

REVITALIZING FARMLAND IN MASSACHUSETTS:
AN ANALYSIS OF THE DEVELOPMENT RIGHTS PROGRAM

by

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ABSTRACT

State governments such as Massachusetts that seek to preserve and revitalize agriculture have a multitude of national and regional constraints to overcome to effectively reach this objective. How effective has the Massachusetts' Agricultural Preservation Restriction Program, the backbone of the Commonwealth's agricultural preservation effort been at preserving and revitalizing agriculture?

Using the program's objectives, and goals, and accounting for political and economic constraints we conclude the program has been successful. It has created an affordable land market for farmers, spurred re-investment in protected farms, and distributed benefits fairly and wisely. However the program has tended to attract farmers at the margins of economic profitability. It has bought some time and the opportunity to make agriculture viable in Massachusetts. Agricultural viability will only come with the restructuring of the economics of farming in Massachusetts and the northeastern United States.

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The heart of this research, and the significance it has is due to the many score of Massachusetts farmers who answered questions, and in most cases shared themselves, and their world. I hope I've justified their trust. Form, content, concepts, organization, writing, and editing were all greatly improved through the generous and caring efforts of Phil Herr, and Susan Sklar. Walter Dickinson, and Mel King, two people who have influenced me greatly were critical readers who both improved this paper, and my understanding of farmland preservation.

CHAPTER ONE

PRESERVING LOCAL AGRICULTURE:

THE BUCZALA, BRESSE, AND BOURGESI FARMS

It's a warm April day and I'm speaking with George Buczala because his farm is part of the Agricultural Preservation Restriction program (APR) the major Massachusetts program to preserve farmland. Somehow we're off discussing Mr. Buczala's life in farming, the trends in U.S. agriculture, the future of dairying, and everything but the APR program. Maybe, I decide, as I take in the beauties of Mr. Buczala's Connecticut Valley farm, you need to discuss why preserve local and regional agriculture at all before describing, analyzing, and generally pontificating about agricultural preservation. But as I try to steer Mr. Buczala back toward the question of "why", I realize that for him it's not a matter for discussion. He has lived on farms all of his life from his childhood on his father's tobacco/potato/dairy farm to his adult and senior years on his own dairy farm. If George Buczala does not easily discuss the existence of Massachusetts agriculture in theory, it's because working the land has been his life.

My goal here in discussing the reasons to preserve agriculture is to focus on non-economic and powerful reasons to preserve agriculture that connect with other important political and spiritual questions. Farmland preservation has received support both in Massachusetts, and in other states for what I believe are two fundamental reasons.

First, food is survival. We may trust "the market" to

get us typewriters, cars, and computers, but it rubs our instinct wrong to lose all semblance of food self sufficiency. The logic of the market (cheap oil, large capital, tax policy) dictates that 90% of our food "should" be grown in distant places such as Florida and California. As this food dependence is relatively recent, (post World War II) citizens need to be made aware of this situation so that they can decide if they are comfortable with the loss of food production capability in the Northeast. Many will not be and will support programs that aid local farmers and provide food insurance.

The second reason for supporting farmland preservation is that people are concerned with maintaining a connection to the past, when human activity, and land itself were not bought and sold as commodities. By doing this we are creating a future in which land and labor will not be treated as commodities. Karl Polyani, an Austrian economist traces the rise of the industrial capitalist system and its ideology of the "free market" in his classic book The Great Transformation.

But labor, land, and money are obviously not commodities; the postulate that anything that is bought and sold must have been produced for sale is emphatically untrue in regard to them. In other words according to the empirical definition of a commodity they are not commodities. Labor is only another name for a human activity which goes with life itself, which in its turn is not produced for sale but for entirely different reasons, nor can that activity be detached from the rest of life, be stored or mobilized; land is only another name for nature, which is not produced by man...1

Polyani goes on to discuss land specifically:

The economic function is but one of many vital functions of land. It invests man's life with stability; it is the site of his habitation; it is a condition of

his physical safety; it is the landscape and the seasons. We might as well imagine his being born without hands and feet as carrying on his life without land.²

The farmer represents our social yearning to reach back to, (and break through to) a time when human labor and nature itself were not primarily treated as commodities. He does not punch in the clock at eight o'clock and leave at five. He uses skill and endeavor to interact with a force more powerful than humans: nature. As such, the farmer stands as one of our strongest symbols of free and creative labor. By retaining agriculture in our region and state we are doing more than creating a series of economically beneficial reactions. We are preserving our connection with nature, and our past; we are creating a future in which land and labor will be respected for their inherent value.

George Buczala is happy that his farm is part of the Agricultural Preservation Restriction program. Under the program farms sell the state of Massachusetts their "development rights" or literally their legal right to sell their land for real estate development. The 135 acre Buczala dairy farm is quite productive. It is located in the Connecticut River Valley, the area with the best farmland in Massachusetts--which is why the state was interested in the farm. Mr. Buczala wanted to be on the program because the land would be permanently saved and he would get a significant amount of money. Using appraisal methods Mr. Buczala's development rights were valued at \$125,000 (\$925 per acre), and on May 4, 1983, they were purchased for this amount.³

Three years later the farm is as the Buczala's say "still

there" but is in a difficult financial situation through no fault of the family's. Its problems have to do with the national milk market, and its distressed long term trends of overproduction and low prices. George Buczala's son Linwood is already a 50% owner in the farm and wants to continue farming, but is discouraged by the long hours, constant work (365 days a year) and extremely low returns. The Buczala's are hoping that diversification to other farming activities will help. Despite the major financial problems in the dairy market they are trying to keep farming.

The Bresse farm in southeastern Massachusetts, one of the last farms left in Raynham, is also on the APR program. John Bresse is in his mid eighties. He and his wife Winifred retired from the dairy business in 1974. In December of 1982 the Bresse's sold the development rights on their 64 acres to the state for \$55,175 (\$860 per acre).⁴ The land is being maintained, but is not very productive, because Mr. Bresse has not put fertilizer on his hayfields for eleven years. The Bresse's are glad their land is not going to end up in houselots, since they have owned the farm for over fifty years. The Bresse's want the land to end up in the hands of an active farmer. Although there are a few market gardeners interested in parcels of the land, it is unclear what will happen to the farm. The agricultural preservation restricts development and requires an agricultural use; it can't ensure that farms like the Bresse's won't end up as the playtoy of a "gentleman farmer".

The Bourgesi farm in northeastern Massachusetts--

Metheun--is also an APR farm, but is quite different than either the Buczala or Bresse farms. Salvatore Bourgesi in his mid sixties is in the process of turning his vegetable farm over to his son. He sold development rights on his 54 acres to the Commonwealth for \$509,000 (\$9,425 per acre) in September of 1981.⁵ The Bourgesi's and their eighteen employees grow eggplants, peppers, tomatoes, zucchini, cabbage, and cucumbers in large quantities. The farm is one of the most productive on the program, and ranks with a handful of vegetable farms in the state. Mr Bourgesi usually produces 50,000 bushels of vegetables a season. Roughly speaking that is 1,650,000 pounds of produce!

Mr. Bourgesi too is a supporter of the APR program, and is basically satisfied that he sold his development rights to the state. He reinvested the \$509,000 he received in a variety of ways to improve the farm. This included buying four new tractors, building a packing house, buying an electric jack, and perhaps most importantly buying his brother's share of the farm. Despite the \$10,000 per acre received for the development rights to his land, Mr. Bourgesi feels he should have been paid more. He believes that the market price was closer to \$15,000 per acre when he sold to the state. If he could sell that land development today he believes the price would be about \$50,000 per acre. This is five times the maximum the state has paid (on a per acre basis) for any land on the APR program.

The varying circumstances between the Buczala, Bresse, and Bourgesi farms raise many questions about the APR program and

state policy to preserve agriculture. To evaluate how effectively the APR program has preserved farmland and revitalized agriculture in Massachusetts requires looking at state agricultural decline in its geographical and historical context (Chapter Two), and understanding some of the agricultural preservation programs available to state governments (Chapter Three). In Chapter Four we examine the APR program's objectives, and dilemmas it faces in striving to reach them. Chapter Five is an in depth look at key measures to see how well the APR program has reached its goals, we particularly focus on measures for economic viability of preserved farms. Finally our conclusion ties together this work with larger political questions on agricultural preservation developed in this chapter.

My perspective is shaped by four years spent at a food cooperative wholesaler working directly with farmers and learning how the marketing system works against the interests of family farmers. Having the opportunity to work for the Massachusetts Department of Agriculture, visit the farms on the APR program and meet the growers last summer laid the basis for this paper.

CHAPTER TWO

MASSACHUSETTS AGRICULTURE IN REGIONAL PERSPECTIVE

The Bourgesi, Bresse, and Buczala farms are all on the Massachusetts Agricultural Preservation Restriction program which has the objective of preserving farmland. This program was legislated in the late 1970's to counter the decline of farming in the state, and the conversion of farmland to other uses. Other states in the Northeastern United States also experienced this loss of farms, and farmland, and also adopted policies to preserve their agricultural bases. The problem of agricultural decline in Massachusetts is best seen in this context of the overall agricultural decline in the Northeast. Ultimately, solutions to this agricultural decline will need to improve the economics of farming for Northeastern growers.

The Northeastern United States includes all six New England states (Vermont, New Hampshire, Maine, Massachusetts, Rhode Island, and Connecticut), as well as the Mid-Atlantic states of New York, Pennsylvania, New Jersey, and Delaware. What does it mean to say that the Northeastern states have a common regional role in the U.S. agricultural economy, and that their efforts to preserve agriculture should be seen regionally? The area has a common history and geography. All of these states are contiguous. Furthermore they share a common soil base and climate. The common history of the Northeastern states includes early European settlement, heavy urbanization during the nineteenth century, and suburbanization during the twentieth century.

Early settlement in the Northeast in colonial days and the westward expansion of the U.S. has made the decline of agriculture a common regional experience. Farmers have moved for better farming opportunities for many generations. The Midwest offered these opportunities because of its abundance of fertile land. For over one hundred years the region has been in agricultural decline. That is, 1880 was the census year in which the region peaked in terms of the number of farms, the total land area in farms, and the percentage of land area in farms. Not only was 1880 the peak of agricultural activity for the region as a whole, it was the peak year for most of these states. Table I and Table II illustrate this. What's significant is that each of these states are affected by the same national and international influences as far as the structure and viability of their agricultural sector. By 1880 the region had seen the absolute peak in agricultural activity because the Midwest had a regional advantage in availability and fertility of land.

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TABLE I THOUSANDS OF FARMS IN NORTHEASTERN STATES 1850-1982

<u>STATE</u>	<u>1850</u>	<u>1880</u>	<u>1910</u>	<u>1940</u>	<u>1982</u>
Maine	46.8	64.3	60.0	39.0	7.0
New Hampshire	29.2	32.2	27.1	16.6	2.8
Vermont	29.8	35.5	32.7	23.6	6.3
Massachusetts	34.1	38.4	36.9	31.9	5.4
Rhode Island	5.4	6.2	5.3	3.0	.7
Connecticut	22.4	30.6	26.8	21.2	3.8
New York	170.6	241.1	215.6	153.2	42.2
New Jersey	23.9	34.3	33.5	25.8	8.3
Pennsylvania	127.6	213.5	219.3	169.0	55.6
Delaware	6.1	8.7	10.8	9.0	3.3
<u>Ten States</u>	<u>495.8</u>	<u>704.9</u>	<u>668.0</u>	<u>492.3</u>	<u>135.4</u>

Source: U.S.Census of Agriculture and Mark Lapping

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TABLE II TOTAL LAND (MILLIONS OF ACRES) TEN STATES 1850-1982

<u>STATE</u>	<u>1850</u>	<u>1880</u>	<u>1910</u>	<u>1940</u>	<u>1982</u>
Maine	4.5	6.5	6.3	4.2	1.5
New Hampshire	3.4	3.7	3.3	1.8	.5
Vermont	4.1	4.9	4.7	3.7	1.6
Massachusetts	3.4	3.4	2.9	1.9	.6
Rhode Island	.6	.3	.4	.2	.1
Connecticut	2.4	2.5	2.2	1.5	.4
New York	19.1	23.8	22.0	17.2	9.2
New Jersey	2.7	2.9	2.6	1.9	.9
Pennsylvania	14.9	19.8	18.6	14.6	8.3
Delaware	1.0	1.1	1.0	.9	.7
<u>Ten States</u>	<u>56.1</u>	<u>69.1</u>	<u>64.0</u>	<u>47.9</u>	<u>23.8</u>

The post World War II period was a time of major economic expansion, and restructuring of the American economy. The food system was an integral part of that change, and Northeastern agriculture and Massachusetts' agriculture were dramatically affected by these changes. Precipitous decline in agriculture occurred in all Northeastern states after World War II. These declines were due-- among other reasons-- to the creation of the interstate highway system, the wide use of refrigerated tractor trailers, and the integration of regional food distribution systems into a national food distribution system. Between 1940 and 1974 the number of farms in the ten Northeastern states decreased by 73% from 492,300 to 130,000. The decline in Massachusetts was more extreme. In 1940 there were 31,900 farms, by 1974 there

were only 4,500 farms in the state, a decline of 86%. Loss of farmland to other uses (suburban conversion) shows the same trend. The ten Northeastern states lost 49% of their farmland acreage between 1940 and 1974 from 47.9 million acres to 24 million acres. Massachusetts lost 68% of its farmland acreage in those years declining from 1.9 million acres to .6 million acres.

Why this dramatic decline in agriculture? Part of the answer is the economic changes in the food business itself. The major change was in the increasing integration of regional markets into one national market. In the fresh produce sector for example, Northeastern farmers had supplied a large part of the region's needs. However, post war transportation improvements led to increased food production in distant states such as Florida and California. These areas also had advantages because of their larger farm size, and much longer growing season. A key part of the creation of a national market involved centralization in the retail food business. In the postwar years "super" markets grew rapidly and forced independent stores out of business. As larger businesses than independent stores they had more incentive to buy from large commercial brokers who could sell them standardized food products for more months of the year. The domination of a few supermarket chains in each region was part of the creation of a national market, as was the domination of production by large Western farms. Monopolization in production and monopolization in distribution were mutually reinforcing.

These developments had a major negative impact on the

economic viability of Northeastern farms. The growth of out of region agriculture was not simply the working of an unfettered, natural market. Out of region farms were larger and in some ways more efficient than regional farms. But they enjoyed some "unfair" advantages including government subsidization of the highway system, unfair access of large farms to water rights, and tax policy that rewarded investment for "tax shelter". In addition to this, Northeastern farmers did not control the regional marketing system. Major Northeastern terminal markets (such as Chelsea Market, and Hunts Point) and chain supermarkets began to sell produce that the agribusiness farms were best at growing; uniformly packed, graded products with brand name appeal due to advertising. If local farmers had influenced the marketing system to sell what they were best at growing; fresh, tasty, and diverse foods, while moderating standardization the health of Northeastern agriculture could be dramatically different today.

Another important post World War II change was suburbanization. Suburbs grew rapidly after the war in large part because of government land use and financial policies (such as subsidized mortgages for homebuyers). Suburbs in the United States grew at low densities and were based on auto use. This suburbanization in conjunction with the economic decline of farming led to the conversion of farms to housing and other forms of spread development.⁶ Land use policy that discouraged spread and preserved farmland and other valuable land would have helped maintain a solid agricultural base in the Northeast, while meeting housing needs.

The cumulative effect of these trends was the precipitous decline of farming in the Northeast. The affected states began to react to this crisis in their agricultural sector. Farmland preservation programs are being enacted or seriously discussed in almost every Northeastern state. Farmland use value assessment and agricultural districting--two of the most used agricultural preservation strategies--have been initiated in Maryland and New York.⁷ We will focus on the Massachusetts program for purchase of development rights, an expensive, and potentially powerful preservation strategy which with one exception has only been enacted by states in the Northeast. Within this region Maryland, New Jersey, Massachusetts, Connecticut, New Hampshire, and Rhode Island all have programs. So, in addition to a common agricultural economic history, the Northeast has a shared political environment in which to try to consciously restructure its agricultural sector.

How can the state best intervene to "save farming" or develop the states' agricultural potential. Answering this requires understanding the reasons for the decline of agriculture in Massachusetts. The reasons are economic. It is difficult to make money farming in Massachusetts, not for reasons peculiar to this state, but for reasons very similar to those in other Northeastern states. In order to find solutions we must understand the regional nature of the agricultural problem.

The most powerful solutions to the region's severe agricultural decline will emerge if the various states work

together to change the economics of farming in the Northeast. Farming within the Northeast is more interdependent than competitive. If agriculture doesn't survive in New Jersey and New York it probably won't in Maryland and Massachusetts. Regional agricultural development will include all of the states to different degrees, each producing what it is best able to, and all supporting a regional marketing, and farm infrastructure.

Preserving agriculture should be done offensively and strategically. We shouldn't strive only to "save agriculture" but to develop agriculture. This requires restructuring Northeastern farming so the economics make sense. It requires the integration of land preservation efforts with economic programs to improve the "terms of trade" for farmers which entails cooperation among the Northeastern states. Our focus will be the purchase of development rights, a technique that is viewed too often as a "land preservation tool" when it can be used more broadly and effectively.

CHAPTER THREE

PROGRAMS TO PRESERVE AGRICULTURE &

THE APR

The purchase of development rights is one of a handful of major agricultural preservation programs. This chapter reviews these other agricultural preservation programs; differential tax assessment, agricultural districting, transfer of development rights, and marketing. The Massachusetts purchase of development rights program has become the state's predominant agricultural preservation program because it is the most powerful and permanent method to save farmland. The other agricultural preservation programs have with varying degrees of success been used in conjunction with the APR program or not adopted.

Farmland assessment is a policy that assesses land in agriculture preferentially. The goal of this preferential treatment is to encourage farmers to remain in agriculture. Land in agriculture, registered under the program is assessed at its agricultural value rather than at market value. The effect is to lower land taxes on farmers particularly in areas experiencing development where land values are rising. Maryland was the first state to enact differential assessment for agriculture in 1956.⁸ Massachusetts passed its version Chapter 61-A, the Farmland Assessment Act in 1972. By 1986 forty eight states had passed some version of this legislation.⁹ Despite important benefits to farmers, lowering land taxes is not powerful enough by itself to make farming

economically viable, particularly in the Northeast. Also the program has no place-specific planning attributes. It doesn't single out the best soils, or important areas of agricultural production. For all of these reasons there was agreement among Massachusetts agricultural advocates that additional programs to Farmland Assessment were needed to preserve agriculture.

Agricultural districting is another major land use strategy. Agricultural districting entails the voluntary creation by farmers of an agricultural zone for some legally binding time period. This agricultural zone does not exclude development, but rather sets the business climate for agriculture. It provides benefits for farmers such as eligibility for farm value tax assessment, maximum legal protection from nuisance complaints of nonfarming neighbors, and the right to ensure that public investment strategies are reasonably congruent with the prime role of agriculture in the district. This last right would affect public facilities such as roads, sewage treatment facilities, and water systems. New York pioneered agricultural districting in the early 1970's. Since then a number of states have adopted this program as one part of their overall strategy. Despite the benefits of agricultural districts, foremost being to create a climate of agricultural permanence, districting can only be part of the solution, particularly in a densely populated state with a modest farm sector such as Massachusetts. In fact, agricultural districting legislation was not passed in Massachusetts until 1985, and has not yet had any impact on

farming in the state.

Another farmland preservation program that has been used on a county and municipal level is the transfer of development rights (TDR). Transfer of development rights and purchase of development rights (PDR) are based on the legal concept of development rights as one part of the bundle of property rights. Ownership includes the right to keep trespassers off the land, the right to build or develop, and the right to sell the property. Under TDR an owner in one part of the town or county, can transfer her right to develop to another owner, in a different location in the same town or county, where the zoning has allowed "bonus" development. In effect, the zoning system has created an area to be protected from development, (in this case to preserve farming) and an area of higher density development. Instead of simply zoning these areas, the TDR approach allows the restricted landowner to be compensated because she sells her development rights. Furthermore, it is permanent because once she sells those development rights, that land cannot be developed.

Transfer of development rights has many strong points. It strengthens the overall ability of society to plan by creating areas of development and protection. This allows for agricultural uses and urban uses to complement each other, and creates opportunities for integration of social goals (agricultural preservation, inclusionary housing etc.). TDRs reconceptualize our notion of property by removing some of the generally accepted rights from ownership. When our notion of property is challenged we can create other patterns of

development than our current one of inefficient, suburban sprawl. Another strength of TDR is it "harnesses" the market to social goals. This both allows for the costs of preserving farmland to be shifted from the taxpayers, and creates potential for more political support.

Despite these strong points, few schemes for agricultural preservation have been successful in creating actively used transferable development rights. No state government has actively supported a TDR program to preserve agriculture. The most successful use of TDRs has been on a county basis in Montgomery County, Maryland. There a long democratic planning process, clear consensus, and political will were able to create an environment in which TDRs were extremely effective in preserving agriculture.¹⁰ By early 1986 Montgomery County had preserved over 5,000 acres without spending any public money on land.¹¹

Government units the size of counties are probably most effective in creating the necessary supply and demand for the transfer of development rights to work. The market that creates real estate values operates on a county or regional level. Attempting to affect that market on less than a county level is quite difficult. Since Massachusetts' tradition, and New England's is one of strong municipalities and very weak county governments, this creates major disadvantages in enacting successful TDR programs to preserve agriculture. In fact, neither the Commonwealth nor any county have seriously considered such a TDR program. Several Massachusetts towns have enacted TDR programs with agricultural preservation among

their goals. Despite this almost no farmland has been preserved by these town based TDR programs.

The last agricultural preservation technique is purchase of development rights. This program like TDR is based on the "development rights" segment of the bundle of property rights. In this case the development rights to a farm are purchased by a state or county government to preserve farmland. The farmer retains the other property rights, such as the right to sell, or the right to keep trespassers off. The land has a deed restriction put on it so that even if sold it is governed by the same restriction. The primary strength of purchase of development rights programs is they are powerful in halting development, and permanent. The major weakness is they are the most expensive of all the agricultural preservation programs. For these reasons the states and counties that have approved purchase of development rights are in areas under heavy development where buying development rights is seen as the only way to save farmland. With the exception of Kings County, (Seattle) Washington these programs have only been enacted by states and counties in the Northeast. The Massachusetts program to purchase development rights was passed by the legislature in 1977. It was legislated as the Agricultural Preservation Restriction (APR), and has become the backbone of the state's strategy to preserve farmland. It is one of the largest, and most influential development rights programs in the country.¹²

Under the APR the development rights are purchased by the Commonwealth of Massachusetts (sometimes with town

contributions). Purchase price is determined by appraising the land for agricultural value, and market value and paying the farmer the difference between the two amounts. In return, the development rights are bought and the land is permanently restricted from development. The farmer still owns the land and can sell the farm, or do anything else associated with property rights. If she decides to sell the farm, the restriction is passed on to the new owner. As is the case with land in which the development rights have been transferred, the land's only value is for farming. Due to this the market is significantly altered and land becomes affordable to farmers. This solves one of the toughest problems of agricultural viability, the problem of passing on the land to young farmers. The state money also "frees up the equity" in the land, that is, it allows the farmer access to the value of her land (without developing) and creates the possibility that she will reinvest in the farm.

The purchasing of development rights, along with the other programs, farmland assessment, agricultural districting, and transfer of development rights are the most common agricultural preservation programs. The remaining chapters of this paper will focus on the APR, the major Massachusetts agricultural preservation program. Before doing this, it's relevant to look at two other major programs the Commonwealth created to restructure the economics of buying and selling of farm products. Although these programs are not generally seen as agricultural preservation programs they have everything to do with preserving and developing agriculture in

Massachusetts. These programs are marketing and direct marketing.

Marketing is a systematic method of selling a business, products, or an idea to consumers. In this case the Commonwealth was attempting to sell consumers (residents) the idea that locally grown products were fresher and "better". Many different tactics were used to reach this goal such as sign advertising, point of purchase advertising, and radio advertising.

The concept of direct marketing is more specific. It involves producers selling "directly" to consumers, bypassing the proverbial middleperson and thereby retaining a larger share of the final value of the product. Direct marketing was advocated by the U.S. Department of Agriculture during the Carter administration as a solution to the low prices that farmers were receiving for their goods. The tactics of direct marketing included forming producer cooperative links to consumer cooperatives, producers selling to chain retail stores (hence bypassing regional wholesale markets), farmers markets in urban areas, roadside stands, and pick-your-own operations. The concept of "bypassing" the middleperson is romantic because middlepeople perform work that is essential, particularly in our specialized and complex society. However the strategy of producers gaining access to, and control of, the knowledge and infrastructure of middlepeople (marketing, distribution, advertising/education) is powerful, positive, and workable.

The entire series of marketing initiatives involves the

creation of a positive image for Massachusetts grown products ("Mass Grown and Fresher") and the increase of the price for locally grown products as well as the farmers share of the price. These marketing initiatives change the "terms of trade" between the agricultural producers and the urbanized sectors of the economy by increasing prices paid to farmers. Both marketing and direct marketing have been innovative and successful in Massachusetts particularly in the fresh produce sector of the economy.

Our interest with marketing stems from the belief that it should be a major component to "preserving farmland" both in the Northeast and in Massachusetts. Mark Lapping in his essay "Farmland Protection in the Northeast" concludes with this analysis:

Finally, the entire issue of farm economic viability is beginning to get addressed through the state level policy. The most encouraging sign in this regard is a substantial shift in the posture of the region's state agriculture departments: they have ceased to be solely regulatory in nature and are moving to become aggressive "boosters" of the region's agriculture. A saying that reflects much conventional wisdom goes something like this: there is nothing wrong with Vermont agriculture which a few more dollars in the farmer's pocket would not solve. Although this is surely an oversimplification, it must be noted that methods to retain a farmland base will be successful only to the extent that they are part of a larger effort to enhance the viability of the Northeast's agriculture. The melding of policy, to join land concerns with economic imperatives, is just beginning in the Northeast.¹³

Achieving maximum positive results from agricultural preservation programs requires this "melding" of land use programs like the APR with marketing programs. Massachusetts has created major programs in both of these areas. Getting these programs to reinforce each other is not easy in part,

because of basic dilemmas the APR program faces.

CHAPTER FOUR

DILEMMAS IN DEVELOPMENT RIGHTS PROGRAMS

By July 4, 1985, 133 farms in Massachusetts with a combined total of 12,288 acres had been restricted by the APR program. To purchase the development rights of those 133 farms the state paid \$20,232,700 for an average price per acre of \$1,647. How do we evaluate the Department of Food and Agriculture's management of these resources? How do we determine if the state has used this money wisely or not? We will grapple with these questions first by examining the stated goals and criteria of the APR program and secondly by highlighting dilemmas that all purchase of development rights programs have experienced. From this process key measures to determine if the APR program is doing a good job will arise. We will use these measures to evaluate the program in Chapter Five.

GOALS AND CRITERIA FOR THE APR PROGRAM

The Department of Food and Agriculture (DFA) states that the main objective of the Agricultural Preservation Restriction program "is to protect productive farmland through the purchase of deed restrictions and revitalize the agricultural industry by making land affordable to farmers and their operations more financially secure".¹⁴

The Department then goes on to state the goals of the program:

- 1) To save the best and most productive agricultural land remaining in the Commonwealth and;

- 2) To provide an opportunity for farmers to purchase

farmland at affordable prices and;

3) To help farmland owners overcome estate planning problems and to address other personal ownership problems such as age, health, retirement and;

4) To release the equity "locked up" in the land and therefore provide working capital to enable farm operations to become more financially stable and;

5) If other program objectives are met, to protect scenic openspace and environmentally sensitive land and;

6) To develop a positive attitude among farmers, agribusinessman, landowners and urban residents that agriculture in Massachusetts makes an important contribution to the state's economy, food supply and rural character.¹⁵

These goals of the APR program have a mixed nature. Some are important in setting policy and measurable while others are less important, harder to measure, or in some cases true almost by definition. For example, the first goal to "save the best and most productive land" is important, clear, and measurable. This is the prime goal of the entire program. By determining if the program has saved the best and most productive agricultural land left in Massachusetts we can evaluate whether the APR program has been successful in reaching its prime goal. The second goal to provide opportunities for farmers to purchase affordable farmland, and the third goal to address personal ownership problems such as retirement are very much related. These goals state that APR program aims to help farms stay in production by assisting farmers who want to retire and, by giving farmers an opportunity to buy land at prices they can afford. We will evaluate what effect the APR program has had on these problems. The fourth goal is definitional in that any time

the state purchases development rights, the equity "locked up" in the land will be released without real estate development. A more interesting question concerns the second part of that goal; namely once the equity in the farm is released is that equity reinvested in the farm operation? We will answer this question in Chapter Five. The fifth program goal to protect scenic openspace and environmentally sensitive land "after other program objectives are met" is rather nebulous. It indicates that the APR program neither wants to primarily focus on preserving farms for scenic openspace reasons, or alienate supporters who want the program to do just that. We will not focus on this goal except to state the APR program should not be an openspace preservation program, but a key resource in a strategy to develop the state's agriculture. The program's final goal to "develop a positive attitude among farmers, agribusinessmen, landowners and urban residents" concerning the importance of Massachusetts agriculture is both hard to measure, and extremely important. This goal leads directly back to our first chapter that argues for the importance of preserving agriculture both for Massachusetts farmers, and for the overall benefit of all of us. This paper puzzles about how effectively the program has done this.

The APR program uses a list of criteria to decide which farms to purchase development rights from. These criteria are important because the program receives approximately twice as many applications as it approves.¹⁶ The criteria for selection of farms to buy development rights from also show a mix of strongly mandated and more amorphous criteria: "The criteria,

in order of significance, are (1) quality of the soils for agricultural production; (2) degree of threat facing the farm; (3) significance of the farm to the state's agriculture; and (4) compatibility with environmental and community planning objectives."¹⁷

As the goals of the APR program should reflect objectives, the criteria for purchasing development rights should reflect both objectives, and goals. The protection of "prime" soils again heads the list of objectives, goals, and criteria. The second criterion "degree of threat" refers to protecting farms with the highest threat of real estate development. This criterion is problematic. In fact, it may be in direct opposition to other goals and criteria of the APR program. This is because reacting to the real estate market is inherently defensive. It rewards farms that are experiencing real estate pressure whether they are, productive or whether their preservation is likely to help "revitalize the agricultural industry". This is particularly problematic in 1986 because the Boston metropolitan area, and most of the state is undergoing real estate appreciation, and development pressure of historic proportions. Even traditionally out of the way areas such as Berkshire County in western Massachusetts are experiencing housing increases of two and threefold.¹⁸ The other criteria are more subjective and can be interpreted in conflicting ways. For example, using the third criterion, a farm may be considered "significant to the state's agriculture" due to it's production characteristics, or because of it's scenic or historical characteristics. The

fourth criterion, compatibility with environmental and community planning objectives is important in ensuring that the state's agricultural preservation effort is part of the overall planning objectives of the community and the state. Agricultural preservation should be done in a democratic context that opens up communities to housing for all races and classes, and that helps us work with the natural environment. This criterion is a necessary check on the APR program.

As interesting as the four criteria for selection of APR farms are, the most interesting criterion is the one that is missing. The APR program does not have as a criterion the selection of farms that are productive or economically viable. This despite the program's clear objective to not only protect land that has "prime soils" but land that is productive. Two questions emerge from this: has the committee that selects APR farms been consciously choosing productive farms, and in either case do the farms on the program represent the most productive lands in the state? The second question whether the state has protected the most productive land and presumably most viable farms is key. We will follow it throughout the remainder of this paper.

KEY DILEMMAS OF ALL PDR PROGRAMS

There are many recurring contradictory dilemmas to purchase of development right programs. Each government body that has purchased development rights has found itself without the resources to meet the goals. New Hampshire Commissioner of Agriculture Steve Taylor brought out most of these dilemmas

while speaking to a PDR workshop:

It really comes down to a political question that our committee faces. Where can you spend that money? Where can you spend it in the best, most responsible way? There are those who say we should spend it in the Connecticut Valley where farming is strongest and the development pressures are the least and looking down the road where agriculture will probably survive in New Hampshire. The other side is all those people who are flocking to southeastern New Hampshire coming to find what they think is the real rural life. There is tremendous pressure to spend the money in that area, and protect some agricultural land there. The reality is the votes for the program are in the urban areas and the populous southeastern part of the state. I guess our best move is to spend the money evenly, spread it over a field like a great manure spreader.¹⁹

The first dilemma is that political support comes from the suburbanized part of the state, but the best farmland is generally in the more rural part of the state. This holds for every state that has adopted PDR programs. To preserve agriculture best might lead to protecting farms in the rural areas. Doing this could lead to major political problems with urban and suburban legislators. This is, in fact the prime reason that Suffolk County, Long Island's PDR program has lost political support and become defunct. The problem is greatly exacerbated by appreciation in the real estate market. Land under development pressure is both worth more and tends to appreciate faster than land not under development pressure. Not only do PDR programs feel political pressure to buy farms that may not be in the "best agricultural area" they pay more for that land by factors of two, five, or even tenfold.

Related to this is the question of whether the PDR program is attempting to save the "land or the activity of farming". All PDR programs save land, in most cases for

perpetuity. But that land can be saved to grow food next season, in two generations, or to maintain a scenic, historic landscape. By looking at data from Massachusetts farms we can begin to observe how effectively the state has preserved not only the land, but the activity of farming.

Another question for PDR programs is whether it is appropriate to plan blocks or clusters of farms which have been preserved or to choose the restricted farms individually on their own merits. Clustering brings up questions related to maintaining the activity of farming, and political questions of where to spend program money. Given the APR has decided to go after farms in southeastern Massachusetts, as it has, should it look for farms that directly abut already restricted farms?

Most agricultural experts feel that clustering restricted farms regionally, and locally is effective. This is because regions that have numbers of farms are more likely to retain "an agricultural infrastructure" and hence continue as agricultural regions. States with PDR programs encourage or require clustering to widely different degrees. Maryland, for example, will only purchase development rights to farms that have already enlisted in the state's agricultural districting program and are therefore clustered.²⁰ Massachusetts has no written policy that favors clustering, but implicitly favors clustering and is creating concentrations of preserved farms in the Dartmouth-Westport area of southeastern Massachusetts and the lower Connecticut Valley section of western Massachusetts. Chapter Five will examine how the program has

managed the dual pressures to spread and cluster APR farms.

A final dilemma for PDR programs is deciding to use more scientific systems or committee managed systems to determine which farms get chosen for the purchase of development rights. New Hampshire, for example, uses a 100 point system to rate farm applicants. Farms are rated for soils (30 points), development pressure (15 points), and economic viability (10 points) among other attributes. The farms with the most points are automatically chosen.²¹ Maryland uses a similar point system that only kicks in after a large number of farms have been restricted based on county planning objectives, and "cheapness" of purchase price.²² Massachusetts, on the other hand, purchases development rights based on the decision of the Agricultural Lands Preservation Committee. This committee, consisting of farmers, experts, state officials, and the Commissioner of Agriculture decides which farms to appraise, and which farms to purchase development rights from. They make their decision on the goals and criteria previously discussed, and their evaluation of the particular farm.

A committee managed system presents the possible advantages of allowing more flexibility and innovation in the growth of the program. A standardized scorecard is no panacea. By itself it is probably no more objective or scientific than a committee managed system. However using one would force the Department to prioritize tradeoffs between cost of development rights, geographic dispersal, agricultural viability, and development pressure. This process could lead

to discussion, disagreement and ultimately a more coherent strategy to revitalize Massachusetts agriculture. This paper recommends a "reconnaissance point system" to prioritize farms applying to the APR program based on objectives, goals, and criteria of the program.²³ The point system would be used as a tool to aid the Agricultural Lands Preservation Committee in reaching its decisions.

Based on the APR's program objectives, goals, and selection criteria there are a number of questions to look for in judging the programs success. The program like all purchase of development rights programs faces major dilemmas and has relatively little money and resources. These dilemmas and constraints should be borne in mind when judging the program.

CHAPTER FIVE

EVALUATING THE APR PROGRAM: CLUSTERING & ECONOMIC
VIABILITY

Chapter Four presented the objectives, goals, and criteria of the Massachusetts APR program as well as dilemmas that all development rights programs face. From the many issues that surfaced from out of that process we want to answer four questions about the APR program.

- 1) How does the APR program resolve the dual pressures development rights programs face to cluster farms in agricultural areas while spreading farms across the state?
- 2) How effective has the APR program been in creating an affordable land market for farmers?
- 3) Are the APR funds paid to farmers being reinvested in the farms?
- 4) Is the APR program preserving the "best and most productive" lands in the state? How economically viable are the farms on the APR program?

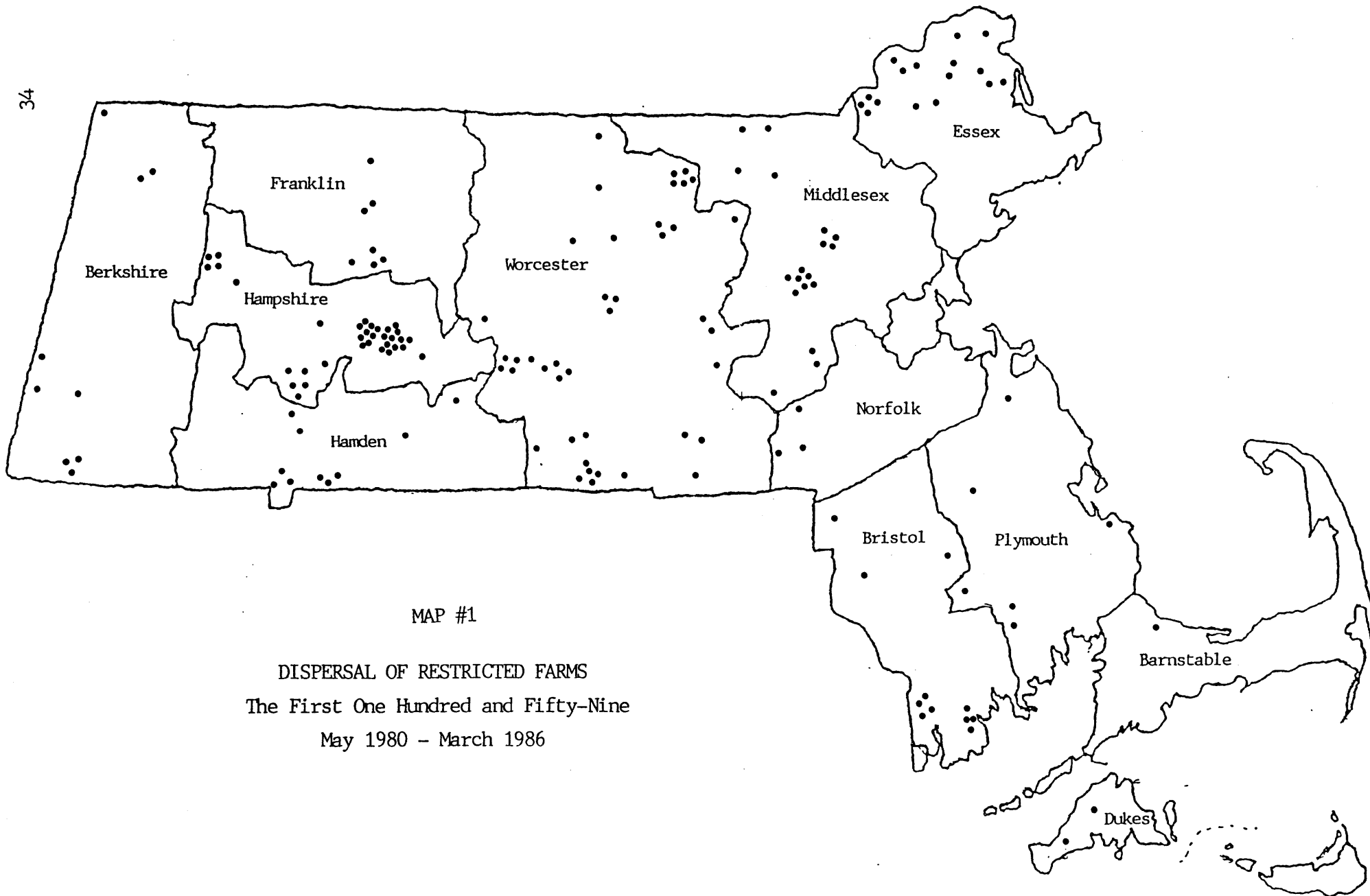
These four questions will not be given equal footing. The question of spreading/clustering of APR farms is vital and a potential landmine for all PDR programs, hence it deserves attention. The questions of the APR effectiveness in creating an affordable land market for farmers, and reinvestment of APR monies are interesting, but not the major focus of this paper. Finally determining whether the state has chosen productive and economically viable farms is the central question of this paper. Since neither productivity nor viability became criteria for selecting APR farms there are reasons to worry that the program may not be meeting this objective.

1) How does the APR program resolve the dual pressures development rights programs face to cluster farms in agricultural areas while spreading farms across the state?

As discussed previously PDR programs feel political pressure to preserve farms in all areas of the state. At the same time they are under pressure to save land in the most agriculturally productive areas of the state which by definition are not in the populous parts of the state where political support from the program comes from. How has the Massachusetts APR program handled these dual pressures?

This question is best resolved by looking at where the APR farms have been preserved. Map #1 shows the location of all APR farms preserved between May 1980 when the first farm was restricted, and March 1986. By this time a total of 159 farms and 14,805 acres were on the APR program. The map shows that the activity of the program is spread throughout the state yet certain counties and towns have major concentrations (clusters) of preserved farms. A "cluster" is high concentration of restricted farms all in close proximity. These farms may directly adjoin, be in the same town or in adjacent towns.

The four counties with the most farms on the APR program are the adjacent counties of Hampshire, Worcester, Middlesex, and Essex. These four counties have always had the most program activity. The agricultural base of these counties differs. Hampshire County contains what is commonly seen as the best soil in Massachusetts, fertile Connecticut Valley land. Farming operations there include tobacco, mixed



MAP #1

DISPERSAL OF RESTRICTED FARMS
The First One Hundred and Fifty-Nine
May 1980 - March 1986

vegetable, and dairy. Worcester County farms are predominantly dairy operations and apple orchards. Middlesex County farms are closer to, and more affected by the Boston metropolitan area and its real estate market. Because of this there are fewer surviving farms than in Worcester County, and those that are in operation tend to be in fruits and vegetables because of their higher returns per acre. Essex County also in the Boston metropolitan area has a similar agricultural base as Middlesex County.

Three interesting trends are clear. Within these four counties there has been a major westerly movement in APR activity in the last few years as land prices in eastern Massachusetts have skyrocketed. Concurrent with this shift has been the formation of a very strong "cluster" of preserved farms in the Connecticut Valley. The most recent trend has been the beginning of a strong clustering of APR farms in the Dartmouth-Westport area of southeastern Massachusetts. This clustering will continue as there are a number of farms under appraisal in that area.

Although the Agricultural Lands Preservation Committee has no written policy to favor clustering, the staff and the committee now have a "working policy" to encourage clustering of APR farms. Remarks by Bureau of Land Use Chief Jim Alicata attest to how strongly the Department encourages clustering:

What I've seen from evaluations that are presently going on is they're looking at blocks of farms. I'm presently involved in a project with seven farms together. As long as we get all seven farms then we're interested. I got a call yesterday about four farms which make up maybe 1,000 acres total, and it's a

really productive, very well managed area. So I think those are the issues that have to be considered. Because if the future of farming becomes lesser number of farms, but larger farms then we should be gearing ourselves towards that.²⁴

Although the Department has evolved towards its present "unofficial" policy of favoring clustering it has still purchased development rights to farms throughout the Commonwealth. Every county except Nantucket has at least one farm on the program and most of the "non-major" counties have between six and nine farms. In total 31% of the farms on the program, a substantial minority are in the non-major counties. The APR program has both preserved farms across the state and clustered in key agricultural areas. This is an excellent method to gain widespread political support, while preserving enough land, human talent, and farm infrastructure to maintain an agricultural base, and agricultural viability.

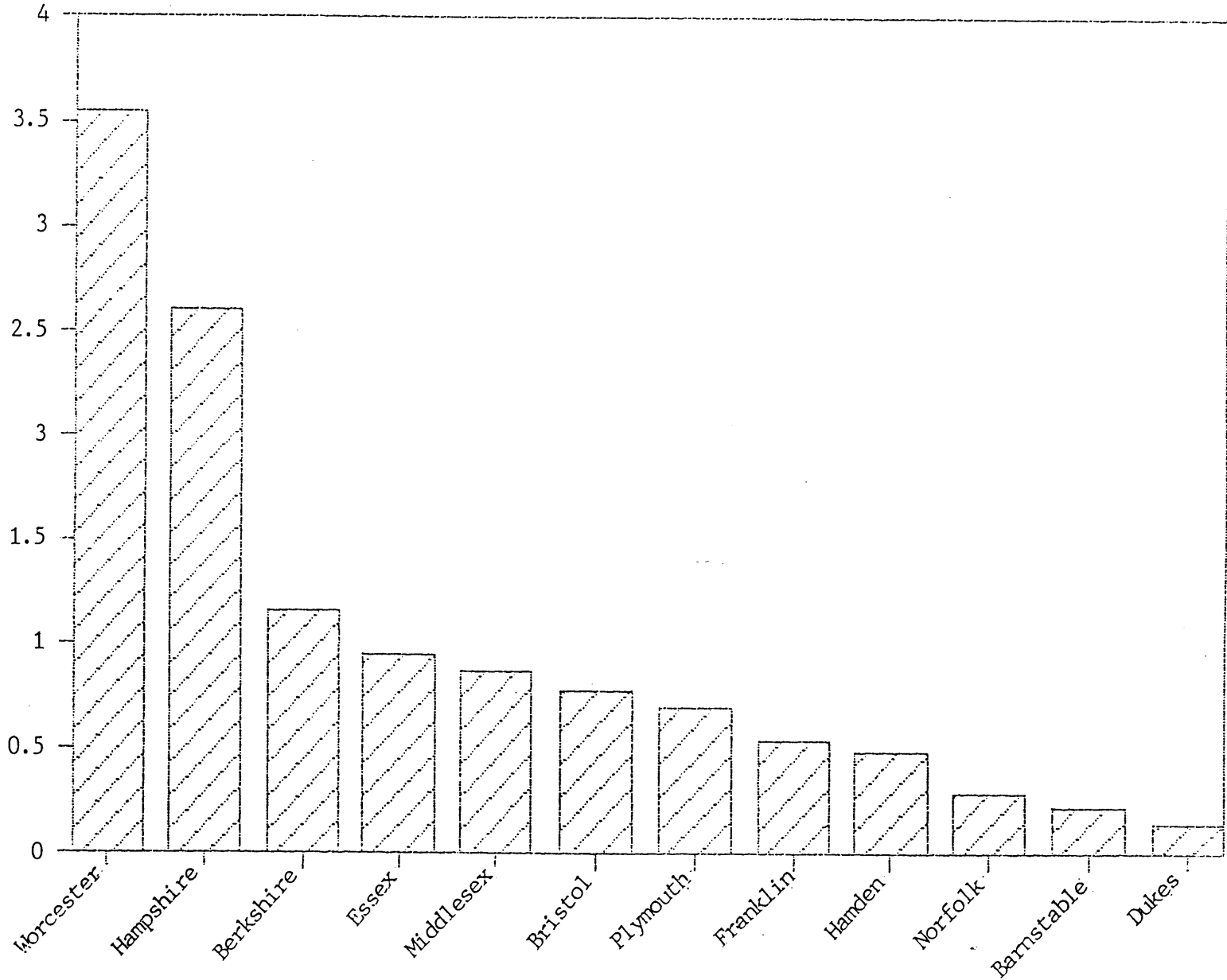
Information on the dispersal of bond money, and the number of restricted farm acreage by county further shows how well the Department has managed the clustering/spreading dilemma. Graphs 1, and 2 illustrate the total acreage under APR, and the amount spent for purchase of development rights, for each Massachusetts county. These graphs show that the APR program has preserved farms across the state, but has focused on four counties in particular. They also point out the vast difference in real estate value between land in western Massachusetts and land in eastern Massachusetts. By clustering in agricultural areas and spreading to preserve farms everywhere, even at a high price, the APR program has enjoyed ongoing support both from legislators and farmers.

GRAPH #2

Acres Under APR By County

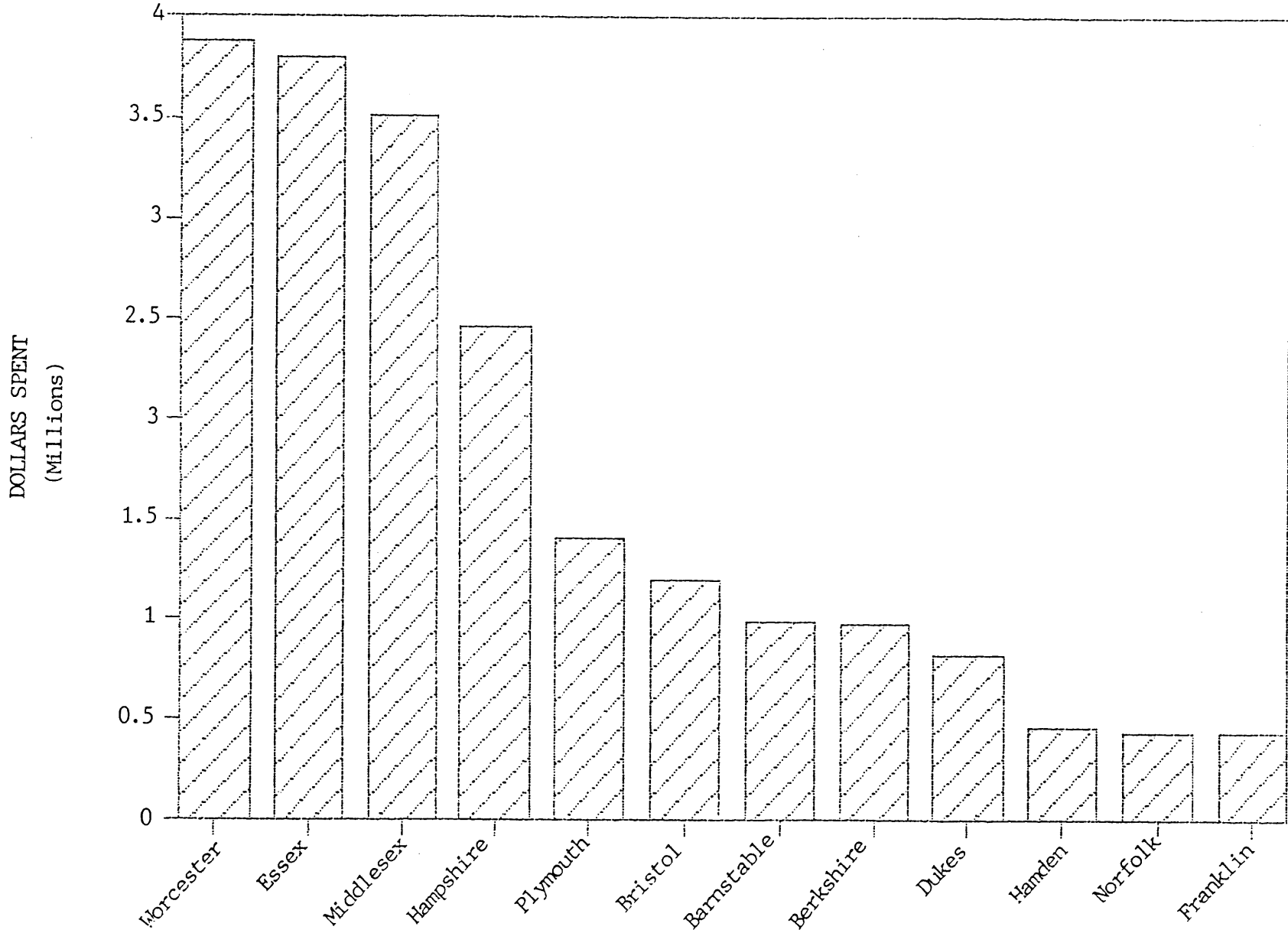
37

ACRES PRESERVED
(Thousands)



GRAPH #2

Dollars Spent For Development Rights By County



FARM VISITS

The rest of this chapter will rely on information gathered during the summer of 1985 to the 133 farms on the APR program as of July 4, 1985. These visits were primarily to ensure that the farms were in compliance with the terms of the deed restriction. As a secondary purpose the Department interns Rink Dickinson and Jim Grimley gained a wide array of information about the farms, their operations, and the opinions of the growers on important agricultural issues.

The interviews were informal and ranged in length from fifteen minutes to two hours. All farmers were asked the same questions although the interviewers felt free to let the conversation roam, hence the widely varying interview time. Questions covered included size of farm, number of acres in different crops, length of time under the restriction, resale of farm since restriction, marketing arrangements, number of employees, gross farm income, and recommendations for what the Department could do to best help Massachusetts farmers. In addition to these questions the interviewers rated each farm on soil management, and overall management. Finally the interviewers verified that every farm was in compliance with the agricultural restriction. It is a strong positive endorsement of the program that there were no violations.

2) How effective has the APR program been in creating an affordable land market for farmers?

This question stems from the second and third goals of

the APR program and from the stated objective of "making land affordable to farmers". Farmers were asked if there had been a change in owner or operator of the farm since the farm was put under restriction, or last inspected which ever was more recent. Only forty nine percent of the farms had the same owner and operator as when they went under the restriction. Thirty percent of the farms had a new owner and new operator. The remaining twenty one percent had changed owner or operator, but not both.²⁵ Given that no farm has yet been under the agricultural restriction for more than six years this is a tremendous amount of real estate activity. The fact that much of it was "non-market" or family transactions is further to the APR program's credit as one goal of the program is to solve retirement issues, and it can be safely assumed that most of these transactions allowed the older generation of farmers the income to retire while still leaving a farm for the younger generation.

The personal stories of farmers on the program also attest to the state's success at creating an affordable land market. Many growers stated "without it (the APR) I wouldn't be here now". This is particularly true due to the rapidly rising real estate market.

It's clear that the APR program is creating an affordable land market for farmers and that it is helping many growers with their ownership and retirement problems. A relevant question is how many opportunities there are for farmers to purchase land besides the APR program. Bill King, agricultural expert and former director of the APR program

believes that there are essentially no instances in which agriculture can compete with other uses for land in Massachusetts. According to King, farmers can only afford land that is not suitable for development (i.e. flood plains), that has an agricultural restriction on it, or has been sold by a concerned farmer for agricultural value. The conclusion follows that the APR program accounts for a significant percent of farmer land purchases. The program deserves high marks for creating an affordable land market for Massachusetts farmers. Despite this, a new problem is emerging because of the escalation in Massachusetts real estate. That is the possibility that farmers will not be able to afford APR farms in some areas because they will be outbid by "gentry" looking for mini-estates, and horse farms. To the Department's credit they are aware of this, and are striving to keep APR farms from country gentlemen.

- 3) Are the APR funds paid to farmers being reinvested in the farms?

A goal of PDR programs is to "release the equity" in the land so that farmers can reinvest in their operations, plan for the future and ultimately "revitalize agriculture". Getting information on what the farmers have done with the APR capital infusion is difficult because people who get large sums of money (the program mean as of July 1985 was \$152,125) generally don't tell the state what they've done with that money.

Our approach was to ask the question in as general a way as possible. From this we were able to get responses from 67

out of 119 farmers and landowners (56%) concerning use of APR money they received. The question was "what was the major use of the APR funds?" Our most common answers were that the money was used for; working capital to reinvest in the farm, debt repayment, retirement, and investment. In cases where farmers responded that the money had been used for more than one purpose we noted all purposes. Because of this there were 88 responses from the 67 farmers and landowners. Results follow:

10

TABLE 3 USE OF APR FUNDS

	# Responses	% of Total
1)REINVESTMENT IN FARM	27	31%
2)DEBT REPAYMENT (Mortgage etc.)	23	26%
3)RETIREMENT	21	24%
4)INVESTMENT	16	18%
5)CREATION of NEW ENTERPRISE	1	1%
Total	88	100%

We should use this information carefully. Most of the farmers and landowners knew that the Department of Food and Agriculture wanted to hear the APR funds had been reinvested in the farms. The survey therefore had an inherent bias to prove reinvestment in APR farms as a major use of APR funds. Despite this, there was no reason for farmers to invent imaginary uses of the money, rather just to include farm re-investment if it was a use of their money.

We can safely conclude that the major uses of APR funds are for farm reinvestment, debt repayment, and retirement. What can't be determined is how much of the money goes for each of these uses. For our purposes we see them as roughly

of equal importance. The other significant use of APR money was for investment. Generally this meant the farmer or landowner left the principal untouched and used the interest either for working capital, for personal income, or retirement.

In any case this information shows that the APR monies are being used in ways that meet the goals of the program. Cases where the money is reinvested in the farm directly meet the programs goals to "free up the equity in the land" so it can be used by the farmers. Similarly when farmers pay off debts they are gaining control over their agricultural enterprises, and adding to the stability of agriculture in Massachusetts. Of course, it's possible to pay off debts, but continue to work for such low returns that farmers will decide to get out of farming simply because of low income, low morale, and a sense of low social esteem, rather than absolute financial crisis. The same issue reappears in many cases where the APR monies are used for retirement.

The Simone farm in Methuen is a good example of this. The Simones have one of the most interesting farms on the APR program. Frank and Bill Simone run a small, (twenty acre) intensive vegetable farm. They run the farm with their six sons. They specialize in "quick" growing crops such as lettuces, escarole, and of all things radishes. They are one of the few, if not the only major radish growers in Massachusetts. All of their products are marketed wholesale and like most farmers they feel they don't receive a fair price for their products. By selling their development rights

to the Commonwealth for \$160,000 Frank and Bill will be able to retire securely. Their sons in their twenties and thirties will take over the operation. The APR program has been extremely successful in keeping this highly productive farm going, but if produce prices remain low will the younger Simones remain in agriculture? Furthermore if they leave farming they will not be able to sell their land for development, and repay themselves for years of underpaid, backbreaking work. So the APR program has solved the Simones retirement problem and kept some great land productive, for now. Without agricultural development the problem will reappear.

Our data shows that direct reinvestment of APR funds back into the farms is occurring, and that the other major uses of APR monies are in line with the programs goals. Again the APR program scores high marks. It's now time to evaluate the productivity and economic viability of APR farms because it on this goal more than any other that the long range success of the program depends. Our analysis of Northeastern agriculture has been that unless the economics of farming is restructured agricultural land preservation will not succeed. The Simones radish farm exemplifies this. The APR program has done an excellent job in selecting and working with the Simones. The result is a highly productive farm, on excellent soils, run by a hard working family has been "preserved". This is an opportunity. Without more creative work it will become a problem probably in ten or fifteen years. Ten years is a sufficient length time to plan further strategies to develop

agriculture in Massachusetts. If most farms are anywhere near as viable as the Simones, the APR program can only be judged an overwhelmingly success.

- 4) Is the APR program preserving the "best and most productive" land in Massachusetts? How economically viable are the farms on the APR program?

Preserving the best and most productive land in Massachusetts is the overall objective and prime goal of the APR program. Our thesis question is has the APR program preserved productive and economically viable farms? We are not explicitly concerned with whether the land on the program is the "best". The best lands are those that have the "soil qualities, growing season, and moisture supply needed to economically produce sustained high yields of crops when acceptable farming methods are utilized".²⁶ To determine which farms to purchase rights from, the staff and committee use soil classification information. To evaluate how effective the APR program has been at saving the best lands would entail looking at soil maps to see what percent of APR farmland is "prime". This is not our focus first because of lack of interest, and secondly because it is not necessary. The APR staff and the Agricultural Lands Preservation Committee do look at soil maps, and at soil classification information when making decisions on whether to appraise, or purchase development rights to farms. There is little doubt the program successfully protects farms with prime and highly rated soils.

One reason the program does this well is the criteria for

selection of APR farms gives top billing to protecting farms with "quality of soils for agricultural production". As discussed in Chapter Four there is no criterion for "agricultural productivity" despite that being an objective and goal of the APR program. Furthermore there is no mention of economic viability as a criterion although it is discussed obliquely in the programs objectives. This leads to two questions. Does the staff and committee have an "unofficial policy" of selecting farms based on productivity and viability, and in either case are APR farms productive and viable when compared to Massachusetts farms as a whole?

Bob Woodruff, APR Program Director states that the program does have a policy of looking for farms that are productive and looking for operations that are well managed, and viable. Although farms are not specifically evaluated on productivity and viability Woodruff feels there is an increasing effort on the committee's part to get farms that are productive. Also, Woodruff feels that earlier on in the program's history the better farms tended not to apply to the program, for fear of stigma attached to being part of a government program. As the program has gained a positive reputation there has been an increase in applications from good and productive farms.²⁷

Three measures that begin to get at economic viability are agricultural productivity, gross farm income, and risk of failure. Productivity is a precondition for viability, although to be viable a farm needs to be more than productive. How much food and agricultural product do APR farms produce

each year and how much income do APR farmers receive for their products? It is difficult to get solid numbers on the agricultural productivity of each APR farm. The interns did question each grower about the variety of crops and the average yields per acre for each crop. The answers were vague, perhaps because the farmers were hesitant to be judged for their productivity.

The growers did however, answer questions about their gross farm income. Of the 133 farms, farmers and landowners for 119 parcels answered the full range of questions. Of these 119 respondents, 77 (or 65%) provided information on gross farm income. The farmers were asked to estimate their income within \$5,000. The interns are convinced that the farmers responses were accurate and meaningful. More than one farmer offered to "go and get the books" and some answered the question to the nearest hundred dollars. In one case a farmer told us his income to the exact penny!

Gross income measures the total sales of the farm. It does not take expenses into account, hence tells us little about profit. Finally it doesn't tell us personal income of the farmer. It does however give us a good estimate of farm productivity.

Are APR farms more or less productive than farms in Massachusetts in general? To answer this we will compare the productivity (measured by gross income per acre) for the APR farms that provided information, to the productivity per acre for all farms in Massachusetts as measured by the Census of Agriculture.

From this information we will be able to conclude if the APR farms are more or less productive than Massachusetts farms. However productivity is not viability. Economic stability or conversely risk is key in measuring viability. Are APR farms more or less stable than the average farm in Massachusetts? This is a much more slippery subject than that of mere economic productivity. Our focus will be on the dairy industry, an agricultural sector that is in major stress nationally and within Massachusetts. By measuring the percentage of APR farms that are dairy farms in comparison to the percentage of dairy farms in Massachusetts in general, we can see to what extent the Commonwealth is "invested" in the least stable major farm operation in the state. This will tell us something about the assumed stability of APR farms.

Before examining statistics on APR farm productivity, there is a more subjective survey on this question. One of the key questions interns Rink Dickinson and Jim Grimley addressed in their report on APR farms was whether "the land was being used to a reasonable degree of its potential?" The interns concluded that 7% of the restricted farms were not being used to a reasonable degree of their potential. The farms in this category were selected on the basis of the intern's subjective assessment. This assessment however was based on visits to the sites and relatively extensive tours of the land under restriction. Farms that were judged unproductive were either growing and marketing no crops, or more generally consisted of fields of hay with little tending.

What does it mean that 7% of the APR farms "were not

being used to a reasonable degree of their capacity"? It means a small but not inconsequential number of the restricted farms were not productive. Farms in this category are not necessarily "mistakes" of the program. As the deed restriction runs for perpetuity there reasonably will be times when one generation of farmers is still on the farm, yet no longer active. Major problems do exist for the effectiveness of the program when restricted farms have been purchased in areas where there is little agricultural activity, and little farm infrastructure such as with the Bresse farm discussed in Chapter One. It would be useful to track these farms with little agricultural activity over time to determine what proportion of them are mistakes.

As previously mentioned interviews were conducted with farmers/landowners of 119 of the 133 farms on the APR program in June of 1985. Seventy seven farmers gave the interns their gross farm income. Generally this was for the last year with complete sales information or calendar year 1984. The farmers were asked to estimate within \$5,000 and were asked for the income that represented a normal year. If they had an abnormal year (for example because of hail damage to apples) they would answer the question with income for sales for a normal year.

Another note on procedure. Many APR farms, particularly those in dairy rent a great deal of land. This obviously jeopardizes the long term security of their operations. Beyond that, it presents some problems in allocating the market production of their operation. A typical dairy farm

may use 300 acres to grow the corn and hay for the cows. Many of the APR dairy operations have 100 acres or so under restriction and rent the rest. If the total income from milk sales is \$250,000 only some part of that production can be allocated to the land under the agricultural restriction. This study divides the production proportionally. So in this example we would credit one third or \$83,300 of production to the APR farm.

Massachusetts total receipts from farm sales for 1984 was \$385 million. Total receipts means income received by farmers for their agricultural production.²⁸ Total Massachusetts farm acreage in 1985 was 680,000 acres of which 12,288 acres had development rights purchased by the state.²⁹ Restricted farms in June 1985 accounted for 1.8% of the Commonwealth's farm acreage. The farms that gave detailed information of gross income covered 7,698 acres or 1.1% of Massachusetts farm acreage. On those 7,698 acres of preserved farmland the total receipts from agricultural products was \$4,749,875 for 1984. Our group of APR farms that responded with gross farm income information accounted for 1.2% of total Massachusetts farm receipts. Table 4 shows this information. APR farms that provided information on gross income therefore accounted for 1.1% of the Commonwealth's land and 1.2% of the Commonwealth's total agricultural receipts. Therefore APR farms are more productive than Massachusetts farms overall. When we translate this information into average income per acre APR farms that gave income information averaged \$617 in output per acre while farms in Massachusetts in general averaged \$566 per

acre.

TABLE # 4
13

PRODUCTIVITY PER ACRE OF APR FARMS AND MASSACHUSETTS FARMS

	All APR Farms	APR-Gross Inc.Farms	Mass. Farms
1)#Acres	12,288	7,698	680,000
2)% Total Ag.Land	1.81%	1.13%	100.%
3)Gross Income		\$4,749,875	\$385,000,000
4)% Total Gross Income		1.23%	100.%
5)Gross Income /Acres		\$617	\$566

It is a positive sign that APR farms are more productive than Massachusetts farms in general. Why are the APR farms more productive? Part of the answer is the committee has selected farms that are good and productive operations. Furthermore farmers who go through the somewhat arduous process of applying for development rights are deeply committed to farming and will tend to run operations that are more productive than normal. Most importantly the statistics on Massachusetts agriculture reflect the murky definition of farm as a place where more than \$1,000 of agricultural products are sold.³⁰ The statistics reflect the large number of "farms" with income of less than \$10,000 (56%) in the state. These operations are generally not full time farms, and as such are not the type of operations the APR program seeks to preserve.

Our information on APR viability thus far is Dickinson and Grimley's findings that 7% of APR farms were not being used to a reasonable degree of their potential, and results

from over half the APR farms representing 1.1% of the state's total farmland that indicate that APR farm acreage is engaged in more economic activity than Massachusetts farm acreage in general. This bodes well for the program although one would expect a state program with choice of which farms to purchase development rights to be able to protect farms that are "better than average". However these findings indicate that the APR program is succeeding in purchasing development rights to farms that generate more market economic activity and therefore have a greater ability to be economically viable.

The next question is what degree of risk do APR farms face compared to Massachusetts farms in general? Even if APR farm acreage is more economically productive than the mean farm acreage in Massachusetts it is critical to try to understand if APR farms are more or less risky and prone to bankruptcy than the "average" farm in Massachusetts. We will attempt to get to this information by examining what percentage of farms under development rights are dairy operations, compared to the general Massachusetts farm profile.

Our argument is that due to market conditions dairy operations are under tremendous financial stress nationally, and in Massachusetts. Currently in 1986 dairy farms are more prone to financial failure than other agricultural enterprises. In five years the crisis may be in apple orchards or sweet corn farms. What is important about dairy farms is how they represent farms under stress, and how these farmers "at the margin" interact with the APR program.

Due to "improvements" in technology dairy cows produce more milk than they did twenty years ago. These improvements are expected to continue, more being on the immediate horizon. The ability of farmers to produce milk has greatly surpassed the growth in consumer demand for the product. Prices have not only not kept pace with inflation but in some years gone down in absolute terms. Farmers in this price squeeze have attempted to make their money by producing even more milk. They have succeeded in this. The overall result has been an economic war of attrition to see which producers can survive by producing large quantities of milk at maximum efficiency.

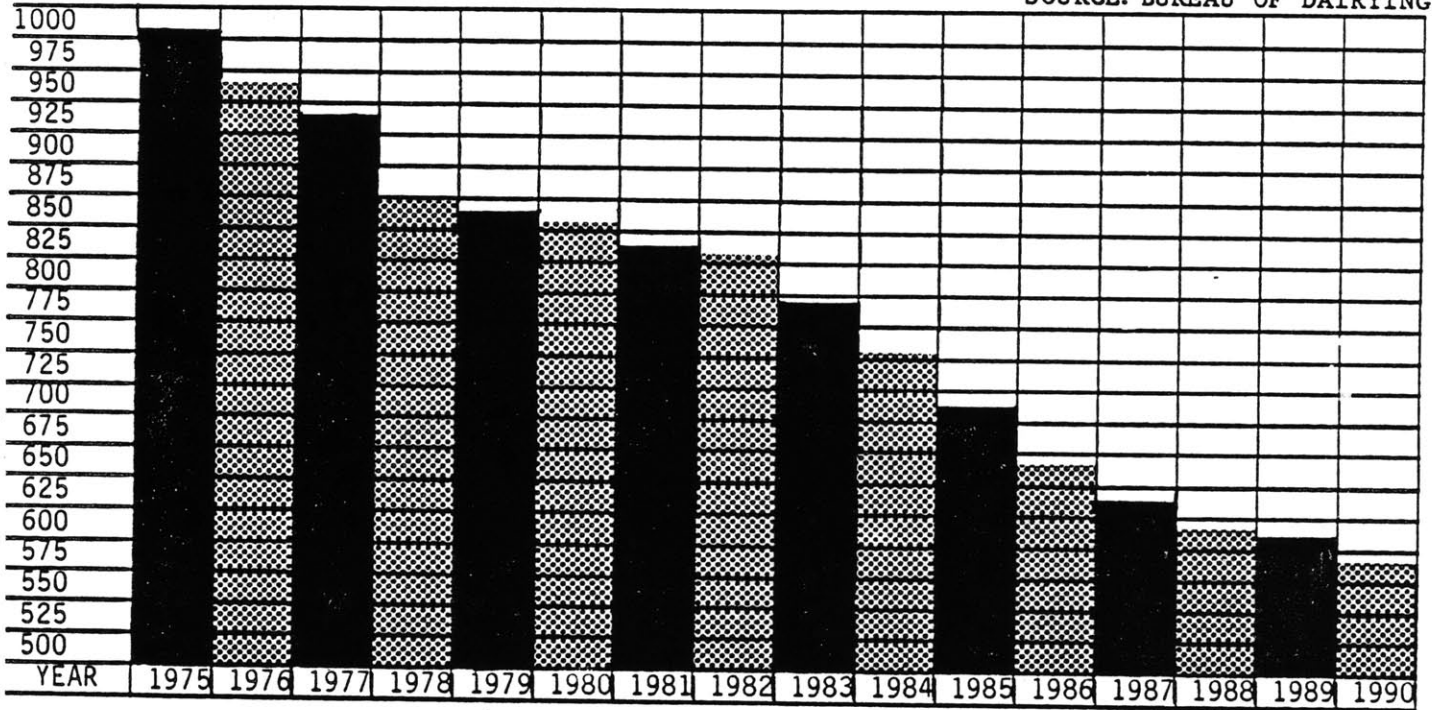
The weakness of the dairy industry and the inability of the government to solve the problems of this agricultural sector in which it is heavily involved in, through regulating prices, can be seen by recent the "whole herd buyout" program. This program has just taken effect as of the spring of 1986. Under it the federal government has bought out hundreds of dairy farmers to get them out of milk production. The dairy cows are sent to slaughter (causing an oversupply of beef cattle). The farms and the farmers have to stay out of dairying for five years. The goal is to limit production, boost prices, and halt the low price- overproduction cycle. Few believe it will work primarily because cows are simply producing more milk than ever before. The importance of the whole herd buyout program for Massachusetts is it shows the difficulties in creating policies to help the state dairy industry when it has no control on dramatically more powerful federal policy.

The numbers on the Massachusetts dairy industry speak for themselves. Table 5 is from the Department of Food and Agriculture's 1985 report on agriculture in Massachusetts. It shows that from 1975 to 1985 Massachusetts lost dairy farms every year. In that ten year period the state went from nearly 1,000 dairy farms to slightly less than 700. Production of milk for this ten year period did not follow the same trend however. It tended to fluctuate from year to year with a sustained low point from 1978 to 1981. Production of milk in 1985 was greater than in 1975. Not surprisingly, the Department's forecasts for the dairy industry are more of the same. The Department projects a loss in dairy farms every year between 1985 and 1990. According to these projections in the year 1990, there will be fewer than 600 dairy farms in the state producing more milk than in any year between 1975 and 1989.³¹

The "shakedown" in the dairy industry has important consequences not only for the future of Massachusetts agriculture, but for the development rights program as well. If the APR program is proportionally more dairy than Massachusetts agriculture in general, and the dairy business faces a future of low prices, overproduction, and bankruptcy for dairy farmers, the APR program may have the effect of

TABLE #5
 DECLINE IN MASSACHUSETTS DAIRY FARMS
 1975 - 1985 FACTUAL
 1986 - 1990 ESTIMATED

SOURCE: BUREAU OF DAIRYING



prolonging the misery of the most marginal farmers instead of revitalizing agriculture in the state.

Table 6 displays information on the number and percentage of dairy farms in Massachusetts, and on the APR program. Unlike the question of gross farm income the information on type of farm operation reflects the population of all APR farms. Of the 133 farms which had development rights purchased the interns saw the land, and talked to the owners or operators for 119 parcels. Each of these 119 parcels have been placed in a category for type of farming operation. This information on farm category displayed in Table 6 compares the population of Massachusetts farms with the population of APR farms. It is not necessary to ask whether differences noted between the APR farms are statistically significant. The pertinent question becomes what is the meaning, or policy implications of the differences observed?

TABLE SIX COMPARISON OF MASSACHUSETTS FARMS AND APR FARMS BY FARM CATEGORY

CATEGORY	MASSACHUSETTS FARMS Source 1982 Census of Agriculture				APR FARMS ON RECORD Source Farm Visits			
	# Farms	%	# Acres	%	# Farms	%	# Acres	%
1) Dairy	781	14.5%	214,011	35%	52	43.5%	6,191	55%
2) Field Crops	731	13%	100,156	16%	24	20%	1,679	15%
3) Live- Stock	1,101	20%	109,259	18%	3	2.5%	346	3%
4) Poultry	176	3%	8,237	1%	-	-	-	-
5) Vegetable	650	12%	39,252	7%	17	14%	1,369	12%
6) Fruits	769	14%	84,410	14%	13	11%	952	9%
7) General	251	5%	26,919	5%	6	5%	604	5%

8)Animal Spec.	407	8%	17,272	3%	2	2%	95	1%
9)Nursery	535	10%	13,464	2%	2	2%	57	.5%
TOTAL	5,401		612,980		119		11,253	

The left hand side of the chart analyzes farm operations by nine distinct functions or categories. These categories are the used by the U.S. Census of Agriculture and include dairy farms, vegetable farms, field crops, cash grains, and "general" farms. Under the dairy classification for example, we see that there were 781 dairy farms in Massachusetts in 1982 out of a total of 5,401 farms. Accordingly 14.5% of the state's farms were dairy farms. Further to the right the chart shows those dairy farms accounted for 214,011 acres (of the state's 612,980) or fully 35% of Massachusetts farm acreage. Are there more dairy farms on the APR program proportionally than in the state of Massachusetts in general?

By examining the information on "APR Farms on Record" we can answer this question. Fifty two of the 119 farms that responded were dairy farms. That results in 43.5% of the APR farms being dairy farms as opposed to 14.5% of the farms in the state overall. Similarly 55% of the APR acreage was in dairy operations as opposed to 35% of the state's agricultural acreage. What do these figures mean?

They mean that the APR program is heavily invested in dairy operations. The percentage of dairy farms on the program is 30% above the normal expected from the state's agricultural profile. More importantly fully 55% of APR acreage is devoted to dairy operations, well above the 35% of

Massachusetts farm acreage that is in dairy. Why are there so many dairy farms that have sold their development rights to the Commonwealth?

It is easy to understand why dairy farms would be interested in selling development rights to the state given the crisis in the dairy sector. Dairy farmers are hurting economically, and their morale is low. Many see little future in dairying yet know no other life. Understandably farmers in financial crisis who want to remain in farming will be very attracted to the APR program. The tendency to attract dairy farmers in distress who want to stay in farming is exaggerated by another factor. It is a widespread belief among farmers that the APR program does not pay fair market price for development rights. This perception affects the program's ability to attract some growers. Many of the farmers on the program who felt they were paid less than was fair, accepted the offer either because of their strong support for the program's goals, or because they were in financial crisis. Given the belief among farmers that the program should pay more for development rights, and that most farmers would rather keep their financial options open, it follows that the program would attract economically distressed farmers who want to stay in agriculture. Finally because of the depressed milk market a disproportionate number of farmers in this position in 1986 are dairy people.

The APR program is preserving prime agricultural land, and land that is productive. Furthermore the program is putting even more emphasis on preserving productive farms.

However these positive actions are mitigated by the program's heavy overemphasis on restricting dairy farms. This overinvestment is risky and may threaten the APR's ability to meet its objective to "revitalize the agricultural industry".

It is the Department of Food and Agriculture's mission to use the APR program to accomplish many goals that round out that objective. Doing this requires some coherent strategy to capitalize on the power of purchasing development rights to create positive multiplier effects. Purchasing development rights to an abnormal number of dairy farms may reflect such a strategy. If it does, that strategy should be articulated, debated, tested and strengthened.

CONCLUSIONS, RECOMMENDATIONS, AND FINAL THOUGHTS

The Massachusetts Agricultural Preservation Restriction program is a success. The program's goal to preserve farmlands has broad and deep political support. That the Department staff and Agricultural Lands Preservation Committee have been able to make difficult decisions about how to allocate the program's scarce resources while maintaining overall political support and farmers support is a major accomplishment. The success of the APR program shows that government can engage in value based planning that works, and that conscious policy to intervene to solve agricultural and food dilemmas can be successful. The program staff and committee have much to be proud of.

Evaluating their work we see the following strengths and weaknesses.

STRENGTHS

- 1) The program has saved over 15,000 acres of prime farmland forever. This is wise in the short term and is a potentially extremely valuable future food resource.
- 2) The program has been very successful at preserving farms across the Commonwealth while protecting large blocks of land in the most important agricultural areas.
- 3) The farmland preserved by the APR program is more productive (\$ per acre) than Massachusetts farmland in general.
- 4) The APR program is clearly creating an affordable land market for Massachusetts farmers, and helping them solve ownership and retirement problems.
- 5) Farmers receiving APR funds seem to be reinvesting these monies in ways to improve their farming operations.

WEAKNESSES

- 1) The APR program is overinvested in dairy farming, that is

there are many more dairy farms on the program than is normal given the Massachusetts farm profile. This is a problem because of the long term decline in the dairy industry. Furthermore it highlights the program's tendency to attract farmers at the margins of solvency who want to remain on the land.

2) The limited resources and reactive nature of "preserving agriculture" have hindered long term planning. Despite many program successes planning will improve the programs chances of reaching its objectives.

RECOMMENDATIONS

1) Experiment with a "reconnaissance point system" to evaluate farms applying for the program. This system would work like New Hampshire's point system, except the committee would only use the information to help make their decisions. They would retain all decision making powers.

2) Update the programs criteria for farm selection to better reflect the programs objectives and goals, and to reflect changes in policy since the program's birth. The criteria should reflect that productive farms and farms near other APR farms are given preference.

3) Decide it is agricultural preservation policy to favor dairy farms for purchase of development rights, or severely limit new dairy acceptances until the program reflects the state's agricultural profile. Good planning requires seeing the unpleasant. The economic decline of dairying in Massachusetts is a very powerful trend. The APR program must consciously create a strategy to preserve Massachusetts farms to revitalize agriculture given this crisis in the dairy industry.

4) Engage in long range planning about possible directions for Massachusetts agriculture, and how to use the APR program to produce the positive economic impacts to help create that future.

FURTHER THOUGHTS ON FARM PRESERVATION

This concludes our analysis of the major Massachusetts program to preserve agriculture. Our interest in that program has sprung from beliefs about both the meaning of working the land and the broader than Massachusetts strategies to

redevelop agriculture.

No state agricultural preservation strategy can achieve more than limited success. Only by organizing on a regional level can Northeastern agriculture gain the economic clout, market, and land base to flourish. Poor access to markets and bad terms of trade are the key problems to solve. The most powerful action the Northeastern states could take to revive their agriculture would be to create a regional marketing program with regional advertising, and a Northeast label. Each of the states would agree to promote regionally grown food when and if it was available. While creating this focus farmers would need to organize to influence the markets and work with city people and consumers in the region on creating balanced development between country and city.

This process can easily sound idyllic. It is a powerful, positive, and spiritual goal to connect those who work the land with those who are quite removed from the land. People who work the land, respect, and are humbled in that creative endeavor with nature are keeping all of us in contact with the natural world. Eating their food, and seeing their farms makes that material and spiritual connection even stronger.

As positive and idyllic as our vision of this connection to farmer, land, and food can seem there is another side to it. As Winifred Bresse says "If you don't have farmers you don't have food"!³² Food provides spiritual nourishment. It is also real, material, and necessary for survival. To be politically unable to get adequate food to millions of people in a society as wealthy as ours shows the dark side of not

solving the land and food problems. For if land is a commodity, food too must be one, and those who can't buy it simply will not live. A system that runs on such principles cannot survive. If that system is not changed we too will not survive. In the words of Karl Polyani describing the end result of a system that treats land and labor as commodities:

For the alleged commodity 'labor power' cannot be shoved about, used indiscriminately, or even left unused, without affecting also the human individual who happens to be the bearer of this peculiar commodity. In disposing of a man's labor power the system would, incidentally, dispose of the physical, psychological, and moral entity 'man' attached to that tag. Robbed of the protective covering of cultural institutions, human beings would perish from the effects of social exposure: they would die as the victims of acute social dislocation through vice, perversion, crime, and starvation. Nature would be reduced to its elements, neighborhoods and landscapes defiled, rivers polluted, military safety jeopardized, the power to produce food and raw materials destroyed.³³

Polyani's words written in the mid 1940's, haunt, for they too accurately describe our society. To solve these problems requires starting with the basics. Food is as basic as one can get. Maintaining farms, and our connection to the land gives us hope and vision even while changing some of the irrationality and inhumanity in our world.

FOOTNOTES

1Karl Polyani, The Great Transformation (Boston, Ma.: Beacon Press, 1944), p.72.

2Ibid., p. 178.

3Massachusetts Department of Food and Agriculture, Agricultural Preservation Restriction Program: Recorded APR's. Unpublished document. p.2.

4Ibid.

5Ibid., p1.

6Wendell Flether and Charles Little. The American Cropland Crisis: Why U.S. Farmland is Being Lost and How Citizens and Governments Are Trying to Save What is Left. (Bethesda: American Land Forum 1982) , pp. 3-14.

7Mark Lapping, "Farmland Preservation in the Northeast," cited in Protecting Farmlands. Frederick Steiner et. al.(Westport: Avi Publishing, 1984) , p.176.

8Richard Dunford, "Property Tax Relief Programs," cited in Protecting Farmlands. Frederick Steiner et. al., p. 186.

9Ibid.

10Richard Tustian, "TDR's in Practice: A Case Study of Agriculture Preservation in Montgomery County, Maryland," American Land Forum Magazine, (Summer, 1983), pp. 248-249.

11Gerald Talbert, Maryland Agricultural Land Preservation Foundation. PDR Conference. Hartford, Connecticut, March 12, 1986.

12Ibid.

13Lapping, pp.180-181.

14Massachusetts Department of Food and Agriculture, Saving Farmlands in Massachusetts (Boston, Ma.: Massachusetts Department of Food and Agriculture, 1985) p.2.

15Ibid., pp.2-3.

16Ibid., p.11.

17Ibid., p.3.

18Peter B.Sleeper, "Housing Squeeze Moves West," Boston Globe, 4 April 1986, pp. 21, 23.

19 Steve Taylor. New Hampshire Department of Agriculture. PDR Conference. Hartford, Connecticut. March 12, 1986.

20 Gerald Talbert. PDR Conference.

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23 Credit for the concept of a reconnaissance point system goes to Professor Philip B. Herr.

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27 Interview with Bob Woodruff, Director, APR Program, Telephone , May 1, 1986.

28 Interview with Charles Hammond, New England Crop and Livestock, Telephone, May 2, 1986.

29 Massachusetts Department of Food and Agriculture, Massachusetts Agriculture 1985 (Boston, Ma.: Massachusetts Department of Food and Agriculture, 1986), p. 88.

30 Ibid.

31 Ibid., pp.38-39.

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