Illustration by Wayne Stroot

Mother Earth News, with permission

Dietary Patterns in the US

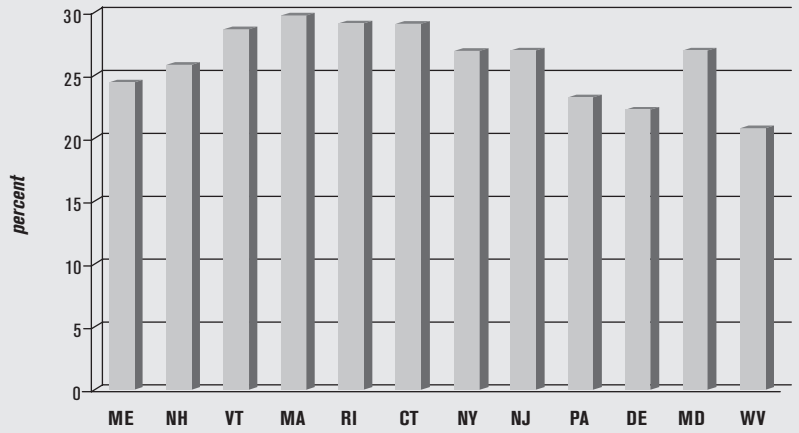
One the one hand, there is a growth in public knowledge of diet, physical fitness, and health issues; on the other, there is a rise in obesity and diet-related illness and deaths. Eighty-seven percent of consumers are "somewhat" or "very" concerned about nutrition.[1] The average American decreased consumption of red meat by 9% in the last 20 years. At the same time, per capita consumption of sugars and other caloric sweeteners jumped 29% to the equivalent of 34.1 teaspoons per day. A typical adolescent boy drinks nearly 21 ounces of soda per day, about 9% of his total caloric intake (E. Schlosser, 2001). While consumers report buying products labeled "low fat" (79%) and "natural" (59%), there are no dramatic trends in dietary patterns (Food Marketing Institute).

The American diet has improved in recent years, but most Americans still consume too few servings of fruits, vegetables, and whole grains. Americans report eating more vegetables, but 52% of all vegetable servings consisted of lettuce, potatoes (including chips), and canned tomatoes. With more "home meal replacements" and meals consumed away from home, there appears to be a decline in cooking knowledge and time spent in the kitchen. Fewer raw ingredients (with higher nutritional value) are being prepared.

1 Food Marketing Institute, in Nutritional Outlook, *Jan/Feb 2001.*

Figure 3. FRESH PRODUCE CONSUMPTION, 2000

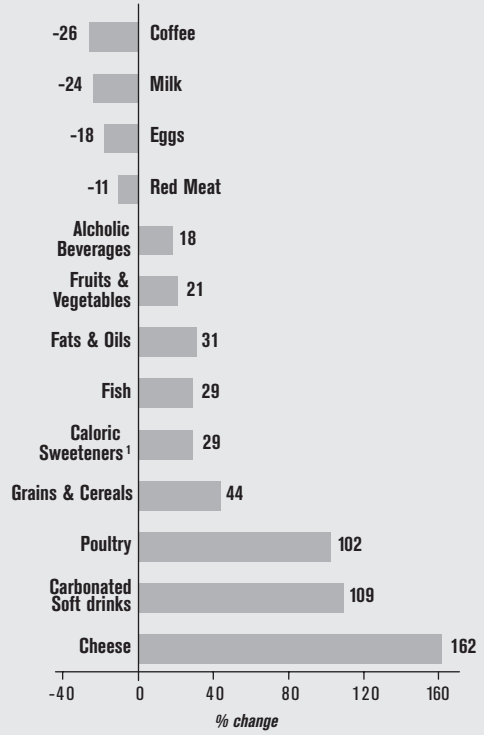
percentage of persons 18 & over who report they consume five or more servings of fruits or vegetables a day



Source: Division of Adult and Community Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System Online Prevalence Data, 1995-2000.

Figure 4. CHANGE IN PER CAPITA FOOD CONSUMPTION, 1970–1999

The American diet has undergone marked change

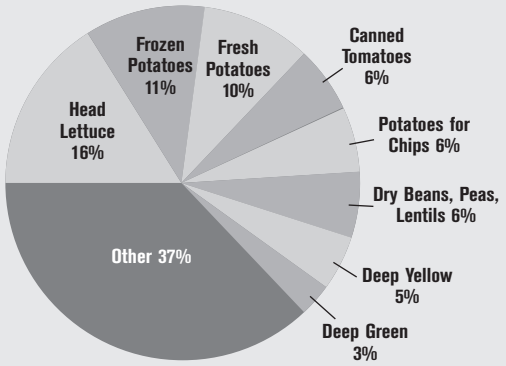


1999 data are preliminary

[1] Includes caloric sweeteners used in soft drinks

Source: USDA, Economic Research Service

Figure 5. US VEGETABLE CONSUMPTION
by type



Source: USDA, ERS

Food Purchasing Trends

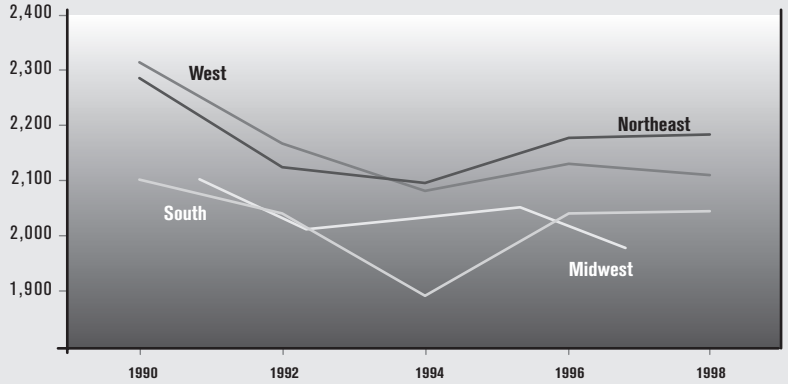
Consumers are barraged with myriad messages about food. Food purchasing decisions are increasingly complex for many shoppers. Consumers are becoming more concerned about the conditions under which crops and animals are raised, and environmental considerations such as water quality and pollution. Many consumers are making daily choices between ease of preparation and nutrition, convenience and environmental concerns, cost and quality, variety and availability. Inner-city and lower income residents face different issues: availability of nutritional, culturally appropriate, and affordable food choices. Most consumer decisions do not typically factor in the less obvious impacts of food choices such as on local economies, energy use, or open space.

Food Spending

Income spent on food has steadily dropped. For example, in 1999, the total portion of income spent on food, 10.4%, was down from 11% in 1998. The US Census Bureau estimates that US consumers spend less of their household income on food (8.7%) than most other nations (compare to Canada at 10.5% and Japan at 10.8%).

Consumers spent $618.4 billion in 1999 for food that originated on US farms. About 21% represented the portion that went to farmers; marketing costs accounted for the balance (Food Marketing Institute).

Figure 6. PER CAPITA FOOD SPENDING, 1990–1998
$ per person, by region, 1998 prices



Source: Economic Research Service from Bureau of Labor Statistics data

FARMS TO FOOD FACTS

- Diet is an influence in 53.7% of the leading causes of US deaths. It is estimated that improved diets might save $5.1 to $10.6 billion per year on medical care costs, missed work, and premature deaths. *(USDA ERS 1999)*
- Less than 25% of US adults ate at least five servings of fruits and vegetables a day. *(CDC, 1999)*
- The number of overweight adolescents has nearly tripled in the last two decades. *(US Surgeon General)*
- In 1995, fast food accounted for 12% of total caloric intake, four times the percent in 1977. *(Lin, USDA/ERS AIB-750)*

While eating and food spending patterns are not typically broken down by region, there are some regional and demographic variations in food spending habits. For example, people in the NE spend about $2,182 per person on at-home and away-from-home food. This is 3.5% more than westerners, 7% more than midwesterners, and 15% more than southerners. The average (adult) per-person weekly grocery expense is $38.

How Food Dollars are Spent

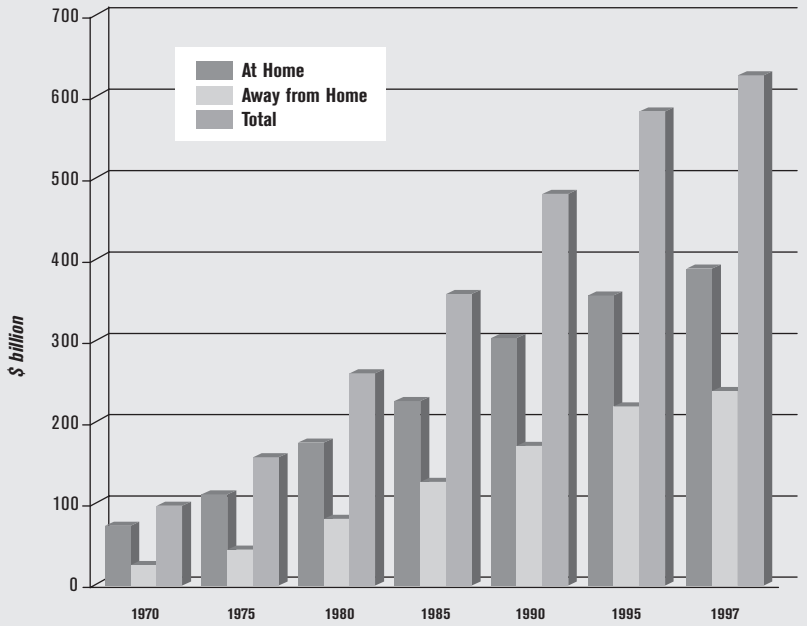
Meals consumed away from home increased from 16% in 1977 to 39% of all meals in 1995. Away-from-home meals provided 34% of caloric intake in 1995, nearly double what it was in 1977. Away-from-home meals typically contain more "over-consumed" nutrients such as fat, and less of those "under-consumed" such as calcium and fiber.

Consumer interest in "natural foods" has skyrocketed. According to the Nutrition Business Journal, natural and organic food sales in 2001 topped $12.9 billion, up 9.3% over 2000, with organic food sales up nearly 20% between 2000 and 2001 (NBJ 2001). US organic food sales were $9.3 billion in 2001. According to one survey, 42% of supermarket shoppers reported buying some type of organic food (Hartman Group, 2001). Compare this growth with the 2.5% growth in other retail product lines, and it is clear why natural foods have claimed the attention of the supermarket industry. Consumers turn to the natural foods market place for various reasons (see Figure 7). Yet, consumers are still likely to leave "better for you" foods on the shelf if they are perceived as too expensive.

Figure 7. REASONS CONSUMERS PURCHASE ORGANIC PRODUCTS

	%
Health and Nutrition	66
Taste	38
Food Safety	30
Environment	26
Availability	16

Figure 8. FOOD SPENDING BY LOCATION IN US, 1970–1997



Source for text and chart: Household Food Spending by Selected Demographics in the 1990s. *Noel Blisard and J. Michael Harris. ERS No. 773. 16 pp, August 2001*

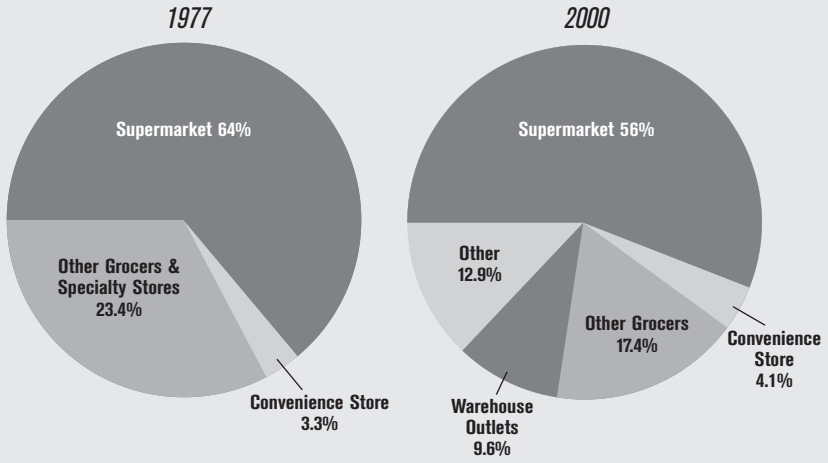
At the same time, growth in the fast food industry is staggering. Since 1982, consumers have increased spending on fast foods by *6.8% each year,* bringing fast food sales to $109.5 billion in 1997. Fast food restaurants account for 34% of consumption of foods not prepared at home.

Figure 9. LOCATION OF MEALS, 1977–2000

	1977-78	1987-88	1990	1994	1995
Meals per Day	2.7	2.6	2.6	2.7	2.6
Snacks per Day	1.1	0.9	1.2	1.5	1.6
Source of Meals (%)					
At Home	84	76	77	72	71
Away from Home	16	24	23	28	29
Source of Snacks (%)					
At Home	83	80	82	79	78
Away from Home	17	20	18	21	22
Source of All Meals & Snacks (%)					
At Home	84	77	78	74	73
Away from Home	16	23	22	26	27
Restaurant	2	4	4	6	5
Fast Food	3	7	7	8	9
School	3	2	2	2	2
Other Public	3	2	2	2	2
Others	6	8	7	8	9

Figure 10. SOURCES OF FOOD FOR AT-HOME MEALS

Spending the "food-at-home" dollar



Food Fears

Nearly half the population feels it is extremely or very important to have products that don't include genetically modified organisms (GMO). Nearly 60% have concerns about GMO components in their foods, although barely one in eight shoppers has read or heard a lot about GMO's (Natural Marketing Institute, Food Marketing Institute). Another study reports that 60% of consumers would be "extremely likely" (5%), "very likely" (15%), or "somewhat likely" (40%) to purchase a fresh produce item that has been genetically modified (Fresh Trends 2001). Attitudes about GMO foods are ambivalent and in fluctuation, but several surveys found that the number of people pessimistic about biotechnology is growing worldwide.

Other food safety concerns include: e. coli bacteria in fresh fruit juices and meats; mad cow disease; pesticide residues; and salmonella in poultry.

FARMS TO FOOD FACTS

- Processed food purchases account for 90% of the US food dollar. *(E. Schlosser, 2001)*
- In 1996, 39% of total food spending was captured by the food-away-from-home sector. This is up 13% since 1970. *(Elitzak, H. USDA/ERS 1999)*
- Americans spend 26% of food expenditures on dining out in 1970; in 1996 this rose to 39%.

Figure 11. CONSUMERS EXTREMELY OR VERY LIKELY TO PURCHASE A FRESH PRODUCE ITEM THAT HAS BEEN GENETICALLY MODIFIED

by percent

	%
Northeast	17
North Central	21
South	18
West	26
Men	32
Women	18

SECTION THREE
Food Access and Insecurity

What is food security? The US Action Plan of Food Security (USDA, 1999) defines food security as "when all people at all times have physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life." There are three key elements:

- physical and economic access to food by individuals and household
- adequate availability of food
- full utilization of food; a balanced, adequate diet; safe water; sanitation; education; and health care.

When communities lack one or more of these factors, they are considered "food-insecure."

Food Insecurity

In 1998, about 36 million Americans lived in households that suffered from food insecurity. About 10 million of these suffered directly from hunger — going without food because they could not afford to obtain it. A 1995 study showed that hunger was present at least part of the year among 4.1% of all US households. About 12% were food insecure due to resource constraints. (Hamilton, et al., 1997) In the NE, between 6% and 10% of households are food-insecure, with about 3% of these experiencing hunger.

Source: Margaret Andrews, Mark Nord, Gary Bickel, and Steven Carlson. Household Food Security in the US, 1999, *Food Assistance and Nutrition Research Report No. 8. 24 pp., September 2000*

Figure 12. FOOD INSECURITY IN NE

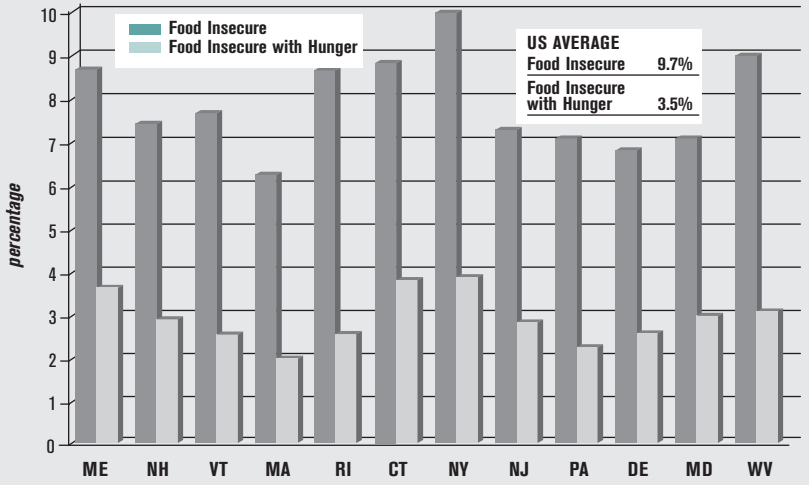
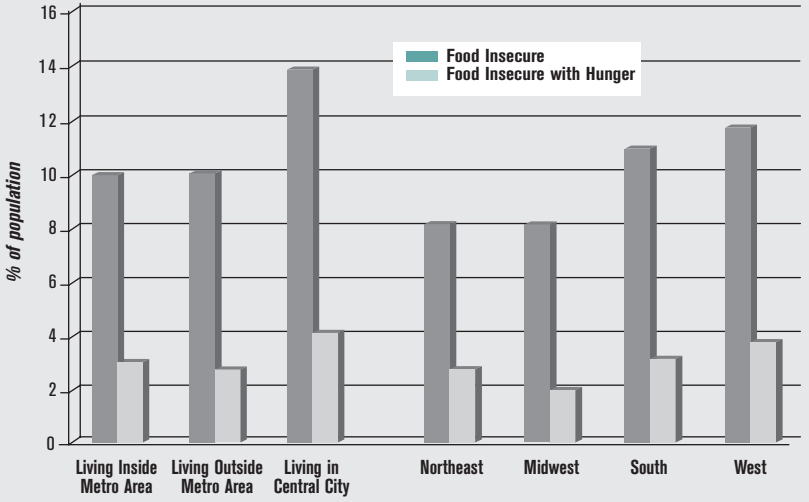


Figure 13. LOCATION OF FOOD INSECURE POPULATION IN US



Food Access: the Challenge

Historically, anti-hunger efforts have tended to focus on hunger at the individual and household levels. Community food security is a relatively new concept that describes a community-based approach to addressing hunger and food insecurity. Community food security provides an integrated framework for addressing the provision of adequate and acceptable food to all members of a community, through local, non-emergency sources.

The community food security movement takes a systemic view of the causes of hunger and poor nutrition and looks for solutions focused on prevention and community empowerment. Links to local farmer and urban food production are emphasized as well as emergency feeding programs and nutrition education.

Food insecurity is most prevalent in low-income urban areas. (This is not to say that there are no food-insecure or hungry households in rural areas. Ironically, more than a few farm families qualify for food stamp programs.) Most food insecure communities share a variety of traits including low levels of income and education, weakened community structures, poor housing, inadequate public support programs, and inadequate transportation and accessible food markets. An investigation of food access — data that are not readily available — exposes some disturbing trends.

In New York City, a study by the Department of Consumer Affairs (1991 as reported in the *Wall Street Journal,* 4/15/91) showed that:

- Low-income shoppers paid 8.8% more than middle class shoppers for the same basket of groceries. For example, an A&P in Harlem charged 13% more for the same basket of products than an A&P in middle class Queens.
- In New York City's poor neighborhoods there was one store per 9,400 people; in richer areas there was one store per 5,800 people.

Another study (Ronald W. Cotterill and A.W. Franklin, Food Marketing Policy Center, University of Connecticut) found:

- Nationally, there is an "urban grocery store gap;" some cities have very serious problems in meeting food access needs in these locations.
- Areas with a higher percentage of residents on public assistance have about half the [food store] retail space per capita.
- People on public assistance are less likely to have their own vehicles (71% compared to 95% in areas with fewest households on public assistance.)

In Hartford, Conn., investigators concluded that transportation problems and the lack of supermarkets pose barriers to food shopping.

- Fifty-three percent of study respondents who did not have cars reported difficulty getting to a food store. Some used buses, taxis, got a ride in someone else's car, or walked.
- Over two-thirds of these reported that lack of transportation limited their choice of food markets. (Commission on Food Policy, Hartford, Conn. 1998)

FARMS TO FOOD FACTS

- In 1998, 3.7 million more children and 6.4 million more adults were living in households with hunger or food insecurity than in 1997. *(Source: Food Research and Action Center, 1999)*
- Second Harvest, a network of 185 emergency food banks, fed nearly 10% of US population – almost 26 million people – in 1997. *(Source: Chronicle of Philanthropy, 1998)*
- 37% of adults requesting "emergency" food assistance were employed; low paying jobs led the list of causes of hunger identified by city officials. *(Source:* Hunger and Homelessness Survey Summary, *US Conference of Mayors, 1999)*

Responses: Government Programs

Among the responses by the USDA to hunger are the Food Stamp Program, the School Lunch Program, and the WIC (Women, Infants and Children) Program, including the Farmers' Market Nutrition Program. Each functions as a subsidized food- or meal-purchasing program for qualifying, lower-income citizens.

The Food Stamp Program serves as the first line of defense against hunger. It enables low-income families to buy nutritious food with coupons and Electronic Benefits Transfer (EBT) cards. Food stamp recipients spend their benefits to buy eligible food in authorized retail food stores.

Figure 15. FOOD STAMP PARTICIPATION

number of people

	1995	April 1999	April 2000	% Change 1999-2000
Connecticut	99,750	177,758	164,900	-8
Delaware	21,144	36,397	32,134	-12
Maine	60,304	111,047	102,182	-8
Maryland	169,440	259,899	216,692	-17
Massachusetts	178,281	258,301	227,261	-12
New Hampshire	25,291	36,359	36,620	+1
New Jersey	232,755	385,321	345,035	-10
New York	1,027,321	1,524,145	1,408,318	-8
Pennsylvania	515,927	841,156	785,875	-7
Rhode Island	40,002	76,943	74,471	-3
Vermont	26,712	44,526	41,644	-7
West Virginia	123,012	247,495	224,376	-10
US TOTAL	na	18,100,864	17,051,853	-6

Source: http://www.fns.usda.gov/pd/fsfypart.htm, June 23, 2000

Figure 14. NATIONAL SCHOOL LUNCH PROGRAM PARTICIPATION

number of students

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
Connecticut	230,268	235,106	241,698	247,324	258,521
Delaware	65,792	66,700	67,076	69,055	70,267
Maine	104,027	104,073	104,327	105,021	105,813
Maryland	367,015	372,081	375,706	382,974	386,356
Massachusetts	466,911	479,598	489,599	502,821	520,478
New Hampshire	89,382	93,665	94,118	98,467	100,804
New Jersey	522,630	530,013	542,147	553,852	567,684
New York	1,659,921	1,674,508	1,704,491	1,735,380	1,773,276
Pennsylvania	987,151	999,952	1,007,937	1,006,185	1,007,183
Rhode Island	57,018	57,689	56,665	59,286	61,014
Vermont	49,417	50,620	51,209	51,053	52,048
West Virginia	207,607	202,855	209,999	202,788	204,129
US TOTAL	25,685,286	25,942,410	26,341,186	26,598,578	26,947,984

*Participation data are nine-month averages; summer months (June-August) are excluded. Participation is based on average daily meals divided by an attendance factor of 0.927.

Source: <http://www.fns.usda.gov/pd/slsummar.htm>Summary] [School -data as of June 23, 2000

Figure 16. WIC PROGRAM PARTICIPANTS, NE

number of people

	1995	1996	1997	1998	1999
Connecticut	59,368	60,267	58,299	50,867	49,254
Delaware	15,581	15,635	15,274	15,844	16,550
District of Columbia	16,747	16,593	16,406	15,060	15,195
Maine	26,663	25,786	24,646	22,073	20,962
Maryland	91,412	92,744	93,338	94,194	93,864
Massachusetts	118,818	117,681	115,042	113,842	112,785
New Hampshire	19,179	18,678	18,100	17,049	16,503
New Jersey	141,514	140,732	129,603	127,013	128,576
New York	478,980	482,882	476,563	466,818	460,252
Pennsylvania	257,018	246,337	235,526	230,914	226,471
Rhode Island	22,596	22,768	22,454	21,783	21,991
Vermont	16,133	16,308	16,051	16,401	15,966
West Virginia	55,065	53,962	52,335	50,996	50,064
TOTAL	7,406,866	7,367,397	7,311,206	7,192,300	7,304,930

WIC is the common abbreviation for Special Supplemental Nutrition Program for Women, Infants and Children. Participation data are 12-month averages. The sum of the substates may not add to the state total due to rounding. Data are subject to revision.

The WIC program's purpose is to safeguard the health of low-income women, infants, and children up to age 5 who are at nutritional risk by providing nutritious foods to supplement diets, as well as educational materials.

A recent innovation to the Farmers' Market Nutrition Program (see below) is the Seniors Farmers' Market Nutrition Program which provides low-income seniors with coupons that can be exchanged for eligible foods at farmers' markets, roadside stands, and community-supported agriculture programs. In 2001 in the NE, all states except Delaware, Pennsylvania, and Rhode Island, and Washington DC, sponsored SFMNP.

Farmers' Market Nutrition Program
The WIC FMNP was established by Congress in July 1992. It was created to accomplish two goals:

- To provide fresh, nutritious, unprepared foods (such as fruits and vegetables) from farmers' markets to women, infants, and children who are nutritionally at risk.
- To expand the awareness and use of farmers' markets by consumers.

FMNP coupons are issued to eligible recipients, separately from their regular WIC food instruments. These coupons can be used to buy produce (fresh, unprepared fruits and vegetables) from farmers who have been authorized (directly or through their operation in an established farmers' market) by the state to accept them. The federal benefit under the FMNP ranges from $10 to $20 per recipient per year, based on the state's discretion. The coupons are then submitted to the state agency for reimbursement. Nutrition education is provided to FMNP recipients by the state agency, often through an arrangement with the local WIC agency, to encourage them to improve and expand their diets by adding fresh fruits and vegetables, and to advise them in preparing the foods that are bought with their FMNP coupons.

Federal funds support 70% of the total cost of the program. States operating the FMNP must match the federal funds allocated to them by contributing at least 30% of the cost of the program.

FARMS TO FOOD FACTS

- 51% of the 1999 USDA budget went to food assistance programs.
- Children account for 38% of all individuals relying on food aid.
- 27% of the hungry live in rural areas. *(Food Resource and Action Center)*
- America's Second Harvest's network of food bank emergency food providers served 23 million people; over 9 million were children. *(Second Harvest)*
- In 1999, the US saw a 19% increase in demand for emergency food supplies. *(Lowe, E.T., et al.,* A Status Report on Hunger and Homelessness in America's Cities, *2000)*

During FY 2000, about 1.9 million recipients received farmers' market benefits. Coupons redeemed through the FMNP resulted in approximately $17.5 million during FY 2000

During FY 2000, 12,897 farmers and 1,622 farmers' markets were authorized to accept FMNP coupons.

According to the USDA, every NE state except Delaware has a Farmers Market Nutrition Program. (USDA Food and Nutrition Service)

Responses: Community Food Projects

The NE holds many examples of creative food-focused, community-based initiatives. Some are funded by the USDA Community Food Projects grant program; others have grown from and are supported by grassroots groups. Community food projects may link individual farms with particular urban constituents. For example, a few Community Supported Agriculture (CSA) farms work with nonprofit organizations to provide farm products to low-income households (Food Bank Farm (Mass.) and Holcomb Farm (Conn.)).

Food Policy Councils are multi-sector, government-sponsored forums that address food system issues, and typically impact low-income families. Local councils were created in Hartford

(Conn.), Syracuse (N.Y.), Holyoke (Mass.), and Portland (Maine). Connecticut has a state-level Food Policy Council. They address a range of topics, from neighborhood farmers markets to public transit connecting shoppers with supermarkets to farmland protection.

Non-governmental, food-focused organizations serve critical organizing and linking functions at all levels of community. The Hartford Food System (Conn.), the Maine Coalition for Food Security, the Northeast Neighborhood Association (Rochester, N.Y.), and a new group, the X-Main Street Corporation in Springfield (Mass.) are examples. At the neighborhood level, the Springfield organization is addressing supermarket retention, community gardening and farmers market development.

Other groups in the NE focus on linking youth education and job skill development with food. The Food Project (Mass.) has national recognition for its powerfully effective programs that engage inner-city youth in food production. Other organizations focus on food-related economic development, such as food processing, food product incubators and micro-enterprise support. The Adirondack Kitchen (N.Y.) is a successful example.

Conclusion

This publication presents a wide range of facts about food production, distribution, and consumption in the NE. Yet, this information conveys only part of the story about where our food comes from, what we eat, and how our region's agriculture can be sustained. To get at the full story, we need to assess the facts as well as "read between the lines" to synthesize the information and draw conclusions about the problems facing our farmers, consumers, and communities. Although the solutions to these problems are as complex as the food system itself, the data in this document may provide an understanding that point us toward some straightforward actions to enhance the sustainability and security of our regional farm and food system.

What Have We Learned?

The data suggests some general conclusions about the NE region's farm and food system:

- The NE region holds a rich diversity of farms, farmers, and farm products, as well as a rich diversity of consumers and consumer demand.
- The NE is a rain-fed region, with diverse typography and soil types that enable production of a wide variety of farm products and many local specialties.
- Our population — its density, diversity, and proximity to agricultural production — poses both a marketing opportunity and a production challenge.
- Our productive land base is threatened by competing uses that drive up land prices and promote conversion of farmland to non-farm uses.
- The region's food system is inextricably linked to the national and global food system. As a result, the NE relies on imported food. Current trends and conditions present barriers to our becoming substantially food self-reliant.
- As the marketing and distribution system consolidates, pressure increases to get bigger, more specialized, and/or more efficient in order to remain competitive.
- The mix of farm products is changing, and *non-food products* (e.g., greenhouse and nursery) are now among the top three cash crops in nearly every NE state.
- While concentration and globalization impact the NE region, we are less impacted by the consolidation trends in the major food commodities than are some other regions of the country.
- Agricultural policy does not support all US regions and all sizes of farms equally; the NE region and small farms are not major beneficiaries of federal programs.
- Access to food, especially fresh foods, is inadequate for certain NE populations, particularly in lower-income urban areas.
- Dietary trends toward fast food, processed food, and low-nutrition foods are having a negative impact on the health of our region's citizens.
- Efforts are underway in the NE to address issues that affect the sustainability of our food system in many areas, including: farmland protection, food insecurity, next-generation farmers, value-added agriculture, rural-urban connections, building local food systems, and resource conservation.

The future of the NE region's farm and food system will be strongly influenced by the larger national and international forces that are shaping food production, distribution, and consumption. The US and global food system is consolidating and integrating at a rapid pace, diminishing the influence of local and regional interests. And while there has been huge public investment in agriculture, for the most part it has not helped rural NE communities or regional agricultural economies remain viable, but rather, it has promoted the centralization of agricultural power and markets. At the same time, across the country, the farm population has been declining while more and more people have little or no exposure to farming.

One of the biggest challenges to enhancing the sustainability of our food system is a citizenry that is largely uninformed about how food is produced, where it comes from, who controls the markets, and why these things matter. Only with pressure from an informed population will policy decisions be made that promote long-term food security, preserve the character and quality of our rural communities, protect natural resources, and encourage the consumption of health-promoting foods.

The issues and decisions affecting the sustainability of agriculture are not unique; they are a subset of those facing society as a whole. Power, profit, self-interest, and tradition are often obstacles to change for the greater public good whether one is talking about education, energy, the environment, health care, or the myriad other areas that affect our quality of life. The food system is a compelling door into much larger questions about choice and control, community and sense of place, equity and justice. We don't presume to answer these large questions, but through our individual work and our collaborative efforts, such as the NESAWG network, we can forge a vision and implement some practical strategies that move us in the right direction.

What Do We Want?

NESAWG members and other food system sustainability advocates in the NE are working in hundreds of ways to make our regional food production, distribution, and consumption more sustainable and secure. Our collective vision is *to build and strengthen local and regional food systems.* Our vision embraces:

- A vibrant, viable, and diverse farming community and support infrastructure
- A well-protected and well-stewarded natural resource base
- Food security for all people
- A citizenry that is informed, caring and involved in the "food system"
- Food-related economic development linking nearby urban and rural communities
- Food production and processing as close to the point of consumption as possible
- High regard for the value of food, and for seasonal, regional, and cultural foods
- Opportunity and fairness for farmers and others that work in the food system

We have abundant opportunities to provide a wide variety of food and other farm products to our large, culturally diverse populations, in ways that also meet other important social, economic, and environmental goals. What follows are specific ideas and strategies to achieve these goals.

How Do We Get There?

Over the past several years, NESAWG members proposed specific areas for action to move us toward our vision. These actions are divided into four categories:

1. **Farm Economic Viability and Food System Economic Development**
2. **Natural Resource Conservation and Enhancement**
3. **Community Food Security**
4. **Food "Citizenship"**

A redefinition of public goals and policies is needed to help us fulfill our vision. Only 3.9% of federal subsidy payments went to NE farmers, and only 2% of federal payments go to farms under 100 acres. Because the NE will never be recognized as a major player in, or recipient of, federal agriculture policy, we have to make an extra effort to make our voices heard. We must make sure that federal policy honors regional diversity and differences, and that the policy playing field is as level as possible. *Federal policies should support farms of all sizes, producing all kinds of products, in all regions.*

State and local policies also must be shaped to foster local and regional food systems. From local bylaws that encourage farm stands to state-level food processing and procurement regulations to

inter-state marketing agreements, public policies can present significant support or obstacles to farmers and consumers in the region. NE policy-makers can provide leadership and innovation in building a regionally-focused food system.

1. Farm Economic Viability and Food System Economic Development

Most NE farmers will say that their biggest challenge is surviving economically. Individual farm businesses must be viable if we are to keep farms on the landscape, and entice new farmers. To a large extent, farm viability depends on forces beyond the control of farmers. Our nation's heavily subsidized farm and cheap food policies hold farmers captive to receipts that are often below the costs of production. As a region, we can build and strengthen "alternative" food systems that are more community-based, reduce food transportation miles, and bring producer and consumer closer together.

Local and regional connections within our food system are key to renewed farm viability and vitality in the NE region. We need to increase the level of regional food self-reliance, while recognizing the real obstacles to achieving complete self-sufficiency.

Direct marketing to consumers is one way for NE farmers to reclaim more of the food dollar, but it is not the only approach to strengthening a local food system, nor does it work for all farms. The NE is a model of direct marketing. For example, the region contains 38% of all CSA farms in the nation, and five of its states are among the top 10 in increases in number of farms using direct marketing. New and innovative methods should be developed and/or encouraged to keep growing this trend.

Direct marketing strategies are especially effective with certain commodities such as greenhouse crops, ornamentals, and fruits and vegetables (produced on 22% of NE farms), and much more challenging with dairy, meat, and poultry products (produced on over 70% of NE farms). Another 11% of NE farms raise grains, which do not as easily lend themselves to direct marketing. Direct marketing is a golden opportunity for the small, highly diversified farm located near high population areas. This type of farm is on the increase in the NE region.

To expand direct marketing opportunities for farms we need to:

- Assist with the establishment of farmers' markets in urban and suburban areas
- Craft local and state regulations that facilitate on-farm marketing
- Invest in buy-local campaigns that identify direct markets to consumers
- Expand links between public food assistance and fresh food at direct markets

Regional wholesale marketing is key to the sustainability of larger farms in the region, and farms that specialize in production of certain commodities. National and international trade will provide market opportunities for some larger NE farms, but it offers few solutions in terms of long-term market security, and it does little to assure profitability of the relatively small farms that typify the NE region. Smaller-scale processing facilities, smaller-scale distribution systems, and policies that encourage local and regional institutional purchasing must be a part of a sustainable food system.

As shown by data from the Jessup and Boston markets, wholesale distribution has been greatly influenced by NAFTA; NE farmers' share has decreased while Mexican and Canadian product share increased at each terminal market. Regional, seasonal products need to be of the highest quality, produced as efficiently as possible if our farmers are to maintain a share of wholesale markets. Product branding and other product and origin identification schemes that enable farmers to maintain an identity in the marketplace and thus greater control of their financial destiny will become increasingly necessary. Keeping regional products competitive will also mean developing more specialty items and the processing infrastructure they require, such as cheese manufacturing, meat slaughtering or grain milling facilities scaled for a specific group of farmers.

Control over farmers' destinys also means addressing the infiltration of concentrated production and distribution, such as in the hog, poultry, and dairy industries. Here, the NE joins with other regions to advocate for increased restrictions and fairer provisions in contract farming, as well as for policies that foster competition and decentralization.

Institutional procurement of local and regional products by schools and colleges, hospitals, correctional facilities, public agencies, hotels and conference centers, and corporate cafeterias offers a great opportunity to enhance agricultural sustainability. In a few NE states, advocates have successfully lobbied to modify state or institution procurement regulations to reward purchase of local products, including apples, milk, and eggs. Nationally, there is increasing attention being paid to farm-to-school programs that can enhance agricultural economic development, improve child nutrition, and enrich the educational curriculum.

Developing and strengthening intra-region markets requires a multi-faceted effort to:

- Encourage production of high-quality branded products with a farm identity
- Promote local and regional purchasing by individuals, agencies, and institutions
- Invest in processing infrastructure appropriate to local and regional farms
- Provide incentives for local and regional agricultural economic development
- Identify the "external costs" avoided by a local and regional food system and direct these savings toward strengthening that system

Non-food commodities figure substantially in the region's agriculture. While *Northeast Farms to Food* focuses on the food system, the data and our analysis include greenhouse and nursery products as well as forest and fiber products. In some states, the horse industry is prominent, and while raising controversy regarding the definition of "agriculture," deserves recognition. The viability of NE agriculture depends on the production, distribution, and consumption of a wide variety of products and land-based services. Purchases of landscape materials for our suburbs and hay for recreational equestrians figure prominently into the economic equation, and are often the first, if not sole connection between urban and suburban dwellers and nearby agriculture.

Agri-tourism is another area of opportunity that stretches the traditional definition of farming but plays an increasingly important role in the economic viability of our region's agriculture. In a region with many urban-rural interfaces, farm-based tourism is a natural way to find mutual benefits in the relationship between producers and consumers living in proximity.

Technical assistance and education are available from many USDA and state agencies, educational institutions, and non-governmental organizations. A significant provider is the region's land grant university system (LGU), where research, education, and extension help shape, but also reflect, farming systems and trends. Over the last few decades, many of the NE's LGUs have experienced substantial resource cutbacks in their agriculture programs, while at the same time being pressured to respond to more urban constituencies. This has direct consequences on their capacity to deliver research, education, and technical assistance to the farming community, and to adapt to emerging trends and engage in creative approaches to sustaining agriculture.

NESAWG has worked with nearly every NE LGU to encourage a more sustainable agriculture agenda, and more accountability to the full range of public stakeholders. NESAWG has also worked *on behalf* of the region's LGUs to advocate for more resources at the state and federal levels; we need to continue to do so. By supporting these institutions' efforts to be responsive, relevant, and accountable, we build partnerships that serve the farming community and the rest of us as well.

In many NE states, departments of agriculture and state and local USDA offices experience similar constraints on resources, negatively impacting the delivery of education and technical assistance to farm operators. Community-based farmer and farmer-support organizations offer a wide range of programs and services, but they too struggle to secure adequate resources.

Farmers must have access to relevant, ongoing education and technical assistance. Bringing increased sophistication to production, marketing, and business management is critical for farm viability. NE farms are particularly complex enterprises. For LGUs and other agencies and organizations to be of use to farmers, the information they offer must be current and appropriate.

With the constraint on resources, and the complexity of the service demands, NE support organizations realize they cannot be all things to all customers. Collaborations and partnerships are much more common than a decade ago, and are increasingly effective in designing and delivering programs and assistance. Yet more needs to be done to foster cooperation, collaboration, and resource-sharing among all the region's agricultural service organizations.

An adequate service infrastructure beyond education and technical assistance is also necessary to farm viability. This is a particular challenge in the NE with respect to lending, financial planning, and legal assistance, for example, where there are fewer and fewer agriculturally focused providers, and where general providers typically are not knowledgeable about agriculture. We need to strengthen the broader agricultural service infrastructure by focusing on partnerships, capacity building, and regional efficiencies, including public and non-governmental organizations.

Linking agriculture and economic development is one way to enhance the investment in farm and food businesses. In most Northeast states, too often agriculture and food-related businesses are not on the economic development "radar screen." NESAWG members are working hard to integrate food and agriculture into economic development departments, plans, and policies at the state and local levels. Federal and state agencies, regional planning associations, community development corporations, and other economic development interests all have a critical role to play in advancing and supporting NE food- and agriculture-based industries. Their engagement is critical if our agriculture is to benefit from public resources as well as private entrepreneurial energies. Economic development includes service infrastructure (e.g., lenders, business, or production consultants) as well as physical infrastructure such as slaughter facilities or year-round public markets. At minimum, the state and federal policy playing fields must be leveled to eliminate the bias toward an industrial food system (large-scale, concentrated, and corporate-controlled) and give equal (if not preferential) support to regionally focused and community-based food system economic development.

Food- and agriculture-focused economic development includes better access to capital and credit, and business assistance through the entire food production, processing, and distribution chain, with a focus on locally- and regionally-based structures. NESAWG members are doing excellent work with "buy local" campaigns, supermarket and restaurant purchase of local products, and institutional procurement of local and regional foods. Agriculture economic development also includes particular attention to municipal regulations that foster, rather than hamper farming, particularly in suburbanizing communities. We need to promote property, income, business, and estate tax policies that recognize farming's unique contributions and challenges.

The next generation of farmers is key to maintaining a viable farm sector. The NE is a national leader in attention to new and beginning farmers, who experience particular challenges in our region in the areas of access to land, credit, and training. We need to sustain and expand ongoing efforts to support the NE's beginning farmers. These efforts include the provision of assistance with acquisition of what is often high-value farmland, help in getting start-up funding, and increasing the availability of technical assistance that is specifically targeted and appropriate to new and beginning farmers.

Farm labor availability, or lack thereof, is an enormous challenge in the NE, despite our large population base. This problem is very difficult to solve, but at minimum, it involves forging alliances among the region's farmers of all sizes and commodities, farm worker and labor organizations, and employment and training programs. Labor issues arise in related food industry and food service sectors as well. It will be necessary to create more meaningful food system jobs and career opportunities in production agriculture as well as in the food processing and distribution sectors. Improving farm profitability can perhaps best increase the quality and desirability of agricultural employment.

Meanwhile, farmers are coping with the shortage of labor in different ways. Most work a grueling number of hours each week, and many rely on family labor to make ends meet. A significant

number of the larger horticultural farms in the NE simply cannot find an adequate supply of local workers, and they have come to depend on foreign workers obtained through the federal H2A program to meet their labor needs. Many small organic farms rely on apprenticeships and internships, often available through nonprofit organizations, for seasonal labor.

Supporting a viable NE farm economy requires:

- Adequate, responsive farm support services
- Integrating agriculture and economic development
- Attention to the needs of next generation of farmers
- Regulations and programs that enhance availability of farm labor

2. Natural Resource Conservation and Enhancement

A secure and sustainable regional food system for the NE depends on maintaining the productive capacity of our natural resource base. Yet, our prime and locally important soils are disappearing to development in the NE faster than in other regions. With 30% of the nation's consumers living in the NE region and only 4.2 % of the nation's cropland, slowing the loss of farmland is imperative if we are to strengthen regional production to serve these consumers.

Farmland protection efforts are well developed in the NE, where we have some of the oldest and most successful public purchase of development rights programs in the country. We need to continue to advocate for state and federal programs that fund conservation easements, while advancing other innovative strategies to protect our productive lands. With more land trusts than any other US region, we have a huge opportunity to engage private conservation interests as partners in farmland protection. Many land trusts and other conservation and environmental groups are newly interested in farms and farmland, as agriculture's multiple benefits are more widely recognized. However, it is increasingly recognized that protecting the land does not necessarily protect the farmer or assure that the land is farmed. Farmland protection must be accompanied by efforts to promote farm profitability, foster supportive communities, and keep the land in active agriculture.

"Multifunctionality" in agriculture recognizes that benefits other than food or fiber can come from farming. Many of these benefits typically are not recognized in the marketplace and/or are not directly attributed to the working landscape. These include natural resource and environmental benefits such as open space, recreation, tourism, scenic amenity, biodiversity, wildlife habitat, bio-energy, clean air, and clean water. Other benefits are more socially oriented, such as community vitality, quality of life, etc. These multiple benefits, sometimes referred to as "multifunctional agriculture," are more deeply integrated into public policy in Europe than in the US.

In the NE, we have the opportunity provide leadership in communicating about the multiple benefits of farming with the non-farming public. Our challenge is to more fully reconcile and integrate environmental and production goals so that they are framed as win-win solutions rather than as conflicts. This will involve continuing work by NESAWG and its member groups to bring agriculture, food, environmental, and community development interests together.

Growth management is critical in the NE with our rapidly urbanizing landscape and high land values. The NE has taken the lead in addressing "smart growth" and sprawl. Several NESAWG projects have promoted the connection between growth management and agriculture by demonstrating that a vital agriculture is one of the best protections against sprawl. People concerned about sprawl are often the first to embrace the multiple benefits framework for linking agriculture and smart growth. We must continue to capitalize on the attention being paid to sprawl and smart growth by advocating for integrated and innovative land-use policy at all levels.

Natural resource stewardship addresses how soil, water, and wildlife are managed on farms, and clearly this is vitally important to sustainability. Historically, NE citizens have been among the national leaders in the environmental movement, focusing on clean air and water, biodiversity and species conservation, and protection of special natural places. Farmers, too, have a tradition of environmental stewardship. This tradition is sometimes challenged by the economic pressure to achieve maximum rather than optimum levels of

production, or to adopt technologies that are developed and promoted with corporate rather than public interest in mind. Farmers who are making a decent living are the most likely to have the time, the incentive, and the tools to properly care for natural resources.

In the last decade, attention within the environmental movement has turned to agriculture as a source of "non-point" water pollution (pollution that does not come directly from a specific source like a pipe). While the NE as a region is a relatively low contributor to non-point pollution from agriculture compared to other regions, the close proximity of our farm operations to development, wetlands, and water supplies makes farm-originated pollution from excess nutrients, pesticides, bacteria, and other toxics a real concern. In that same decade, the number of NE acres sprayed with pesticides has been reduced by only 2.5%. Pesticide use remains a concern in the NE. We need to promote economically viable strategies for producers to reduce their reliance on potentially harmful inputs. Efforts to promote farm conservation planning, Integrated Pest Management (IPM), and organic farming, and to link these practices to premiums in the marketplace, need ongoing support.

Management of livestock waste, another potential pollutant, is being aggressively addressed at the federal level, and by several NE states through regulatory and incentive programs. Other resource conservation concerns include soil loss and soil quality, habitat and species diversity, and forest integrity. Many of the best practices to address these resource management issues are longer term, rather than quick fixes.

Land tenure arrangements that foster longer-term stewardship are especially important. With the NE's high land prices and high property taxes, NE farmers are more vulnerable to the "impermanence syndrome" — they are less likely to make stewardship investments when there is no security on the land. In particular, much of the land used by large livestock-based farms is rented, and the investment needed for certain livestock waste management systems is significant. The best soil for more intensive farming, such as for fruit and vegetable crops, is also most susceptible to development and to escalated agricultural rent values. Linking secure tenure with stewardship practices provides another "win-win" solution for the region's farmers and its non-farming landowners and managers. Alternative land tenure is a priority issue for several NESAWG members, and innovative models are currently under development.

Flexible approaches to conservation are needed in the NE region. Clearly, federal programs designed for the midwest are not necessarily successful here. Programs which recognize regional differences and benefit all farmers regardless of their farm size or the commodities they produce, are more likely to attract NE farmers. The Conservation Security Program in the 2002 Farm Bill is an example of this approach. Typically, federal research programs are not designed to address regional differences, and as a result, tend to favor larger-scale, higher tech, industrial practices more prevalent in other regions. A notable exception is the USDA Sustainable Agriculture Research and Education (SARE) Program which operates regionally. The NE SARE Program is extremely effective in fostering region-focused approaches to on-farm resource stewardship.

States have an important role to play in resource protection, and are better able to address local characteristics and needs. The challenge in many NE states, where policy makers and the public they represent are not familiar with agriculture, is to craft resource protection policies to help farmers address these concerns in ways that do not threaten farm viability. Education, dialogue, and innovation are key here.

Linking "local" and "sustainable" in public policy, marketing efforts, and consumer education is needed to enhance the region's farm and food security. Sustaining of natural resources cannot be de-coupled from a local and regional food security if the region's agriculture is to be maintained. For over two decades, NE farm and food activists have labored over the question whether a local "conventional" tomato (from a family farm?) was "better" than an organic apple or tomato from (a multi-national corporate farm?) thousands of miles away. Rather than settle for a superficial answer, we recognize there is complexity inherent in sustainability, and the need to promote dialogue rather than succumb to ideology.

Maintaining and enhancing our productive resource base will require:

- Linking farmland protection, "multifunctionality," and growth management
- Investing in regulations, incentives, and research that promote stewardship.
- Fostering secure and affordable tenure on NE farmland
- Encouraging marketplace recognition for good stewardship

3. Community Food Security

Traditional definitions of food security focus on the extent to which people have physical and economic access to sufficient food to meet their dietary needs. The data in *Northeast Farms to Food* show that 6-10% of the population in every NE state suffers from food insecurity. Reducing these numbers is an obvious priority. While rooted in poverty, there are a variety of factors contributing to food insecurity at all levels.

The concept of community food security (CFS) goes beyond the issues of hunger and poverty. It emphasizes community-based (rather than individual and family-based) solutions to the problems of food access, nutrition, and hunger. CFS embraces a systems approach that synthesizes disparate fields, from nutrition to public health to community economic development. It addresses the qualitative as well as quantitative aspects of diet, such as the nutritional content, safety, and cultural appropriateness of food. As a new movement, CFS focuses primarily on urban settings and on lower-income consumers, but stresses links with producers, rural communities, and the environment.

Community food security also implies a secure, safe, and stable food supply for all citizens. The concept of "security" has been dramatically amplified since September 11, 2001. Some federal officials advocate for "food security" via an *increasingly centralized* food system that can be monitored and guarded. CFS and regional food system advocates will argue that a *decentralized food system offers more long term security*, as well as other benefits, for everyone. However, we recognize that we will always depend to a certain extent on a multi-national food system.

As a region, we will in all likelihood never be *self-sufficient*, whereby our food and fiber production meets all the consumption needs of the population. But we can shape policy and habit to shift the balance toward increasing our agricultural self-reliance. In one study (Holm, et al. 2000) of the New England region, it was concluded that certain New England states can be self-sufficient in some commodities, notably eggs, seafood, dairy, and vegetables, but none of the six states would ever be self-sufficient in meat, poultry, or fruits. Although not included in the study, the same is likely true for grains and oils. But, each sub-region, and the NE as a whole, could *produce more* of its own food needs in particular commodities, and *market more* of those food products within the region.

The goal is to increase our food self-reliance. The goal is not food self-sufficiency, but a food-based economic development framework that maximizes production and consumption close to home. We need more research and public policy reform to reach this goal in the context of an increasingly global food system.

The current framework of CFS is gaining legitimacy and visibility; the USDA Community Food Projects grant program exists because of CFS advocates, and the NE dominates in the prevalence of community food projects. We need to continue to develop public awareness about CFS as we become more sophisticated in its application. One of the pivotal dynamics in the CFS model is between producers and lower-income consumers whose values and goals regarding food access and a livable wage may be harmonious, but who come down on opposite sides regarding the price paid for food. NE CFS advocates are seeking ways to link producers and consumers in ways that address the needs of both. They are developing inner-city markets and neighborhood farm stands for local farmers. They are working with institutions that assist low-income people. They are promoting nutrition education using fresh, local products.

Other systems-oriented solutions include: improving transportation for urban residents to purchase food; establishing food-buying clubs and coops; and promoting policies that keep or bring grocery stores and supermarkets to urban centers. The Farmers Market Nutrition

Program was born in the NE, and it, along with its spin-off, the Senior FMNP, are examples of very successful initiatives that make fresh, local products available to lower-income residents.

When NESAWG members launched the investigation that led to this publication, we wanted to find out where our food is coming from. We still don't have the answer. But based on the data, we can offer an analysis and a vision that link increasing food self-reliance with community-based economic development and food-related social and environmental issues. The concept of a *foodshed* (Kloppenberg, et al. 1996) helps to frame this vision. We need to more fully understand the economic and other factors that guide the movement of foods to and from and within our region. Then we can raise the sophistication of our advocacy and our interventions.

Urban food production is receiving increasing attention, as community gardens spread, and more inner-city growers engage in micro-scale commercial food production. There are several leading examples in the NE, particularly focusing on ethnic and immigrant farmers who bring native knowledge and culturally specific crops to our NE agricultural melting pot. Yet, threats to the long-term security of urban food gardens exist, and the barriers to their creation — from soil contamination to water access to red tape — are formidable. Urban food production contributes to people's food self-reliance, provides some food-based commercial activity, and fosters food awareness and community. With our substantial urban populations, we have a real opportunity to demonstrate that urban agriculture has a place in our community and regional food production system.

The community food security and sustainable agriculture are companion "movements." One has primarily an urban and consumer orientation; the other derives more from rural and producer concerns, but their respective visions intersect and ultimately merge. In the NE, where both movements are strong, we have benefited from building linkages among all sectors which both movements stress, thereby advancing our collective, overarching food-system change agenda.

To achieve greater community food security, we need to:

- Embrace a systems approach that includes nutrition, diet, and food safety
- Link urban and rural communities to enhance food self-reliance
- Improve food access for all citizens
- Promote urban agriculture and community gardening

4. Food "Citizenship"

Consumer awareness and education are vital to the future of farming in the NE region. We want consumers — many millions in the NE — to make more sustainable and healthier food choices by purchasing more local and regional foods. At the supermarket, if local and regional products aren't there, we want people to ask for them. In season, we want people to patronize farmers markets, farm stands, and CSA farms. These purchasing behaviors are necessary to strengthen the market for regional farm products. To shape consumer behavior, NE food system advocates implement "buy local" campaigns, disseminate promotional materials, and try to connect consumers with producers in the marketplace. People need to understand that, knowingly or not, they are voting with their food dollars for the kind of food system we have, the type of landscape we see, and the health of our rural communities.

Food labeling is a hot topic, regionally as well as nationally. In addition to the geographic origin of food, many other factors can influence consumer food-buying decisions, such as how the food is grown or raised. Increasing numbers of consumers are concerned about food safety and food quality, pesticide residues, genetically modified foods, and humane treatment of livestock. Some people incorporate social justice issues (such as fair-trade coffee) into their food-buying decisions.

In the NE we have the opportunity to engage a large consumer audience that already has an elevated awareness about food issues. The companion challenge is to reach millions more for whom these considerations feel contrary to their self-interest (i.e. cost, convenience, taste, familiarity, culture). It is important to recognize that a shift in purchasing behaviors by just a small fraction of the

population can have an enormous impact on our region's agriculture. We don't need to "convert" everyone's eating habits.

The trend toward fast foods and diets high in processed food, fat, and sugar is having dire consequences on human health nationwide. We need to stress the connections among diet, nutrition, health, fresh food, and home cooking. Only an aggressive educational campaign can reshape the unhealthy eating habits of our citizenry and begin to counter the effects of industry advertising on food choices. It won't be easy or quick work to shift consumers' concept of food self-interest and thus change their food buying habits. To do so will require capitalizing on the win-win opportunities to connect consumption of fresh, unprocessed, local and seasonal foods with health through nutrition education, school meal programs, and public assistance efforts.

"Food citizenship" frames the relationship between people and their food in a broader context — beyond consumer behavior. People make food-buying decisions, but also they vote, create municipal plans and regulations, pay taxes, practice religion, travel and recreate, and teach children. An enduring, sustainable, and secure food system for the NE will depend on the evolution of behaviors and attitudes *beyond* just changing purchasing habits, to a more inclusive set of behaviors and actions that promote farm and food system viability. Promoting "ag literacy" is a part of the strategy. This means educating everyone about where their food comes from and why it matters.

School settings are arguably the first place to start building food citizenship. Agriculture and food issues can be incorporated into curricula at all levels, including experiential opportunities such as visiting farms, growing school gardens, and cooking with fresh local food. As important are attitude and value messages about food, and farming. In one NE state, it was observed that teachers were actively discouraging their vocational agriculture students from considering production agriculture careers. In another setting, a child from a farming family was picked on in school until her family was featured in a newspaper ad celebrating local farms.

These value and attitude messages extend beyond school. How many parents (and others) express annoyance when "caught" behind a slow-moving tractor on a country road? How many people vote for local or state bond issues to preserve a farm or farmland? Which conservation commissioners and town planners support regulations that allow, if not foster, agricultural activities? Supporting local and regional agriculture means creating food citizens who support local and regional food systems with their dollars, votes, lifestyle choices, and their personal and family attitudes.

NE food and farm advocates need to foster food citizenship by creating positive images of our regional food supply and the multiple benefits of agriculture. Working with various media outlets, we need to create and disseminate information and images about what a regionally strengthened, sustainable food system looks like and *all the reasons why it's important.*

Faith-based communities are currently under-represented in food and farm advocacy circles in the NE. Some may be involved in hunger relief work, or in broad social justice projects, but few grapple directly with farming, likely for the same reasons that the population in general is not directly engaged. However, there is enormous untapped opportunity to build food system awareness and make the links within NE faith communities. At the national level, the National Catholic Rural Life Conference's "Eating is a Moral Act" campaign is an example of how one denomination is tackling the subject. At a local level, some churches and mosques use their parking lots for farm markets, and several have food study circles.

To achieve "food citizenship," we need to:

- Build consumer awareness and understanding of farming and the food system
- Promote relationships that foster local and regional food purchasing
- Encourage behavior beyond food buying that supports local agriculture
- Promote "agricultural literacy" in schools and other settings
- Recruit more people and new groups to work toward our vision

* *

Different people come in through different doors to the "sustainable food systems movement": environmental, community development, nutrition, open space, hunger, social justice, religious, education, health, family farming, sustainability, food security, anti-globalization, cultural preservation, animal welfare, food safety, recreation, land-use planning, and gardening. With our rich diversity of population, we have a tremendous opportunity to attract citizens through any door, and then capture their attention and inspire their action toward a sustainable, secure, and just food system for the Northeast.

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White Papers

In 1998, about two-dozen Northeast food system leaders were invited to write short "think pieces" about the NE food system, from their perspective. This collection of White Papers was the subject of workshop discussions at NESAWG's annual meeting, and has been published and distributed since then. In 2000, the authors had the opportunity to update their papers. These papers and the ensuing discussion, created the framework for the NE Farms to Food investigation. It is with gratitude and appreciation to these authors for their good minds and dedication that we note their contributions here.

Each piece is available on-line, via the NESAWG website (www.smallfarm.org/nesawg/nesawg.html)

There are also several other papers by NESAWG members available at this website. We invite you to visit the website and see what your NE food system colleagues have to say. We also welcome new papers to the collection. If you have a paper you would like to contribute, contact NESAWG (nesawg@smallfarm.org).

Consumption Issues and Barriers
Joan Dye Gussow, Professor Emeritus
Columbia University Teachers College (N.Y.)
What would a "sustainable and secure" food system look like from the perspective of consumption? Gussow proposes some ideas about what consumers need to do differently, and how to create local demand for agricultural products.

Farm Profitability vs. Consumer Affordability
Tracy Frisch
Regional Food and Farm Project (N.Y.)
In some circles there is a perceived tension between the farmers' quests for a decent return on their labor and investment, and consumers' desire for affordable food. Frisch discusses some of the influences on the profitability of NE farms and proposes a framework that politically links farmers and low-income consumers.

Niche vs. Mainstream Markets: The Role of Industrialization in the Agricultural Production Sector
Stewart Smith
University of Maine
Alternatives to the industrial model and increasing technological solutions require farmers to take an integrated farming approach. Smith stresses diversification in production and marketing and a public policy and research agenda that promotes integrated systems.

Distribution: the Forgotten "P"
Michael Rozyne
Red Tomato (Mass.)
Distribution is everything involved in physically getting product in front of the customer. Rozyne argues that without effective distribution systems, promotion of local and regional products is inadequate. He discusses warehousing, transportation, quality control, and customer service as equally important to "getting the message out."

A Sustainable and Secure Food System
David Holm
Farmer, NE SARE Program and Ph.D., University of Mass.
A concise reflection on some social and historical roots of the connection between people and their food.

The Failure of the Food System in Distributing Food to Communities
Duane Perry
Farmers Market Trust (now The Food Trust) (Pa.)
Our current food system fails to distribute food equitably, particularly to inner-city communities. Perry examines the roles of government and private enterprise and proposes some solutions.

Paradise Paved

Julia Freedgood
American Farmland Trust (Mass.)

A sustainable food system is built on a sound agricultural economy and infrastructure, as well as a stable and accessible land base. Freedgood makes a connection between sustainable agriculture and sustainable development, and proposes a set of locally-based recommendations.

What Contemporary "Metropolitan Agriculture" Tells Us About the Region's Food System Potential

Mark Lapping
University of Southern Maine

Lapping describes trends and characteristics of urban-fringe agriculture and the promise it holds for offering multiple benefits in addition to production food and fiber products. However, public policy must address several key challenges for metro-agriculture to thrive.

On Reaching a Sustainable Food Production System in the Northeast US — A Farmer's View

Shane LaBrake
Accokeek Foundation Ecosystem Farm (Md.)

LaBrake focuses his attention on the future of our food production system — examining the land, capital, market and support requirements for new farmers.

Regionalism to Nationalism…and Back?

Kate Clancy
Wallace Institute for Alternative Agriculture
(now at Winrock, International) (Md.)

The switch from a regional to national food system occurred 150 years ago. Clancy advocates systems thinking as well as reflection on food self-reliance and re-regionalization.

Northeast Food System Analysis

Elizabeth Henderson
Farmer-writer (N.Y.)

Following her analysis from a farmer's point of view, Henderson offers a vision and set of strategies for change in the NE.

Creating a Sustainable, Regional Food System — What is Helping Us, What is Preventing Us?

Peter Mann
World Hunger Year (N.Y.)

A reflection on the forces that attract people to local food, including a sense of place, connection, and spirituality.

Local Solutions to Economic Globalization: Remaking the Agricultural and Food System in the Northeast

Tom Lyson
Farming Alternatives Program (now Community, Food and Agriculture), Cornell University (N.Y.)

Lyson sets the global context and provides evidence of "relocalization", along with some practical steps to foster local and regional agriculture.

Farmworkers Within the Framework of a Sustainable Agriculture

Richard Mandelbaum
CATA (N.J.)

A cogent description of farmworker exploitation and suggestions for alliances among farmers, farmworkers, and others to address true food system sustainability.

Redefining Community Food Security

Hugh Joseph
Tufts University (Mass.)

A comprehensive discussion of the concept and practice of community food security.

Digging Deeper: Can We Have a Sustainable Agriculture Without a Sustainable Socio-Economic System?

Fred Magdoff
University of Vermont

Magdoff examines current trends in the US agri-food system and dominant farmer survival strategies. True solutions, he argues, are found in a sustainable socio-economic system that underlies a sustainable agriculture.

Getting Organized

Kathy Ruhf
NESAWG

Ruhf focuses on the elements of organizing for change: building networks and bridges among sectors and concepts. Social change relies on a division of labor among "builders, warriors, and weavers."

Consumer Education vs. Marketing: Which is the Best Lever for Food System Change?

Molly Anderson
Tufts University (Mass.)

Consumer education and marketing are and must be interwoven Anderson analyzes current thinking about consumer education and advocates for a shift to food "citizen" education.

The Human as Small Farmer: The Restoration of Humankind's Vocation and the Affects of Cultural and Spiritual Values on Work, Community, and Regional Food Systems

Sam Smith
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Smith articulates the complementary importance and interplay between religion and a sustainable, secure food system.

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