

SP 96-05
August 1996



Staff Paper

Department of Agricultural, Resource, and Managerial Economics
Cornell University, Ithaca, New York 14853-7801 USA

Agricultural and Farmland Protection Planning: A Case Study in Orange County, New York

by

Lucy T. Joyce and Nelson L. Bills

It is the Policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age or handicap. The University is committed to the maintenance of affirmative action programs which will assure the continuation of such equality of opportunity.

Agricultural and Farmland Protection Planning: A Case Study in Orange County, New York

Lucy T. Joyce
and
Nelson L. Bills*

Abstract

The Agricultural Protection Act, passed by the State Legislature in 1992, strengthened New York State's Agricultural Districts Law. One component of the Act provides for county Agricultural and Farmland Protection Boards to develop county agricultural and farmland protection plans. The Department of Agriculture and Markets encourages the development of such plans through a matching grants program.

This paper discusses the tools and strategies county Agricultural and Farmland Protection Boards may use in their plan development process. It incorporates an overview of the evolution of state policy, social and economic trends affecting agriculture throughout the state, and resources currently available which may be brought to bear on the local planning process. Using Orange County as a case study, the tools and strategies defined include both an agricultural structure/profitability component as well as land protection techniques.

* The authors are, respectively, agent, Cornell Cooperative Extension-Orange County, Middletown, New York 10940-2400, and professor, Department of Agricultural, Resource, and Managerial Economics, Cornell University, Ithaca, NY 14853-7801.

Agricultural and Farmland Protection Planning: A Case Study in Orange County, New York

Introduction

The debate over the future of New York agriculture continues. Issues such as residential and agricultural land use compatibility, increased traffic on rural roads, public infrastructure development, reduced farm profit margins, dependence on rented land and a growing sense of impermanence by farmers have accelerated the release of land from agricultural production in New York State (Hirschl and Bills, 1994). In response to these pressures, the New York State Legislature passed the 1992 Agricultural Protection Act. This Act strengthened the existing Agricultural Districts Law by including many amendments to the Agriculture and Markets Law, Real Property Tax Law and the Real Property Law (Bills, 1992). One aspect of the Act provides counties with the opportunity to develop and implement local agricultural and farmland protection plans (see New York State Agriculture and Markets Law Article 25AAA - Agricultural and Farmland Protection Programs). The Act expands state policy by providing counties with additional responsibilities and tools in order to encourage wise use of rural land.

The challenge to New York counties is great. Serving in an advisory capacity to county government, newly constituted Agricultural and Farmland Protection Boards replace the previously mandated Agricultural Districts Advisory Committees. The eleven-member board, appointed by the county legislative body, consists of four active farmers and representatives from agribusiness, a local land trust and the county legislative body, as well as the Soil and Water Conservation District Committee Chairperson, a Cornell Cooperative Extension Agent, the County Planning Director and the County Director of Real Property Assessment (Article 25AAA, Bills 1992). These boards are responsible for their county Agricultural Districts Program as well as for developing an agricultural and farmland protection plan.

To encourage counties to develop agricultural and farmland protection plans, the NYS Department of Agriculture and Markets has created a grant program. Upon the availability of funds, the department will provide county boards with matching funds of 50 percent of the cost, or up to \$50,000 for developing a county protection plan (Article 25AAA; Bills, 1992; Joyce, 1993). County boards have the opportunity to influence county agricultural policy as it relates to economic development and land use planning. Following certain guidelines, county boards may develop and implement innovative plans to nurture agricultural land use. For example, from an economic development perspective, county boards might encourage the establishment of a farmers market, producer cooperative, or help identify new agricultural opportunities for farmers. From a planning perspective, boards could assist towns with "agriculturally friendly" master plans and zoning ordinances (Joyce, 1993).

The purpose of this paper is to identify the tools and strategies county Agricultural and Farmland Protection Boards may use to assist in their plan development process. This strategy will incorporate: the perspective of the evolution of state policy; social and economic trends affecting agriculture throughout the state; and the resources currently available which may be brought to bear on the local planning process. Using Orange County as a case study, the tools and strategies defined include both an agricultural structure/profitability component as well as land protection techniques.

Orange County is well suited to this case study as it is located on the edge of the New York City metropolitan area. The county is heavily impacted by its proximity to the City but remains as one of New York State's most important agricultural counties. Moreover, the county Board is motivated to develop a sound and comprehensive agricultural and farmland protection plan, and received of the State's initial farmland protection grants. To provide background for the case study, a subsequent section provides an overview of the structural and economic changes within the agricultural industry in Orange County; where appropriate, these changes are compared and contrasted with those in the State and the Region.

Then the various issues imbedded in agricultural land use planning are explored. It is stressed that public policy education and group decision-making are key components of a successful plan. Communication strategies are recommended. Using Orange County data, the information and resources a county board will need in order to develop a local plan are identified and evaluated. A concluding section presents summary comments and conclusions.

The Orange County Situation

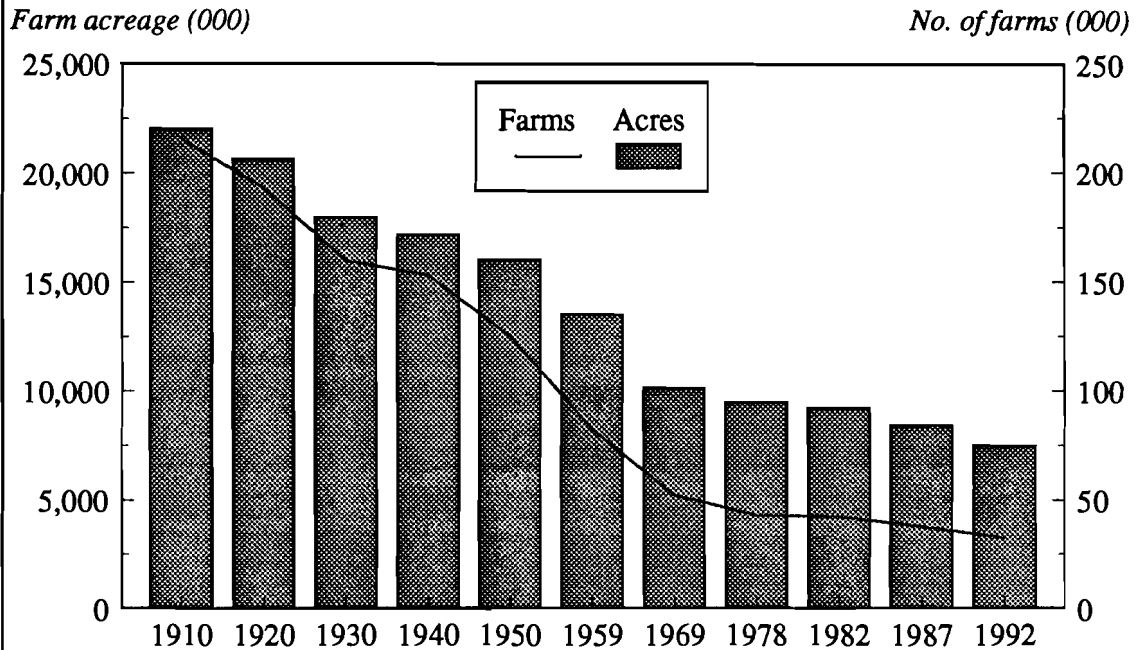
At the turn of the century, the United States was an agrarian society. Farms were diversified and relatively small, averaging approximately 100 acres per farm. In 1910, Americans worked on 5.7 million farms covering nearly 880 million acres. New Yorkers worked on 215,597 farms covering 22,030,367 acres. At that time, farming enterprises utilized 72.2 percent of New York's 30,498,560 acres. By 1992, the number of farms in the United States dropped to 1.9 million but land in farms has remained relatively stable. By contrast and consistent with regional trends, in 1992 New Yorkers worked on only 32,306 farms consisting of 7,458,015 acres or 24.7 percent of New York's land area.

Agriculture in Orange County has proportionally undergone slightly more land use shifts than other parts of New York State. Figure 1 demonstrates the release of farmland statewide, 1910-1992, from 72.2 percent to 24.4 percent - a 47.8 percent decrease. By comparison, Figure 2 shows that in 1910, 74.4 percent of Orange County's land was in farms with 3,935 farms utilizing 387,969 out of the county's 522,479 acres. By 1992, Orange County is home to only 641 farms utilizing 102,733 acres of farmland

Orange County is located in the greater New York/New Jersey metropolitan area. A Hudson River Valley county, it is nestled between the Shawangunk Ridge to the West and the Hudson Highlands to the East. Orange County benefits from an extensive transportation system. Historically, the Delaware and Hudson Rivers, the D&H Canal and development of the railroad network created small, but thriving cities in Port Jervis, Middletown and Newburgh. The railroad system also allowed Orange County farmers to ship milk and dairy products into New York City markets, greatly expanding the local dairy industry (Hull). Later, the development of the New York State Thruway, expansion of New York State Highway 17, and Interstate 84 attracted diversified industries including an expanding distribution/trucking industry. Stewart International Airport in Newburgh, provides both passenger and freight services.

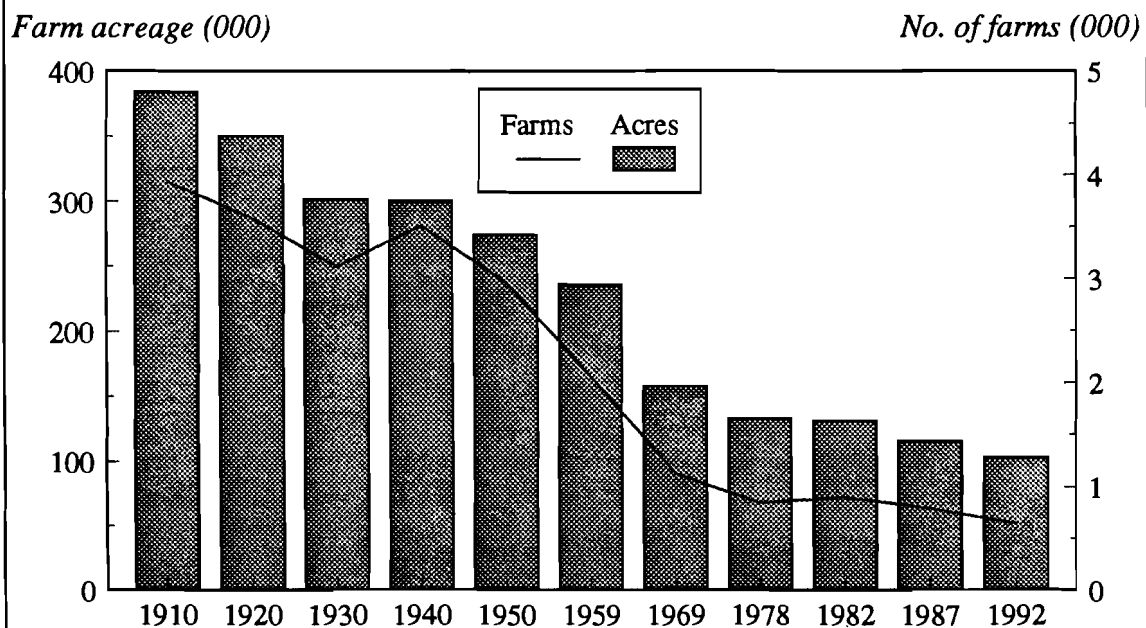
Presently, 20 developed or partially developed industrial parks are located throughout the county. In addition to the leading wholesale and retail trade sector, major employment categories include: services, government, goods producing, and manufacturing.

Figure 1. Number of farms and acres in farmland, New York State, 1910-1992.



Source: Census of Agriculture.

Figure 2. Number of farms and acres in farmland, Orange County, NY, 1910-1992.

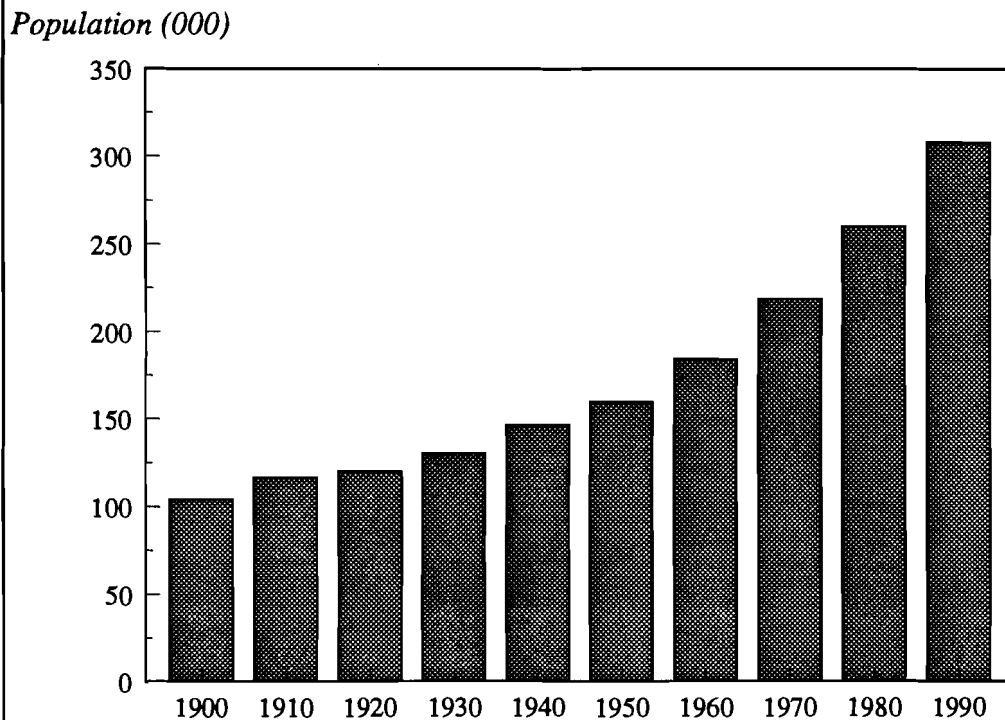


Source: Census of Agriculture.

Rapid in-migration during the past two decades has ordained that Orange County is one of New York's fastest growing counties. The 1980-1990 population growth rate was one of New York's highest (Hirschl and Brown, 1991). See Figure 3 for Orange County population growth 1900-1990.

Orange County is comprised of 40 municipalities -- 3 cities, 20 towns and 17 villages. As can be expected, growth throughout Orange County has been more concentrated in some areas, resulting in suburban communities while other areas have remained fairly rural, albeit residential dwellings increasingly dot the countryside. See Table 1 for population by municipality 1900-1990. Towns surrounding 2 of the 3 cities, that is, Newburgh and Middletown, and towns with access to the major highways have grown in both commercial and residential capacities.

Figure 3. Population growth, Orange County, NY, 1910-1990.



Source: U.S. Bureau of the Census.

Trends in Orange County Agriculture

The development pressures facing Orange County agriculture are great. Yet, and to the surprise of many, the county maintains a strong and robust agricultural industry. Agriculture is a leading industry in Orange County. According to the 1990 Census, most towns reported agriculture as their major industry. Orange County continually ranks in the top ten of all New York counties in terms of gross farm sales. In 1992, 641 farms generated \$74,644,000 in gross sales (Census of Agriculture). Most of these revenue dollars are spent locally on labor, capital

Table 1. Population by municipality, Orange County, NY, 1900-1990.

<i>Towns or Cities</i>	<i>1900</i>	<i>1910</i>	<i>1920</i>	<i>1930</i>	<i>1940</i>	<i>1950</i>	<i>1960</i>	<i>1970</i>	<i>1980</i>	<i>1990</i>
Blooming Grove	2,188	2,110	1,881	1,922	2,312	2,410	3,777	8,740	12,339	16,673
Chester	2,186	2,061	1,803	2,164	2,776	2,878	3,494	4,665	6,850	9,138
Cornwall	4,258	5,690	4,259	5,607	5,299	6,154	8,094	9,614	10,774	11,270
Crawford	1,778	1,659	1,507	1,800	1,786	2,410	2,574	3,760	4,910	6,394
Deerpark	1,317	1,698	1,615	1,779	2,227	2,519	2,777	4,263	5,633	7,832
Goshen	4,564	5,149	5,106	5,182	5,697	5,832	6,835	8,470	10,463	11,500
Greenville	800	644	618	674	732	737	890	1,345	2,085	3,120
Hamptonburgh	1,072	1,168	1,104	1,130	1,086	1,272	1,695	2,175	2,945	3,910
Highlands	4,519	6,133	6,136	7,057	9,307	10,467	11,990	14,549	14,004	13,667
Middletown City	14,522	15,313	18,420	21,276	21,908	22,586	23,475	22,284	21,454	24,160
Minisink	1,505	1,304	1,252	1,360	1,343	1,367	1,433	1,871	2,488	2,981
Monroe	1,784	2,285	2,630	3,000	3,302	5,257	5,965	8,827	14,948	23,035
Montgomery	5,939	7,439	8,351	8,082	8,418	9,868	11,672	13,888	16,576	18,501
Mount Hope	1,236	1,786	1,708	1,847	1,817	2,298	2,291	2,952	4,398	5,971
New Windsor	2,392	2,667	2,984	3,126	3,765	5,100	11,908	16,240	19,534	22,937
Newburgh	4,246	5,132	4,034	5,072	6,092	14,277	15,547	21,348	22,747	24,058
Newburgh City	24,943	27,805	30,366	31,275	31,883	31,956	30,979	25,919	23,438	26,454
Port Jervis City	—	9,564	10,171	10,243	9,749	9,372	9,268	8,768	8,699	9,060
Tuxedo	2,277	2,858	2,355	2,606	2,314	2,281	2,227	2,928	3,069	3,023
Wallkill	2,725	2,578	2,598	3,835	4,753	5,947	8,176	11,429	20,481	23,016
Warwick	6,403	7,141	7,462	8,017	9,369	9,828	12,551	16,437	20,976	27,193
Wawayanda	1,539	1,603	1,689	1,946	2,218	2,435	3,229	3,419	4,298	5,518
Woodbury	1,666	2,216	1,885	1,923	1,960	2,138	2,887	4,467	6,494	8,236

Source: U.S. Bureau of the Census.

improvements, equipment and consumer goods. However, consistent with national and statewide trends, changes in technology and cost/price relationships have spurred a persistent downturn in the number of farms in Orange County and have generated attendant changes in the rural landscape.

In addition to being a leading state and county industry, agriculture utilizes a large land base. Farmland represents more than half of Orange County's 200,000+ acres of open space (Census of Agriculture). Crop and animal production provide a sense of place, community character, economic opportunity and local source of quality food and fiber (Lapping, 1988).

The county's food and agricultural system enjoys tremendous diversity of crops. Vegetable crops recently surpassed dairy as the largest percentage of farm income (Census of Agriculture). A variety of fruits, flowers, sod, nursery crops, livestock and livestock products add to the total.

Vegetable Crops. Orange County's 14,000 acres of muck soil, known locally as "black dirt", is famous for its vegetable crops, particularly onions, lettuce, radishes, sweet corn and pumpkins. Today there are 80 black dirt onion farms producing about half of the state's onions on approximately 5,500 acres.

Marketing continues to be the greatest challenge confronted by onion farmers. Although onion consumption has nearly doubled in the last twenty years, onion acreage in the Western United States and Mexico has risen dramatically. By focusing on the many strengths of their superb cooking onion, developing product recognition and increasing bulb size to meet demand, Orange County will continue to be very competitive in the onion marketplace.

Integrated Pest Management (IPM), an environmentally sensitive approach to managing crop pests using the best of available chemical, biological and cultural controls, has been practiced in Orange County for ten years. Forty-five farmers, growing more than half the county's onions, are enrolled in IPM, and those ranks are growing every year. IPM is also practiced in several other crops.

There are over two dozen commercial vegetable farms on upland soils in the county, including about a dozen small "organic" farms. Most are highly diversified and typically market directly to the consumer. Area orchards have been expanding their vegetable production to enhance their farm stands, and some dairy farmers have been looking to vegetables to boost farm income. Crop diversity provides both a degree of economic security and crop rotations.

Dairy. Orange County is home to 125 dairy farms. A trend toward fewer farms and larger herds will continue in the near future. The average dairy farm milks between 50-60 cows. Due to the high cost of land, the younger generation tends to build equity in cattle and machinery only. The property is often retained by the older generation for their retirement income or to be eventually distributed evenly among their heirs by dividing the land or the proceeds from the sale of the land. This is expected to considerably diminish our productive land base within the next one to two generations.

The rapid fluctuation of milk prices has made many farmers look for alternative sources of income which include: spouses working off the farm, roadside vegetable and craft sales, dual enterprises, custom work, selling excess crops and selling agribusiness supplies. The lack of

labor willing to work for farm wages has farmers purchasing more labor-efficient but capital-intensive machinery such as round balers.

Equine. Orange County's diverse horse industry is growing and changing. The economic climate, changes in public policy and consumer demands have driven these changes. Recreation and pleasure horse activities have grown while the racing stock breeding farms continue to maintain a respectable profile. Over 24 equine associations and clubs have been formed, 2 of which offer riding-for-the-handicapped programs. During the last 10 years there has been an increase in the number of new indoor riding arenas. Today, 31 arenas are located in Orange County. However, riding stables face expensive liability insurance which diminishes profit margins.

The industry ranks first in inventory value in New York State. Approximately 13,000 head are valued at \$80,000,000 in Orange County. Nine Standardbred and 11 Thoroughbred stallions currently stand at stud. In 1994, Thoroughbred Racing Communications, Inc. estimated that the average annual training cost was nearly \$20,000. Goshen is home to the Trotting Horse Museum, and the Historic Track which features Grand Circuit Racing.

Maintaining the historic equine heritage requires a strong infrastructure which encourages growth in the equine business sector. Equine agribusinesses include: 20 large-animal veterinarians, 10 farriers, 47 equestrian instructors, and 15 feed, tack and supply stores. The equine industry supports other businesses such as truck and trailer sales, fence construction, building contractors, hay/straw dealers, and fertilizer, seed and lime salespeople.

Fruit. Orchard acreage has increased within the last decade. While continued increases in acreage seem unlikely, management intensity is increasing dramatically. Apples continue to dominate the fruit industry; however, opportunities for expansion of market share seem limited due to the abundance of both domestic and foreign suppliers. Should market opportunities develop, the Hudson Valley is well positioned to take advantage of the situation because of the industry's national and international marketing network. In addition, the Hudson Valley apple industry has the capacity to store and pack a large percentage of the crop grown, extending the opportunity for marketing the crops over a ten-month period.

In recent years a consolidation of the fruit industry has taken place with larger growers acquiring the most desirable fruit land. These progressive growers are continuing to expand their businesses by installing more intensive planting systems and by investing in their storage and packing facilities. These newer planting systems require more trees per acre which result in an earlier mature crop of higher quality fruit. In today's highly competitive/tight margins business environment, only progressive growers will be able to sustain their farms.

Other tree fruit including peaches, pears, plums and cherries have stabilized. Small fruit is an integral part of the fruit industry, but it is not growing. Research has developed varieties of berries with a longer shelf life which transport well. Competition from the west and south has impacted upon local small fruit sales in the supermarket. "U-Pick" operations and fruit and vegetables in farm markets have become a stable and important aspect of the retail market. They provide the most consistent source of local food, recreation and community character.

Ornamental Horticulture. Commercial ornamental horticulture has continued to expand in Orange County. A wide range of diverse production and service-oriented enterprises fall un-

der this umbrella known as "the green industry". More than 25 greenhouses in Orange County, with over 800,000 square feet under glass or plastic cover, grow bedding plants and other traditional crops. In addition, greenhouses are used to extend the season of field production for both ornamental and food crops. Approximately 2,500 acres of sod are produced in the black dirt region. Wholesale and retail nurseries grow and sell trees, shrubs, and perennial flowers. Christmas tree farms provide "Choose and Cut" products for residents of the area. New niche crops, such as field-grown cut flowers, are quickly gaining in popularity as additions to traditional horticulture and vegetable production farms.

There is a marked trend toward including "farm entertainment" as a market niche for many horticultural enterprises. "U-Pick" operations, ranging from Christmas trees to field cut flowers, allow customers to participate in the farm experience. Hay rides and seasonal events at retail locations often provide a draw for prospective customers. Many retail garden centers also include entertainment in their marketing efforts.

Horticulture service industries have expanded in numbers and in expertise. Over 200 professional businesses offer landscape design, installation, and maintenance services. Some companies have chosen to specialize in order to compete successfully.

Challenges and Opportunities for Metropolitan Agriculture

Agricultural profitability remains the critical factor in maintaining this viable industry. Out of necessity, farmers are learning to identify problems, set goals and look at more alternatives to achieving their goals. In addition, environmental issues they face encompass water quality, pest and nutrient management and wetlands protection. These strong managerial skills will carry many farmers through tough economic times.

The economics of agriculture combined with development pressures impact farming in several ways. Traditional farming, particularly poultry, dairy, field crops and onions, has steadily decreased over several decades. Traditional farms which are succeeding are becoming significantly larger and/or improving farm productivity. Other successful farms are diversifying and developing niche markets. Many farmers in Orange County retail a portion of their harvest and have invested in small-scale processing for added-value products. Other farms have found incorporating agritourism concepts and activities into their product sales, for example, hay rides to U-Pick pumpkin patches, petting zoos and seasonal ornamental displays, yield customers willing to pay for atmosphere as well as products.

To remain competitive, Orange County farmers need to take advantage of the growing population base, adjust to consumer demands and respond to food safety concerns which are being taken out of the scientific and regulatory community.

If fewer farms are producing more on less land, what has happened to released farmland? Throughout New York State, most of the land released from agricultural production has reverted to forestland (Stanton and Bills, 1996). Much of this land, particularly the hill farms, was marginal. As the economics of farming grew more competitive, New York State continued to lose its comparative economic advantage to other regions in the nation, and marginal land became unprofitable to farm. This trend has prevailed not only in New York State, but also throughout the Northeast (Hirschl and Bills, 1994).

This has not been the case, however, in all regions of New York State. Agriculture near metropolitan centers, such as Orange County, has faced the same economic forces which have led to the demise of the "hill farm", but urbanization has facilitated more drastic changes. Difficult to observe when interpreting statistics in the aggregate, the local situation must be understood in order to realize appropriate solutions (Lapping, 1988; Bills, 1994). In growth areas the best agricultural land -- excluding muck soils -- is actively sought for development purposes because valuable agricultural land has characteristics which also make it desirable for development (Gardner and Bills, 1984; Heimlich and Brooks, 1989; Bills, 1989; Bryant, 1975). Long Island, the Hudson Valley and areas surrounding major upstate cities all have experienced tremendous development pressure. In these areas, land has been converted for industrial, commercial, residential and recreational uses. Since good upland cropland contains well drained soils, developers can build on-site waste water disposal systems, avoid wetlands and costly mitigating factors involved with less desirable real estate.

By the middle of this century, tremendous social and economic changes were also taking place within the nonagricultural sector. Following World War II, people moved out of urban areas looking for a better environment and for less expensive housing. Major road improvements, especially the interstate highway system, and low-cost mortgage loans through the Farmer's Home Administration and other federal agencies, facilitated the rapid development of the suburbs. This expansive road network accelerated automobile purchases and provided easy access to work. Through the 1970s and 1980s, the social and economic fabric of the inner cities deteriorated, and businesses also moved into the suburbs. Land values and real property taxes increased with the demand for increased services (King, 1977; Bills, 1989). This has resulted in "leap frog" development. Residents were moving further into what were once rural areas and commuting to the suburbs instead of the cities. Whereas farming once dominated the rural environment, now nonfarm residents far outnumber farmers (Conklin and Dymsha, 1972).

The transition of a rural, primarily agricultural community, to a semi-rural to semi-suburban one results in some conflict (Bryant, 1975). The influx of nonfarm residents has had more impact than just the conversion of farmland to residential or commercial uses. Many of the new residents, drawn to the open space of rural areas, lower housing costs and taxes, often import urban or suburban cultures which prefer manicured lawns, services which their former communities provided, and zoning laws to protect their home investment. Nonfarmers often take exception to the noise, dust and odors which are part of any farm. Increased traffic on local roads escalates the danger of cattle crossings and creates conflict between time-conscious commuters and slow-moving farm vehicles. In addition to neighbor complaints, farmers must deal with a host of other new issues. Trespassing through farmland by those with little respect or understanding results in cut fencing, ATV damage to cropland, loose livestock, and liability concerns (Boisvert and Bills, 1986; Bills, 1986, 1989). Wildlife damage to crops has increased in large part because residential development has curtailed hunters' access to the animals' habitats (Joyce, 1995).

Due to its attractiveness for development purposes, good farmland has become less available for agriculture. With few exceptions, a farmer cannot expect to pay for newly purchased upland acreage with the agricultural earnings potential from that land (Conklin, 1976; Conklin and Lesher, 1977). Therefore, much of the land used in agricultural production, particularly for field crops, is leased from nonfarmers, oftentimes land speculators. Farmers do not know how long rented land will be available to them before it will be converted to another use. Fear of impermanence on rented ground diminishes interest in properly maintaining that ground.

The image of the independent family farmer is an outdated one. Involved in a highly interdependent industry, farmers rely on input suppliers, processors and handlers, veterinarians, equipment dealers and financial institutions (Lapping, 1988). The fewer farms there are to purchase supplies from local agribusinesses, the more fragile the whole industry becomes. Discussion among agricultural economists suggests a "critical mass" of farms must thrive in order to maintain a viable industry (Banach and Canavan, 1987; Lapping, 1988). What that "critical mass" is has yet to be determined.

In metropolitan areas, the combination of the regulatory and economic changes within the agricultural industry, coupled with the aggravation factor associated with farming in the urban shadow, have compounded the effects of economic and structural change (Boisvert and Bills, 1986; Conklin and Dymsha, 1972). Fewer agribusinesses support farms in the urban shadow, and input costs such as taxes, utilities, wages, liability insurance and workman's compensation all work to reduce a narrow profit margin. Town master plans and zoning ordinances have not reflected changing production practices or technology, including building/structure uses, equipment and need for employee housing.

One major structural change with positive effects is many farms in the urban shadow are taking advantage of the population growth by developing high value specialty markets, and including tourism concepts in their "product" line (Pfeffer and Lapping, 1995).

Governor Mario Cuomo proposed strengthening the Agricultural Districts Law during his 1991 State of the State address to help slow the conversion of farmland to nonfarm uses. A modified version of the Governor's bill, developed by the state legislature, passed the following year. The 1992 Agricultural Protection Act was signed by the Governor on August 25, 1992 (Bills, 1992). The Agricultural Protection Act includes many amendments to the Agriculture and Markets Law, Real Property Tax Law and the Real Property Law. Key aspects include enhancing the right to farm provision with a sound agriculture practices review and a home-buyer disclosure notice; strengthening the notice of intent by state agency action; requiring coordination of local land use planning and decision-making; and providing for agricultural and farmland protection plans.

County Agricultural Districts Advisory Committees were reconstituted into county Agricultural and Farmland Protection Boards. The 11-member Board consists of four active farmers, representatives from agribusiness, a local land trust and the county legislative body, Soil and Water Conservation District Committee Chairperson, Cornell Cooperative Extension Agent, county Planning Director and county Director of Property Assessment. These boards are responsible for their county Agricultural Districts Program as well as for developing agricultural and farmland protection plans as provided for in Article 25AAA of the Agriculture and Markets Law. The following two chapters deal exclusively with Article 25AAA.

County Agricultural and Farmland Protection Planning

Section 321 of Article 25AAA outlines the legislative intent of this provision.

"It is hereby found and declared that agricultural lands are irreplaceable state assets. In an effort to maintain the economic viability, and environmental and landscape preservation values associated with agriculture, the state must explore ways to sustain the state's valuable farm economy and the land base associated with it. External pressures on farm stability such as population

growth in non-metropolitan areas and public infrastructure development pose a significant threat to farm operations, yet are the pressures over which farmers have the least control. Local initiatives in agricultural protection policy, facilitated by the agricultural districts program established in Article 25AA of this chapter, have proved effective as a basic step in addressing these pressures. In an effort to encourage further development of agricultural and farmland protection programs, and to recognize both the crucial role that local government plays in developing these strategies, plus the state constitutional directive to the legislature to provide for the protection of agricultural lands, it is therefore declared policy of the state to promote local initiatives for agricultural and farmland protection".

Developing a county agricultural and farmland protection plan is an enormous task (Joyce, 1993). To meet this challenge and to plan for agriculture's future, county boards will need new information, around which important questions arise (AFT, 1993a). First there are public policy and decision-making questions. What communication methods will be the most effective? Who should be involved in the decision-making process? Are some actors in the public policy process advocating certain techniques while others are still defining the issues (Hahn, 1992)? What are the economic and political constraints?

Second, in the midst of this information age, what technical information regarding natural, social and economic resources is available and relevant? Where is the information found? If it is not currently available, can the information be collected in a cost-effective manner?

Third, there are legal/institutional issues about property ownership. What land protection/preservation tools are available to municipalities in New York State? Who are the major land owners in the county? How much of the county's farmland is owned by investors? Agricultural assessments on rented farmland are treated differently than owner-operated farmland. What implications does land ownership have on farm business management decisions and what is the correlation between land ownership and land use change? "The concentration of ownership, land values and changes over time all influence land use change to a far greater extent than a master plan, regulation or zoning ordinance. Despite the significance of land ownership, the academic and political communities know very little about land ownership patterns. There are very few community-level studies on the social effects of concentrated or absentee land ownership" (Popper, 1978). Is it likely that a politically feasible and economically workable plan to manage a community's rural land resources must integrate land owners' values with community goals?

These issues are not new but pose important considerations for Cornell Cooperative Extension (CCE). CCE participation on county Agricultural and Farmland Protection Boards is legislated, and this is a new role for most county Cooperative Extension Agents. CCE has historically provided extensive educational support of Agricultural District creation and review, property assessments, right-to-farm laws, and agricultural zoning. However, less attention has been given to techniques for land resource evaluation, determining the steps to effectively empower local leadership for farmland protection planning, and capitalizing on the potential cooperation between Cornell, state agencies and local capacity to inventory resources and support local decisions on land use planning issues.

Plan Development Support

Recognizing the enormity of developing a comprehensive county agricultural and farmland protection plan, the NYS Department of Agriculture and Markets will provide technical assistance to county boards. Depending upon the availability of funds, the Department will support

county boards with matching funds of 50 percent, or up to \$50,000, for the cost of developing a county protection plan. The local match may consist of cash and in-kind services; however, the county cash contribution must equal at least 10 percent of the state match. The Department has written guidelines for counties to apply for this funding. Counties have one year from the time the funding is received to complete the portion of plan development outlined in their proposal.

Public Policy Education

Public policy education is a critical component of the planning process. It is likely to be brushed aside in the rush to work on data analysis and plan development. Since some board members will have more experience than others with the development of public policy, it will be important to bring the board together, to make sure they adopt a developmental process. Otherwise, board members and others may push for solutions before all the issues are identified.

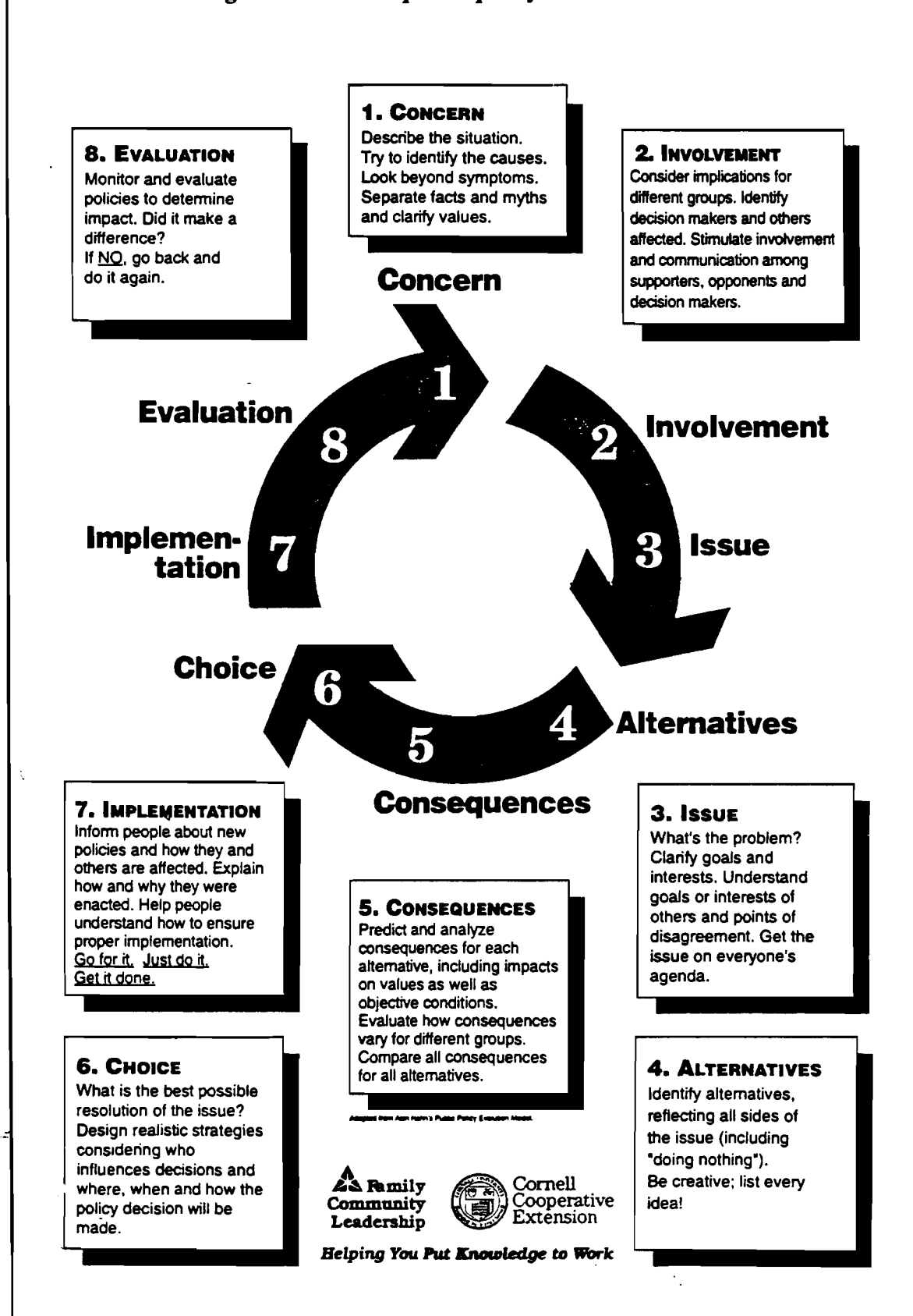
A good place to begin this policy education process is with a goal. What does the board hope to accomplish? For example, a goal might be to develop a county agricultural policy with long-term public support which leads to increased profitability and reduced aggravation for farmers. A mission statement with a time frame determines the type of policies eventually selected. Is this plan to be effective for 10, 20, 50 or 100 years? The board will need to agree on a common vision in order to communicate a unified message. The board should not restrain itself in the early stages. State policy encourages a two-pronged approach -- land protection and economic enhancement -- to ensure the continuation of this important industry. County discussions, outreach, alternatives and final recommendations should reflect this comprehensive approach. In addition, since the county plan is a locally initiated one, it will be important to focus on those concerns which, with a change in local policy, can improve the situation.

Public policy education has two primary objectives: (1) to increase people's understanding of public issues and policy-making processes and improve their ability to participate effectively, and (2) to contribute to the resolution of important public issues by helping people move through the policy-making process (Hahn, 1992). These objectives work for board members as well as various stakeholders. The Family Community Leadership Program sponsored by Cornell Cooperative Extension slightly modified Hahn's Issue Evolution-Education Intervention Model. This revised model, shown in Figure 4, The Issue-to-Public Policy Evolution Model, will work well for county AFPBs.

The circle depicts the stages through which any public issue moves. The outside boxes recommend the type of education or delivery method which will bring both the players and the board to a meeting point, allowing the group to move on to the next stage.

The issue is brought to attention in Stage 1. Someone, or a group of people, become dissatisfied with the *status quo* and believe a change in government policy can correct the problem. People with a concern then move to Stage 2, to garner additional support. They share their concern with others. The issue begins to be defined in Stage 3. People realize that something needs to be done and begin informing decision-makers. Conflict is likely to emerge at this point because some will be pushing for a specific solution before the issues have been clearly defined. In Stage 4, people seek ideas and begin formulating proposals. Various proposals are considered and evaluated in Stage 5. Decisions, or nondecisions, are made in Stage 6. Decisions may result in win-win, win-lose, or lose-lose situations. In Stage 7 the decision is implemented with some type of evaluation in Stage 8, which may start the process over again if the decision was not a wise one, or if the implementation is weak.

Figure 4. Issue-to-public policy evolution model.



As mentioned above, the boxes around the outside suggest the type of education needed for successful resolution of each step. In the case of agricultural and farmland protection boards, the Cooperative Extension agent is positioned to facilitate the board's development through this model. Individual conflicts will diminish if they understand where they and their colleagues are in the model. The importance of having a board adopt an educational process cannot be over emphasized. If the stage is set, each member will feel free to express themselves, which will lead to productive and healthy dissent, not to a frustrated and undermining power struggle.

Once the board embraces the model, they are positioned to use the techniques of the model with various participants. Many different types of communication methods will be needed. In communication with the media and audiences, members will be able to recognize from where the public is coming, and tailor their remarks accordingly.

The model might be improved if it is modified to reflect the county agricultural situation. Hahn points out that most policy development failures are a result of not clearly identifying the stakeholders. Who are the stakeholders? This question is a critical one. Stakeholders are those who are, or will be, affected by a change in policy. Stakeholders must be brought into the process as early as possible, otherwise a well-thought-out plan could be sabotaged by those who feel they had no input. Oftentimes people do not realize how a policy will affect them until the very end. At that stage, they do not have the time to go through the various stages, but they do become very involved. The most obvious examples can be observed with siting waste management facilities. Many people do not become involved in the process until one or more potential sites have been chosen. In these controversial cases, emotions run high, issues become polarized and the decision-making process stalls. The siting of waste management facilities is an extreme example, but very often stakeholders appear late in the process. Some stakeholders will be easy to target -- farmers, landowners, county and town decision-makers, and nonfarm neighbors. But, others may emerge as stakeholders depending on the possible policies or programs recommended. The key, then, is to identify all the stakeholders as early as possible, and target them for inclusion in the process.

How might a board identify all the stakeholders when alternatives have yet to be presented? Early in the process, (stage 1) the board could initially list those who are likely to be impacted. The list will need to be an active one, however, with names being added on a regular basis. Communication strategies will need to be developed for each stakeholder group.

Then the board will need to identify the various issues which affect agriculture in their county. In 1990, the Orange County Executive appointed a Blue Ribbon Panel on Farmland Preservation. The panel conducted round table discussions, identified issues and formulated policy objectives. Likewise, other counties have conducted activities which identify agricultural issues in their communities. Beginning with information which is available, (or conducting a series of public meetings to initially identify issues) break the existing board into issue or task groups. Each Task Group will be responsible for thinking through their issue(s) for the duration of the process. Then divide the stakeholders from the previous brainstorming exercise and place them into the appropriate task group. The task group should be expanded to include representation from all stakeholder groups. It will be the responsibility of each task group to include all the stakeholders who will be affected by their concern as they work through the Issue-To-Public Policy Evolution Model.

Each task group will proceed to work through stages two and three. By working independently of the entire board, the task group can actually roll up their sleeves and hold working

sessions. A comprehensive plan has a better chance of succeeding if they commit to a philosophy of identifying alternative perspectives. As each task group reaches stage 4, they should convene as a board and report their progress.

The full board then can determine if issues which were not previously identified need further consideration. Following recommendations from the board, the task groups can work through stages 4, 5 and 6. Upon the completion of stage 6, the full board should once again convene. Each task group would present a number of alternatives with their intended and unintended consequences, as well as their recommended policy(ies). The full board will need to meet several times during stage 7 in order to submit a comprehensive plan to the county legislature.

Communication Strategies

The county Agricultural and Farmland Protection Board will need to develop a mission statement or overriding goal which will guide how the board functions. Board members will need to agree on certain terminology and have everyone be comfortable with that language. What do the terms agricultural protection and farmland preservation mean? Once the board comes to grips with semantics, the board can communicate with nonboard members using a consistent set of terms.

A number of communication strategies will be needed to accurately reach all the stakeholders and to keep board members informed. A retired newspaper reporter, one who is good at taking ideas and distilling them, could be hired as a communications facilitator. They would be responsible for major communication to the media. In addition to attending all board and task group meetings, he or she could write the minutes and additional papers on the various board activities. This communication could be an informal newsletter for distribution to all board and task group members as well as stakeholders. Newsletters or fact sheets might help to provide specific information for targeted stakeholder groups.

Attracting the attention of the media would elevate the planning process with increased visibility. This would be useful, and board members could capitalize on the media's interest. Radio talk and call-in shows, newspaper human interest stories and regular press releases can contribute to an overall public awareness campaign. Lack of public awareness on agricultural issues is likely to be addressed as part of the comprehensive plan. Beginning this process with public awareness techniques sets the stage for future awareness campaigns. In addition to public awareness, the radio call-in show could help target people by promoting a series. Each week a different topic might be discussed. Listeners would tune in on a topic of interest to them.

The County Executive and County Legislative Representative and/or Legislative Chairperson could kick off the plan development process with a press conference. This would encourage the officials to embrace the planning process, and hopefully support the final plan.

A temptation to refer to nonfarmers as "the public" must be avoided. There is no "the public". Each person, family and community has their own needs and desires and must be considered as such. Some people move to the area because it is rural and agricultural; they enjoy having farmers as neighbors. Others may move here for less expensive housing and/or property taxes. Some have economic interests in property and others have aesthetic interests.

In some cases, and early in the process, open meetings may be appropriate for highly motivated citizens. As the process develops, strategies which provide a deeper and richer ex-

change will be important. Conducted properly, surveys are a useful method for gathering local information. They can also be used as an educational tool. Surveys can be used in the beginning, helping the board to identify issues, but they are expensive and might be more useful during the alternative stage. In an educational context, the survey would describe the issue and ask the respondents for their opinion. The board must be prepared to receive new issues. A random sample survey of about 200 for each major stakeholder group would provide very useful information. The Survey and Research Facility of the Cornell Institute for Social and Economic Research (CISER) will provide tremendous assistance on a contract basis.

Focus groups are often used in marketing research and have recently been modified for use in clarifying public issues. Two types of focus groups come to mind. One consists of 6-10 people from very different backgrounds. The facilitator listens to the points and counterpoints raised. This type of mixed group would be useful in identifying potential stakeholders. The discussion would also give the facilitator a sense of the economic and political constraints. The second type of focus group discussion involves the same number of people, but ones who have similar backgrounds. The discussion would provide depth of information on a particular topic. This type of focus group might be beneficial later in the process when the board or task group is working through a particular alternative. Conducted properly, focus groups take large amounts of preparatory and follow-up time.

Another method of reaching a homogenous audience is to meet with an established organization. Many groups have guest speakers or some type of program in addition to a regular business meeting. Requesting 45-60 minutes would allow a brief overview and time for soliciting their thoughts and concerns. Face-to-face interviews provide the richest exchange possible. Anecdotal information should be followed up with additional data in order to determine its validity. Interviews are time consuming and difficult to reach large numbers of people. One possibility might be to recruit and train a group of interviewers from an established and interested organization, for example, from the county Farm Bureau Board or League of Women Voters. Good volunteers can exponentially extend the outreach efforts of county Agricultural and Farmland Protection Boards.

Data Considerations and Analyses

Before jumping into actual data analysis and generation, it is important to decide what it is that the board needs to know. The information which will be most useful falls into basically three categories -- the identification and location of natural resources, social resources, and economic resources. Unfortunately, there is no one repository of resource information for any given county. Many sources of data and maps exist for these categories. The key is determining which types of data will be most useful, most compatible with other data sets, and most easily converted into visuals.

An important consideration is the depth of data from each source and its compatibility with other sources. A uniform scale is needed. Two scale sizes which appear frequently are the 1:24,000 and 1:100,000. The smaller scale, 1:100,000, is readily available from a variety of sources, especially state and federal agencies. This size may be useful for a county or regional perspective but does not provide accuracy for detail. The larger scale, 1:24,000, will be ideal for more detailed analysis. This scale could be used to "zoom" in on a town or couple of towns. Unfortunately, less information is available at this scale. Some sources are available in electronic form, others are aggregated statistics in chart form, and still others are found as maps.

Orange County is in the midst of ongoing efforts to provide an emergency 911 system. This system will use a geographic information system (GIS) which is electronic mapping. The detail needed by personnel responding to an emergency situation is far greater than the detail needed for planning purposes. Real property assessment has additional detail needs. The county GIS has been in the planning stages for many years now. At the same time, the Orange County Water Authority (OCWA), in an effort to identify potential water supply sources, has been collecting digital natural resource and infrastructure information. OCWA has been able to develop a GIS tailored to their need of identifying potential groundwater supplies and recharge areas. Recognizing OCWA's strength in GIS, implementation of the 911 system has been relocated under the auspices of the Water Authority.

Relevant data sources can be found through federal and state agencies, educational institutions -- primarily Cornell University -- and local agencies and organizations. A review of these main data sources, the available format and its compatibility with other sources for overlay considerations, and estimated cost is provided below.

Natural Resource Inventory

Farming is a land-intensive industry. As such, soils and land use information provide the base for additional natural resource information. A National Resource Inventory, conducted every five years by the United States Department of Agriculture Natural Resources Conservation Service, provides data statistically reliable for state-level information. In Orange County, five points are geo-referenced and used every time the study is conducted. Since a small number of points is used throughout the state, the National Resource Inventory is not conducive for county or multi-county analysis. To obtain a copy, contact the National Resource Inventory Specialist, USDA Natural Resources Conservation Service at their New York State Office.

Soils

United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS -- formerly USDA Soil Conservation Service, USDA-SCS) has mapped most counties in New York State over several decades. These hard copy soil maps are ideal for reviewing individual fields with an accuracy down to the four-acre level. They are suitable for farmers and developers looking at their land's capabilities and limitations. Maps were developed from aerial photographs at the 1:24,000 or 1:15,840 level. Orange County soils are mapped at the 1:15,840 level (or 4" to a mile). Some maps, like Orange County's, were developed from aerial photographs. Other counties' soils have been mapped to be GIS compatible. Others, like Delaware County, were mapped for GIS purposes from the beginning. The hard copy soil maps are not suitable for countywide or even multi-town planning. To be used for community planning purposes, hard copy soil maps would need to be colored by hand, cut and pasted.

A GIS allows the user to create seamless maps and experiment with a number of scenarios. For example, if the user wanted to rate soils according to their suitability for septic systems, the soils could be coded in three colors, light, moderate or severe limitations.

Orange County Soil and Water Conservation District (SWCD) works closely with NRCS. They provide technical information to landowners regarding wise use of their soil and water resources. They also provide soils information to landowners for their agricultural assessment application. The Orange County SWCD maintains a GIS system using GRASS software.

The Soils Information Systems Laboratory (SISL) is a joint venture of the Cornell University Agricultural Experiment Station and NRCS. SISL is a GIS digitizing laboratory, and part of the National Cooperative Soil Survey. SISL provides technical guidance, and GIS mapping services for the soil survey. SISL uses the digital line graph (DLG-3) which allows the transfer from one software package to another. SISL considers the best base map to be a 7 1/2 quadrangle at the scale of 1:24,000 because the 7 1/2 quadrangle is abundantly documented by the U.S. Geologic Survey (USGS). The most commonly used software packages are GRASS and ArcInfo. If there are any discrepancies in the digital format and if the digitization was completed according to their specifications, SISL will correct the errors and stand behind the soil survey. SISL currently charges 12 1/2 cents per acre for soil digitization services.

Land Use

Cornell Laboratory for Environmental Applications of Remote Sensing (CLEARS) is housed within Cornell University's Center for the Environment. CLEARS promotes, facilitates and conducts research and extension programs in the areas of remote sensing, geographic information systems, and resource inventory. In addition to being a focal point for Cornell University in these areas, CLEARS supports local, state, and national agencies through cooperative research, consultation services and technology transfer.

CLEARS maintains a collection of aircraft and spacecraft images including extensive and historic coverage of New York State. They serve as state archive for agricultural district maps. CLEARS is a distributor of New York topographic and wetland maps prepared by the USGS and U.S. Fish and Wildlife Service and New York Land Use and Natural Resource Inventory (LUNR) maps.

One of CLEARS' primary goals is to improve the inventory, analysis and management of environmental resources. In this effort, CLEARS educates and assists technical and policy-making representatives and resource managers. This is accomplished through demonstration projects and workshops. CLEARS will work with a local group to help identify their resource inventory needs. Funding is required for CLEARS staff to actually generate the maps.

The Orange County Water Authority (OCWA) has been digitizing natural resource information. Staff collected data from various state agencies, and installed data sets into their GIS for overlay purposes. OCWA "rubber sheeted" the NRCS Orange County soil maps and USGS topographic maps. From these maps, they have delineated the county's watersheds. OCWA purchased planimetric maps which provide more detail than the NYSDOT quad maps. OCWA has 197 Global Positioning System (GPS) bench mark points and wetlands maps from both NYSD-DEC and USEPA. The EPA generated maps indicate wetlands of one acre or larger, but do require field checking as the original source came from high altitude photographs.

OCWA has developed maps for each municipality which identifies potential sources of groundwater supplies. Cracks in bedrock and sand and gravel aquifers are highlighted on these maps along with potentially hazardous facilities which may contaminate groundwater. Municipal officials will still need to conduct field inspections to determine if the cracks in bedrock are located in a place from which a municipal well could be developed.

OCWA staff are sharing the information generated through their GIS with the Orange County Agricultural and Farmland Protection Board. For example, they have generated soil

maps for several towns in which the soil classifications were consolidated into three general categories for easier analysis. OCWA staff will be overlaying these soil categories with the agricultural districts maps and property ownership.

Orange County Department of Planning maintains the most information in the county regarding land use and transportation. The department has hard copy maps at the 1:2400 level on roads, water bodies and the numerous districts which are part of a growing county. The department is beginning GIS programming using ArcInfo. Staff utilize TIGER (Topologically Integrated Geographic Encoding and Referencing) files to publish county statistics, graphs and maps using census data. Due to the purchasing, planning and budget guidelines a county department must follow, GIS equipment and training are limiting factors in the department.

Orange County Department of Real Property Tax Services maintains up-to-date computer records of land use according to local assessment. This department is responsible for the county tax parcel map. A new program is expected to be installed shortly which will allow the manipulation of data to analyze information such as property ownership and percentages of land use by category.

Wetlands, Watersheds and Waterbodies

New York State Department of Environmental Conservation (DEC) has regional offices located throughout New York State. The main office is located in Albany. DEC identifies and regulates wetlands throughout the state which are a minimum of 12.4 acres. DEC wetland-delineated maps are classified according to size as well as according to significance on a 1-4 level. NYS freshwater wetlands planimetric hard copy maps (based on NYSDOT quadrangles) are available for \$2.00 by ordering through Syracuse Blue Print Co., Inc.

The Division of Fish and Wildlife, Habitat Inventory Unit, is responsible for the storage and distribution of official NYS wetlands maps. While this Unit does not directly distribute the hard copy maps mentioned above, they do maintain a wetlands GIS system using ArcInfo software. They are equipped with a limited ability of data conversion. A letter requesting the data and the type of operating system used is needed to receive electronic data. Staff suggest clients call first to better define their needs.

DEC's Division of Water is developing hydrography maps -- a network of streams, lakes and ponds. Currently, electronic data exists on the scale of 1:100,000. The Division of Water is developing data at the scale of 1:24,000 which is more appropriate for county level boards. Data for some parts of the state are already available, e.g. the NYC watershed.

United States Environmental Protection Agency (EPA) conducted a National Wetlands Inventory, using high altitude photographs and digitized the information identifying wetlands as small as an acre in size. The Orange County Water Authority secured National Wetlands Inventory: Status and Trends of Wetlands in Orange and Rockland Counties. The study compared wetlands using photographs from 1980 and 1990.

Social Resource Inventory

The Cornell Institute for Social and Economic Research (CISER) provides research services to Cornell faculty. In order to support research, CISER provides access to its extensive Data Archive, New York State Information System, and the Survey Research Facility (SRF). The SRF helps prepare, collect and process both phone and mail surveys. Beyond faculty projects, SRF staff also offer consulting services to other clients with a Cornell University affiliation, assisting clients in questionnaire development, production and evaluation.

CISER data sets which may be of particular use to county AFPBs include: Census of Agriculture from 1949-1992; Census of Wholesale and Retail Trade 1972-1982; County and City Data Book 1952-1988; Crop Estimates 1939-1986; NYS Farm Family Data Base; and Census of Population and Housing 1910-1990. The Department of Rural Sociology, College of Agriculture and Life Sciences, Cornell University, offers assistance regarding the use of census data through Cornell Cooperative Extension. The department supports faculty specializing in demography who can help interpret demographic trends.

CISER has a TIGER/Census Tract Comparability file which can produce geo-referenced maps in hard copy or electronic form by contracting with CISER through CLEARs.

The New York State Office of Rural Affairs, an agency devoted to rural concerns state-wide, was eliminated last year. This office developed Rural Assistance Information Network (RAIN), an electronic network system which provided extensive information for the price of a phone call. RAIN was to have been moved to the NYS Department of State but is currently not online. Therefore, the New York State Legislative Commission on Rural Resources is willing to serve as an information center to direct calls to the appropriate agency or department. The commission maintains a catalogue on sources of federal and state funding and will conduct limited library research.

Economic Resource Inventory

US Census of Agriculture conducts surveys every 5 years, with the most recent having been completed in 1992. The Census of Agriculture has more depth than other data sources on agriculture. The Census provides breakdowns by commodity and county; it includes financial as well as production data. Both CISER and the Department of Agricultural, Resource, and Managerial Economics, College of Agriculture and Life Sciences, Cornell University, maintains county-based data in electronic format for Census years between 1950 and 1992. More extensive information for 1982, 1987 and 1992 can be accessed on CD-ROM at Mann Library, Cornell University. Also, CD-ROMs can be purchased from the US Census Bureau at a reasonable price for in-office use.

United States Department of Agriculture Economic Research Service (USDA-ERS) collects some preliminary data and uses Agriculture Census data to find trends. ERS focuses on national and statewide financial data; county-level data are available only to the extent that census data are manipulated to facilitate analysis. Statewide data may be useful to see how a county may fall within the state, but good local data are more important for county efforts. ERS data can be accessed electronically with the Cornell Bear Access gopher server.

New York State Agriculture Statistics Service is a joint federal-state venture with the USDA's National Agricultural Statistics Service (NASS). NASS provides yearly estimates of:

number of farms, land in farms, production, and income by state. Considerable county-level information is available. This information is updated annually in July.

New York State Department of Transportation (DOT) is responsible for producing and maintaining several of the state's base map series. The Map Information Unit within DOT has tremendous amounts of information which may be useful for county AFPBs. The department produces and maintains a large selection of both electronic and hard copy maps. In addition to a 4-sheet New York State map at the 1:250,000 scale, DOT distributes 1:24,000 scale planimetric and topographic maps (7.5 minute quadrangles), and 1:9600 scale planimetric maps covering urban areas and village/hamlet atlases available on paper or film. Special Highway Corridor Maps at the 1"=200' topographic maps are available, though usually along rather narrow corridors.

DOT's Mapping Services Bureau is in the process of digitizing county-level maps. The planimetric and topographic quadrangles are now available as digital raster files for quadrangles revised since 1990. These files duplicate in digital form the map image which appears on the corresponding printed 1:24,000 scale map. The files are raster images composed of pixels, and are not vectorized for use as intelligent GIS layers. The files are offered in TIFF (Tagged Image File Format) and may be used with a variety of mapping or GIS software packages. County Base Map Files contain five data categories: roads, boundaries, hydrography, miscellaneous transportation (railroads, airports, transmission lines, etc.) and names. By the end of 1993, 15 counties were completed. The Department intends to digitize all counties.

New York State Office of Real Property Services (ORPS) has developed a mature data base with many layers of data by trading with other GIS users. ORPS' GIS policy allows public access to all layers of data. Their data is available in Standard format for the cost of reproduction. They will customize files to match a user's system for an additional fee. All requests must be in written form. A Geographic Data Dictionary identifies the statewide and county data available from this office. ORPS has data from 1:2,000,000 for state roads down to 1:4800 for school district boundaries. Their GIS library consists of data from sources such as USGS, tax maps, NYSDOT and internal development.

New York State Comptroller Office publishes information on revenues and expenses for each school district and municipality in the state.

Farmland Ownership and Use Patterns

According to the Orange County Department of Real Property Tax Services, over half of the county's agricultural land is owned by nonfarmers. The percentage of farmer-owned land tends to break down according to commodity. Most fruit farmers, particularly tree fruit, own their own land and rent very little. The investment a farmer makes in his or her orchard before yielding any returns is tremendous. Conversely, dairy and field crop farmers often rent more than half their cropland. Locally, the rental rates range between 0-\$30/acre/year, depending on the location, soil type and convenience. Nonfarm farmland owners, for the most part, are delighted to rent their land to farmers in order to realize the benefits of an agricultural assessment. While all landowners are investors to some degree, the extent to which this land is being held by investor/developers is not quantified at this writing. Rented land not only provides a source of livestock feed but also provides the land base necessary for proper manure management.

Many farmers benefit from renting a large portion of their land. The cost of renting (except for muck soil), is often not much more than the cost of property taxes. And tenant farm-

ers are not burdened with purchase and interest costs. On the other hand, farmers are not guaranteed that rented land will always be available for agricultural purposes. Farmers may be unwilling to invest in their own farm's infrastructure if they do not control the use of the cropland. The impermanence of not knowing from year to year which cropland will be available, seriously affects the future of farming. (Boisvert and Bills, 1986; Conklin and Dymsha, 1972; King, 1977).

County Real Property Tax Directors may be able to provide the most county-wide information regarding land tenure. Town and village property tax assessors should be able to provide more detail at the municipal level. Unfortunately, there seems to be variation among local assessors in regards to land classification and assessment values.

Policy Alternatives

As mentioned above, state policy encourages a two-pronged approach -- economic enhancement and land protection -- to ensure the continuation of the agricultural industry. The area of agricultural economic development has proved to be elusive but is politically and socially attractive. On the other hand, clearer examples of land protection techniques abound, but seem less politically or economically acceptable in New York State.

Agricultural Economic Development

County Agricultural and Farmland Protection Boards may choose to pursue a policy of increasing agricultural economic activity. Those involved with the agricultural industry realize the best way to protect farmland is to keep farming profitable. The Orange County AFPB is emphasizing this prong in their plan by recommending the hiring of an Agricultural Economic Development Director. This paper is not intended to cover the efforts individuals can make on their farms. In addition to Cornell Cooperative Extension Agents, many consultants work directly with individual farmers on production concerns and farm business management. Two programs in the College of Agriculture and Life Sciences at Cornell University, the Farming Alternatives Program and the Small Business Retention Program, are designed to help farms and businesses expand, change, add value, or otherwise develop more profitable enterprises. Therefore, the resources and discussion below focus primarily on group and/or community policy approaches to increasing agricultural profitability.

On the surface, the task of increasing agricultural profitability may seem daunting. Prices for many products are based on a global economy (Boisvert and Bills, 1986). However, local, state, national and foreign examples prove that policies of a grower organization, local government or community can influence both profits and morale. In an area like Orange County, farmers who are most likely to prosper are those who position their farms to take advantage of a growing population or otherwise creatively reduce input costs (Pfeffer and Lapping, 1995b).

Many communities throughout the Hudson Valley have already established, or are interested in establishing, a farmers' market. Farmers' markets in five communities in Orange County provide a substantial source of income for a small number of growers. The markets and farmers who participate in the Farmers' Market Nutrition Program are afforded an additional source of customers. This state and federally funded program provides selected low-income residents who participate in either the WIC (Women, Infants and Children) program, or older adults who enroll in the Office for Aging congregate feeding sites, with coupons which can only be used in a farmers' market. The beauty of this program is that it guarantees fresh, healthy produce for the customer, a source of income for the farmer, a cultural exchange between urban

residents and farmers, and assists with downtown revitalization efforts. Communities which locate farmers' markets in well traveled areas and qualify for the Coupon Program, find themselves in a win-win situation.

Municipalities can encourage agricultural economic development by creating a "farmer-friendly" environment. Zoning ordinances can be written which reflect the true nature of a farm -- it is comprised of residential, manufacturing, equipment repair, waste management, wholesale and sometimes retail activities. Housing often needs to be provided to farm workers, especially in high rent areas like Orange County. Restricting farmers' ability to build labor housing also restricts their ability to compete in the labor force. While the Agricultural Districts Law limits a municipality's right to restrict normal farm practices, in reality, a municipality can create enough frustration to cause farmers to throw in the towel. In this same regard, a traditional wholesale grower may decide to modify his/her operation to include a retail component. Some type of retail facility may need to be constructed. A town which encourages farmers to make the necessary changes and helps them with the building process will go a long way toward retaining farmland in their town.

The Orange County Vegetable Improvement Cooperative Association, Inc. was established in the late 1960s to support research on muckland vegetable crops, primarily onions. In 1989, as a result of a long period of poor weather and market prices, the Association expanded their purpose to include marketing efforts. After securing a grant in 1990 from the New York State Urban Development Corporation, the Association created a broad-based Task Force and three Working Groups. Following the recommendations of these groups, a consultant was hired. A valley-wide marketing cooperative seemed unfeasible for a number of reasons, but efforts to develop and market the higher quality yellow globe onions were initiated. By 1993, a logo clearly identified Orange County onions. Additional moneys secured through the NYS Department of Agriculture and Markets Seal of Quality Program allowed for two supermarket chains to hold special events promoting the Orange County onion. Store managers noted a sharp increase in onion sales during the promotion. Clearly, ongoing marketing efforts are necessary to enable growers to benefit financially.

Orange County farmers are reluctant to embrace farmer cooperatives. When the Regional Cooperative Marketing Association (RCMA) was formed, only half of Orange County dairy farmers supported this effort. As a result, emotions ran high and were polarized. Those farmers who were independent and not involved with a milk cooperative were opposed to this cooperative marketing effort. The onion industry has tried various cooperative marketing efforts with negative results. Not only did the several efforts fail, the negative perception has lingered. Therefore, the formation of a farmer marketing cooperative association in Orange County seems unlikely in the near future.

The proposed Agricultural Economic Development Director will have the ability to circumvent the problems associated with a farmer cooperative. The director will be empowered to assist farmers "make deals", find new sales outlets, and bring sellers and buyers together. For example, many local restaurants would be pleased to feature local produce when available, but need assistance locating interested growers who could meet their needs. The director could make such contacts happen.

Orange County's economic development agency, The Orange County Partnership, has demonstrated much success in bringing distribution and manufacturing industries to the county. Most of the facilities have been located in industrial parks. However, some industrial parks are

located on excellent agricultural soils. The Agricultural Economic Development Director would work closely with the Partnership President and CEO in two ways: (1) help attract agriculturally related business (e.g., food packaging and processing); and (2) bring an emphasis on agriculture to the economic development table. In this forum, the existing Orange County Industrial Development Agency (IDA) funds could be used in support of this position and to attract identified businesses.

Land Protection Techniques

New York State was recognized as innovative for its establishment of Agricultural Districts in 1971. A review of literature on this subject indicates the New York Agricultural Districts Program was discussed and evaluated throughout the nation. Except for continual tweaking of the existing law, state policy remained relatively unchanged until 1992. However, some communities took action. Suffolk County became the first governmental entity in the nation to adopt a Purchase of Development Rights Program for the purpose of preserving agricultural lands (AFT, 1993). Today, all states in the Northeast, except New York, have established Purchase of Development Rights Programs (Pfeffer and Lapping, 1995a).

The best single source of information on land protection is American Farmland Trust (AFT). Founded in 1980, AFT is a national, nonprofit conservation organization dedicated to the protection of America's best farmland. AFT produces numerous publications and newsletters describing the many land protection tools which are being used around the nation. AFT's local office specializes in issues, policy development and legislation in New York State. Their publication, *Agricultural and Farmland Protection for New York*, provides an overview of the many farmland protection techniques available to county AFPBs. Abbreviated definitions of various land protection techniques described in the AFT publication are listed below (AFT, 1993a):

Conservation Easements. Legally recorded, voluntary agreements that limit land for specific purposes. They are negotiated between willing landowners and qualified conservation or government organizations.

Purchase of Development Rights (or Easements). A program to buy a conservation or agricultural easement. The landowner generally negotiates a price between the land's development value and its agricultural value. The land remains in private hands and is subject to property taxes.

Leasing of Development Rights. A term easement where the lease is a legal restriction on the development rights drawn up for a specific period of time. This technique has been rarely used.

Transfer of Development Rights. A somewhat complicated program where development rights are purchased by the private sector in an area zoned for open space and transferred for use in another location zoned for increased development. The landowners whose property lies in the protection areas are assigned development credits and developers who buy these credits are allowed to build at higher densities in other areas. As in PDR, once the development rights are sold, the easement is legally recorded and becomes part of the title of the land.

Property Tax Relief. To offset the difference between the development value and agricultural value of farmland, every state has passed some type of tax relief.

Additionally, local options include property tax abatements in exchange for term easements of some kind. Three towns in Monroe County, Penfield, Perinton and Webster have enacted local tax abatement programs.

Purchase or Donation of Land. The purchase by a governmental body or the donation of land by a landowner to a conservation organization.

Right-to-Farm Laws. A law designed to protect farmers from nuisance suits and local ordinances limiting farm practices. These laws are particularly useful in areas where agricultural/residential conflicts are likely to occur.

Agricultural Zoning. A regulatory approach to maintaining farmland. Instead of the typical agricultural/residential zones prevalent throughout New York State, this technique limits nonfarm uses and the development potential of the land. To be effective, farming must be profitable in the area.

Other Zoning Regulations in Support of Agriculture. In addition to agricultural zoning, cluster zoning, buffer districts and other mechanisms can support the farmland owner by discouraging neighbors in close proximity to farms.

Subdivision Regulations. These useful tools include agriculture protection overlay districts, performance standards, buffer strips, etc. At the time of application, the developer is informed of criteria which should reduce tensions between farmers and nonfarm residents.

The Orange County Land Trust (OCLT), formed in 1993, recently consummated their first easement transaction in the Town of Wawayanda. OCLT works closely with larger land trusts with whom they have access to expertise. The OCLT Board is a working one, with no paid staff at this time. OCLT Board members recognize the importance agriculture plays in maintaining open space. OCLT Board members stated at the AFPB Public Hearing that they look forward to working with the AFPB when appropriate.

The Orange County Citizens Foundation (OCCF) is a local nonprofit organization dedicated to balancing environmental and economic concerns. OCCF is legally able to hold easements and property. Recently a large estate was willed to the Citizens Foundation. The estate buildings (house and barn) are undergoing considerable repair to maintain the integrity of the property. OCCF sponsors educational seminars, networks with other profit and nonprofit organizations and devotes its resources to promoting wise land use planning. The OCCF Executive Director, aware of the Orange County AFPB's interest in Transfer of Development Rights, indicated interest in sponsoring an educational meeting on the topic in the near future.

Summary and Conclusions

The agricultural industry provides New York State with an extensive economic foundation and a working rural landscape. While the Agricultural Districts Law remains the centerpiece of state policy and legislation, the law alone cannot stop the continued reduction of farmland. In response to weaknesses within the law, the Agricultural Protection Act passed in 1992 to provide more strength to the Agricultural Districts Law and to provide a locally initiated mechanism for

agricultural and farmland protection. The Department of Agriculture and Markets supports the development of county plans through a matching grants program.

The ability of County Agricultural and Farmland Protection Boards (and county governments which must approve these plans) to positively influence either agricultural profitability or farmland preservation remains to be seen. Conducted properly, the tasks associated with developing a plan are overwhelming. As discussed previously, voluminous data exists in many categories, but it will require tremendous resources to compile the appropriate data and put it into a form which can be readily used by AFPBs. Geographic Information Systems offer many advantages over traditional hard copy maps. Many software programs exist and many state agencies are using some form of electronic mapping. While the initial costs are expensive, the ability to overlay certain data layers with several strokes of the computer surpasses hours upon hours of hand drawing maps.

Unfortunately, there does not appear to be any consistency within the state regarding software use or dissemination. State agencies with GIS capabilities will usually convert the data from one software package to one compatible with the user. Are the many overlays containing data from different sources accurate? Not only is GIS equipment expensive, but the training and updating are also expensive. Digitizing is very time consuming. Which county departments or agencies will take on the GIS leadership role? In Orange County, the Orange County Water Authority has taken the leadership in developing the GIS and 911 systems. How accurate are maps generated from several sources of data -- all of which had been converted from different software programs?

New York State ought to take leadership in this area. It is unrealistic to expect county AFPBs to properly identify farmland to be preserved and to create accurate agricultural district maps without state leadership. Recognizing the unpopularity of former Governor Nelson Rockefeller's statewide planning initiative, it appears future efforts toward statewide or regional planning are unlikely. The creation of the 1992 Agricultural Protection Act, with its provision for the development of county agricultural and farmland protection plans, is an effort to compensate a relatively flawed land use planning system. While New York State relegates most land use decisions to towns, cities and villages, counties have little influence over land use in New York State. Yet, agricultural districts, and now county agricultural and farmland protection plans, are approved at the county level.

At the very least, it should be the responsibility of the various state agencies to provide information to these county boards in a form which is compatible and easily utilized by county-level professionals. For example, NYS Office of Real Property Services is digitizing school districts. Why not digitize other special districts as well?

Orange County's master plan, created in the 1970s, directs development into areas surrounding existing development, that is, 3 cities, 17 villages and hamlets. In reality, suburbanization has spread throughout the county. Town zoning ordinances have not reflected the vision portrayed in the county master plan. Without major changes to New York Land Use Law, transportation costs, and/or lifestyle preferences for "country" or suburban living, significant farmland preservation measures seem unlikely. Be that as it may, if an "agriculturally friendly" environment is an intended outcome, a successful county Agriculture and Farmland Protection Plan must incorporate a vigorous strategy involving town councils and planning boards.

Many counties have taken leadership in the area of economic development. Therefore, AFPBs may be more successful in developing effective strategies for increasing profitability

through county initiatives. In an era of mid- to large-size company down-sizing (or "right-sizing"), county economic development officers are looking for small business retention and growth. The restaurant and retail sectors show very high turnover rates. While the number of farms is continuing to decline, farming is still considered a very stable business which makes the agricultural industry look attractive to policy makers. Relationships with county economic development officers, industrial development agencies and regional chambers of commerce can be forged. County AFPB members should learn about their county's economic agenda and design a strategy to incorporate agricultural enterprises within the county economic agenda.

Highly motivated, the Orange County AFPB was one of four counties to apply for the first round of planning grants through the Department of Agriculture and Markets. See Appendix C for the Orange County Agricultural and Farmland Protection Plan. Based on the knowledge of the authors, combined with the recent experience of the Orange County AFPB, the following steps are recommended for other counties beginning to embark on this planning process:

During the grant application process, discuss the vision the AFPB has for the future of local agriculture, goals of the plan, and time period for which the plan will be written. Commit to a public policy education process. The Orange County AFPB focused primarily on short-term goals. Review the historical data and trends affecting agriculture in the county. What nonagricultural influences affected changes in local agriculture the most? Orange County's extensive transportation system and close proximity to New York City and its suburbs caused steady population increases and higher land values.

Locate resources which can be used to help with both technical and process/communication needs. Members of the Orange County AFPB traveled to Cornell University for a one-day intensive training workshop. They met with faculty from the Departments of Agricultural, Resource, and Managerial Economics; Communication; Natural Resources; the Community and Rural Development Institute; the Survey Research Facility and CLEARs. The workshop was well received by both AFPB members and faculty. AFPB members learned about valuable Cornell University resources and faculty learned about the strengths and limitations of county AFPBs.

Identify or hire a staff person dedicated to the plan development process. A major portion of the Orange County grant was allocated for a 3/4 time position. The AFPB determined that existing staff from the agencies represented on the board would not be able to focus on the tasks outlined in the grant proposal to the extent necessary. Fortunately, an outstanding individual was hired.

Conduct surveys to involve many people in the process. Identify the stakeholders. Develop communication strategies to reach various segments of the population, including the use of mass media. Surveys to both farmers and agribusinesses verified the issues raised by the Orange County AFPB as well as served as a recruitment tool for involving others in the plan development process.

Hold focus groups and grower meetings to prioritize the issues and develop appropriate solutions to problems. Ideally, such meetings are held during the off-season for maximum grower participation.

Involve the elected officials throughout the plan development process. Be sure to obtain active participation by the agency and department head representatives on the county AFPB. The

Bibliography

- Agricultural Landscape, The. 1990. A Policy Recommendation for the Hudson River Valley Greenway by the Agriculture Advisory Committee. Hudson River Valley Greenway Council, Albany, NY.
- American Farmland Trust. 1993a. "Agricultural and Farmland Protection for New York." Northeastern Office, 1 Short St., Northampton, MA.
- American Farmland Trust. 1993b. "A Guide to Agricultural Conservation Easements." Northeastern Office, 1 Short St., Northampton, MA.
- American Farmland Trust. 1987. "A Survey of Geographic Information Systems - for Natural Resources Decision Making." 1920 N. Street, NW Suite 400, Washington, DC.
- Banach, Melisa and Denis Canavan. 1987. "Montgomery County Agricultural Program. " *In Managing Land-Use Conflicts*, edited by David J. Brower and Daniel S. Carol, Duke University Press, Durham.
- Bills, Nelson L. 1994. *Policy Issues in Rural Land Use*. Vol. 7, No. 3, Department of Agricultural Economics, Cornell Cooperative Extension, Ithaca, NY.
- Bills, Nelson L. 1992. *Policy Issues in Rural Land Use*. Vol. 5, No.3, Department of Agricultural Economics, Cornell Cooperative Extension, Ithaca, NY.
- Bills, Nelson L. 1991. "Urban Agriculture in the United States." Cornell Agricultural Economics Staff Paper, No. 91-21, Ithaca, NY.
- Bills, Nelson L. 1989. *Policy Issues in Rural Land Use*. Vol. 2, No. 4, Department of Agricultural Economics, Cornell Cooperative Extension, Ithaca, NY.
- Boisvert, Richard N. and N.L. Bills. 1986. "Farmland Protection in New York State." *Toward a Long-Term Strategy for Farmland Protection and Soil and Water Conservation in New York*, published for Mario M. Cuomo, Governor, New York State. Albany, NY.
- Bryant, William R. 1975. "Farmland Preservation Alternatives in Semi-Suburban Areas." NYS College of Agriculture and Life Sciences, Department of Agriculture Economics, Cornell University, Ithaca, NY.
- Cantrell, Patricia. 1991. "The Food and Agriculture Workbook." Workbook Number 3, Rocky Mountain Institute, Economic Renewal Program, 1739 Snowmass Creek Road, Snowmass, CO.
- Census of Agriculture 1925, Part 1. 1927. US Department of Commerce, Bureau of the Census, Government Printing Office, Washington, DC.
- Census of Agriculture. 1992. US Department of Commerce, Bureau of the Census, Government Printing Office, Washington, DC.

- CLEARs. "New York State Land Use and Natural Resource Inventory LUNR Classification Manual." Cornell Laboratory for Environmental Applications of Remote Sensing, Cornell University, Ithaca, NY.
- Cohen, Eleanor M., ed. 1983. "How Can Land Be Saved for Agriculture?" Proceedings of a Working Conference to Find Solutions for California. April 18 & 19 1983. California Institute of Public Affairs - An Affiliate of the Claremont Colleges.
- Conklin, Howard E. 1988. "An Historical Perspective on Some Aspects of Rural Land Use Guidance." Our Disappearing Farmland: Proceeding of the Farmland Conference, SUNY Cobleskill, July 28, 1988. Cosponsored by NY Farm Bureau.
- Conklin, Howard E. 1976. "Property Tax Incentives to Preserve Farming in Areas of Urban Pressure." Staff Paper #76-2, NYS College of Agriculture and Life Sciences, Department of Agriculture Economics, Cornell University, Ithaca, NY.
- Conklin, Howard E. Interview by author, May 9, 1994, Ithaca, NY. Notes.
- Conklin, Howard E. and William Bryant. 1974. "Agricultural Districts: A Compromise Approach to Agricultural Preservation." *American Journal of Agricultural Economics*, 56(1974): 607-613.
- Conklin, Howard E. and Richard Dymsha. 1972. Maintaining Viable Agriculture in Areas of Urban Expansion. Albany: New York State Office of Planning Services.
- Conklin, Howard E. and William G. Leshner. 1977. "Farm-Value Assessment as a Means of Reducing Premature and Excessive Agriculture Disinvestment in Urban Fringes." *American Journal of Agricultural Economics*, 59(1977): 755-759.
- Daniels, Thomas L., John W. Keller and Mark B Lapping. 1988. *The Small Town Planning Handbook*. Planners Press, American Planning Association, Chicago IL.
- Dysant, Benjamin C., III and Marion Clawson, ed. 1989. *Public Interest in the Use of Private Lands*. Praeger Publishers, NY, NY.
- Ervin, David E., James B. Fitch, R. Kenneth Godwin, W. Bruce Shepard, and Herbert H. Stoevener. 1977. *Land Use Control Evaluating Economic and Political Effects*. Oregon State University, Ballinger Publishing Co., Cambridge, MA.
- Ferry, Tracy C. 1996. Presentation on "Who Will Farm". Farming For the Future Conference, Sponsored by Cornell Farming Alternatives Program, Cornell University, Ithaca, NY, February 29, 1996.
- Galie, Peter J. 1991. *The New York State Constitution: A Reference Guide*. Greenwood Press, Westport, CT.
- Gardner, Kenneth and Nelson L. Bills. 1984. "New York: A Pioneer in Farmland Retention." *New York's Food and Life Sciences Quarterly*, Vol. 15, No.3, College of Agriculture and Life Sciences, Cornell University Media Services, Ithaca, NY.

- Geisler, Charles C., Nelson L. Bills, Jack R. Kloppenburg, Jr. and William F. Walters. 1983. "The Structure of Agricultural Landownership in the United States, 1946 and 1978." *Search: Agriculture*, Number 26, Cornell University Agricultural Experiment Station, NYS College of Agriculture and Life Sciences, Ithaca, NY.
- Gottsegen, Amanda Jones and Charles J. Gallagher. 1992. "Planning for Transfer of Development Rights: A Handbook for New Jersey Municipalities." Published for Burlington County Board of Chosen Freeholders.
- Hahn, Alan J. 1992. "Resolving Public Issues and Concerns through Policy Education." Information Bulletin #214, Cornell Cooperative Extension, Cornell University, Ithaca, NY.
- Hahn, Alan J. Interview by author, May 24, 1994, Ithaca, NY. Notes.
- Heimlich, Ralph E., ed. 1988. "Land Use Transition in Urbanizing Areas: Research and Information Needs." Proceedings from a Workshop Sponsored by the Economic Research Service, USDA and The Farm Foundation, Washington, DC.
- Heimlich, Ralph E. and Douglas H. Brooks. 1989. "Metropolitan Growth and Agriculture: Farming in the City's Shadow." Agricultural Economic Report 619, USDA-ERS, Washington, DC.
- Hirschl, Thomas A. and Warren A. Brown. 1991. "Population Change in New York State, 1980-1990." *Population & Development*, No. 11, Department of Rural Sociology, Cornell University, Ithaca, NY.
- Hirschl, Thomas A. and Nelson L. Bills. 1994. "Urban Influences on Farmland Use in New York State." *Population Research and Policy Review*. 13(1994): 179-194.
- Joyce, Lucy T. 1995. "Issues Facing Orange County Agriculture." Cornell Cooperative Extension of Orange County, Middletown, NY.
- Joyce, Lucy T. 1993. "Agriculture and Farmland Protection: New Local Initiatives." *Farming Alternatives for Sustainable Agriculture*, Vol. 2, No. 2, Cornell Farming Alternatives Program, Department of Rural Sociology, College of Agriculture and Life Sciences, Cornell University, Ithaca, NY.
- King, William H. 1977. "Land Ownership Characteristics in Goshen, NY." A.E. Res. 77-2, Department of Agricultural Economics, College of Agriculture and Life Sciences, Cornell University, Ithaca, NY.
- Lapping, Mark. 1988. "The Working Rural Landscape." Proceedings from The Preservation of Agriculture in the Hudson Valley, August 20, 1988. Mohonk Consultations, Inc. New Paltz, NY.
- Larson, Oscar W., III, Arn H. Pearson, Frederick H. Buttel, Tully Cornick and Susan Thompson. 1983. "Agricultural Change in Orange County: A Comparison with Trends in the U.S. and New York State, 1969-1978." Bulletin No. 130-36, Department of Rural Sociology, Cornell University, Ithaca, NY.

McHarg, Ian. 1969. "Design With Nature." American Museum of Natural History, Double Day Co., 501 Franklin Ave., Garden City, NY.

"National Agricultural Lands Study: An Inventory of State and Local Programs to Protect Farmland." 1981. USDA-SCS, Superintendent of Documents, US Government Printing Office, Washington, DC.

NYS Agriculture and Markets Law. 1994. "Article 25AA - Agricultural Districts." NYS Department of Agriculture and Markets, One Winners Circle, Albany, NY.

NYS Agriculture and Markets Law. 1993. "Article 25AAA - Agricultural and Farmland Protection Programs." NYS Department of Agriculture and Markets, One Winners Circle, Albany, NY.

Petersen, W.E. 1950. *Dairy Science: Its Principles and Practice*. J.B. Lippincott Company, New York, NY.

Pfeffer, Max J. and Mark B. Lapping. 1995a. "Support for Purchase of Development Rights". *Journal of Soil and Water Conservation*, 50(1): 30-33.

Pfeffer, Max J. and Mark B. Lapping. 1995b. "Prospects for a Sustainable Agriculture in the Northeast's Rural/Urban Fringe." *Rural Sociology and Development: Focus on Sustainable Agriculture*. JAI Press, Greenwich, CT.

Pfeffer, Max J. and Mark B. Lapping. 1994. "Farmland Preservation, Development Rights and the Theory of the Growth Machine: The Views of Planners". *Journal of Rural Studies*, 10(3): 233-248.

Popper, Frank J. 1978. "What's the Hidden Factor in Land Use Regulations?" *Urban Land*, 37(11): 4-6.

Ratner, Shanna and Peter Ide. 1985. "Strategies for Community Economic Development Through Natural Resource Use in Northern New York." A.E. Res. 85-10, Department of Agricultural Economics, Cornell University, Ithaca, NY.

Reaves, John S., ed. Circa 1980. "Education Materials for Community Resource Development - An Annotated Bibliography for Extension Professionals." Northeast Regional Center for Rural Development, Cornell University, Ithaca, NY.

Roberts, E.F. Interview with author, May 1994. Ithaca, NY. Notes.

Roberts, E.F. 1982. "The Law and the Preservation of Agricultural Land." Northeast Center for Rural Development, NYS College of Agriculture and Life Sciences, Cornell University, Ithaca, NY.

Scherer, Clifford. Interview with author May 31, 1994. Ithaca, NY. Notes.

Solberg, Erling D. 1967. "The Why and How of Rural Zoning." Agriculture Information Bulletin No. 196, USDA Economic Research Service, Superintendent of Documents, US Government Printing Office, Washington, DC.

Stanton, Bernard F. 1985. "Structural Issues in the Food and Agricultural Industry." *New York Agriculture 2000*, Published for Mario M. Cuomo, Governor, New York State, Albany.

Stanton, Bernard F. and Nelson L. Bills. 1996. "The Return of Agricultural Lands to Forest: Changing Land Use in the Twentieth Century." E.B. 96-03, Department of Agricultural, Resource, and Managerial Economics, Cornell University, Ithaca, NY.

Steiner, Frederick. "1981. Ecological Planning for Farmlands Preservation." Washington State University, American Planning Association, 1313 E. 60th St., Chicago, IL.

Thomas, Margaret G. 1989. RECOUPLE - Natural Resource Strategies for Rural Economic Development. Midwest Research Institute, 425 Volker Boulevard, Kansas City, MO.

Thomas, Margaret G. 1987. "A Rural Economic Development Source Book - Selected Training and Technical Assistance Materials." Midwest Research Institute, 425 Volker Boulevard, Kansas City, MO.

Vision 2010: California Agriculture. 1990. California Department of Food and Agriculture, Sacramento, CA.

Wallkill-Rondout Watershed Demonstration Program. "Fiscal Year 1993 Progress Report." Submitted by Cornell Cooperative Extension, USDA Soil Conservation Service, Agricultural Stabilization and Conservation Service and the Wallkill-Rondout Project Steering Committee.

Woodruff, Archibald M. 1983. "The Farm and the City in the Great Plains." Lincoln Institute Monograph #83-3, Lincoln Institute of Land Policy., Boston, MA.

Yaro, Robert D., Randall G. Arendt, Harry L. Dodson and Elizabeth A. Brabec. 1988. "Dealing With Change in the Connecticut River Valley: A Design Manual for Conservation and Development." Lincoln Institute of Land Policy and the Environmental Law Foundation, Boston, MA.

APPENDIX A. Orange County Agribusiness Survey

Grower Survey

The Agriculture and Farmland Protection Act of 1992 replaced the old Agricultural Districts Advisory Committee with an 11-member Agriculture and Farmland Protection Board. One aspect of the new Act provides counties with the opportunity to develop and implement local agricultural protection plans.

* To protect farmland from conversion to other uses such as residential and commercial development, it is necessary to plan county land use.

* But without supporting farming, no land planning scheme will succeed in keeping land in farms.

As an important step towards developing a county farmland protection plan, the Orange County Agriculture and Farmland Protection Board is surveying farmers to learn directly from you what measures would help most to keep farming viable, prosperous and worthwhile.

So that we have the information we need to make a plan that will help agriculture in Orange County, please take a few minutes to answer the questions in this survey.

Part I. Keeping Agriculture and Farming Viable

The most obvious way to keep farming viable would be to raise the price farmers receive for their crops, but adjusting prices is beyond the power of the county alone. Please rate the following measures from your perspective. Circle the number indicating how helpful you think each measure would be.

3 - very helpful

2 - somewhat helpful

1 - not helpful

A. Technical Advice

1. Providing marketing advice to farmers
3 2 1
2. Providing advice on how to manage woodlots for greater profitability
3 2 1
3. Advising how best to develop non-tillable portions of farmland
3 2 1
4. Advising how to preserve the best cropland through land preservation techniques
3 2 1
5. Providing technical assistance in diversifying farm production or in shifting to a new enterprise
3 2 1
6. Providing technical assistance in reducing farm operating costs
3 2 1
7. Assisting in finding a steady labor supply
3 2 1
8. Helping find someone to take over the farms of those leaving farming
3 2 1
9. Providing advice on estate planning
3 2 1

B. Marketing Assistance

1. Obtaining commitments from local institutions (schools, hospitals, the jail, etc.) to purchase local farm products
3 2 1

Agriculture and Farmland Protection Plan Grower Survey p.2

- | | | | | |
|----|--|---|---|---|
| 2. | Forming marketing or processing cooperatives | | | |
| | | 3 | 2 | 1 |
| 3. | Assisting in developing agri-tourism | | | |
| | | 3 | 2 | 1 |
| 4. | Promoting local farms and farm products | | | |
| | | 3 | 2 | 1 |

C. Legislative Initiatives

- | | | | | |
|----|---|---|---|---|
| 1. | Establishing a loan fund to help farmers get into on-farm processing or other enterprises that might increase net farm income | | | |
| | | 3 | 2 | 1 |
| 2. | Assisting beginning farmers by guaranteeing loans with deferred payments | | | |
| | | 3 | 2 | 1 |
| 3. | Offering reductions in school and land taxes in exchange for a commitment to stay in farming | | | |
| | | 3 | 2 | 1 |
| 4. | Minimizing threat of nuisance lawsuits by passing local right to farm ordinances | | | |
| | | 3 | 2 | 1 |
| 5. | Purchasing or transferring farmland development rights | | | |
| | | 3 | 2 | 1 |
| 6. | Establishing a County ombudsman to mediate between farmers and State or Federal regulators | | | |
| | | 3 | 2 | 1 |
| 7. | Reducing State and Federal regulations | | | |
| | | 3 | 2 | 1 |
| 8. | Advocating more farm friendly local land use decisions | | | |
| | | 3 | 2 | 1 |

D. Public Education Initiatives

- | | | | | |
|----|---|---|---|---|
| 1. | Organizing farm tours for town and city dwellers to increase their understanding of farming | | | |
| | | 3 | 2 | 1 |
| 2. | Encouraging schools to sponsor summer work on farms for young people | | | |
| | | 3 | 2 | 1 |
| 3. | Improving and increasing what is taught about agriculture and farming in local schools through such programs as "Ag in the Classroom" | | | |
| | | 3 | 2 | 1 |
| 4. | Officially recognizing the value of productive farmland, and the rural character and beauty it provides | | | |
| | | 3 | 2 | 1 |

E. Please rank in order of importance

___ Technical Advice ___ Marketing Assistance ___ Legislative Initiatives ___ Public Education

Agriculture and Farmland Protection Plan Grower Survey p.3**Part II Taxation**

1. Some towns offer farmers reductions in local taxes in exchange for their commitment to keep farmland in farming. How much would you favor your town adopting this kind of easement? (circle one)
1. strongly oppose 2. somewhat oppose 3. neutral 4. somewhat favor 5. strongly favor
2. How fair do think it would be for towns to require a commitment to soil conservation and IPM in exchange for tax reductions to farmers? (circle one)
1. very unfair 2. somewhat unfair 3. neutral 4. somewhat fair 5. very fair

Part III The Agricultural Districts Law

The State of New York instituted agriculture districting more than 20 years ago to preserve and protect agricultural lands.

1. How familiar are you with agricultural districts?
1. not at all 2. somewhat 3. very
2. Do you think the system of ag districts has served the purpose of preserving agriculture and protecting farms?
1. yes 2. somewhat 3. no
3. Do you think more needs to be done by the State to preserve farmland?
1. yes 2. no
4. Please describe any additional measures that you believe would be helpful.
5. Do you think local planning boards need more information about the value of protecting agricultural lands in order to make more effective land use decisions?
1. yes 2. no If yes, what kind of information?

Part IV Your Farm

1. In what town (s) is your farm located? _____
2. Is your farm an upland or black dirt farm, or both? (circle one)
3. How many years have you operated your farm? _____
4. Describe your farm operation. If more than one applies, then please rank in order of principal enterprise

_____ Dairy	_____ Horticultural retail
_____ Field crops	_____ Horticultural wholesale
_____ Livestock	_____ Fruit
_____ Horses	_____ Other (please specify) _____
5. How many year-round employees do you have working on the farm?
none 1 or 2 3 or more
6. Do you employ seasonal laborers? _____yes _____no
If yes, are your seasonal laborers _____domestic _____off-shore _____both?

Agriculture and Farmland Protection Plan Grower Survey p.4

7. How many households does the farm you operate support?
1 1-2 3-4 other _____
8. Approximately how many more years do you expect to farm?
no longer farming 1-5 5-10 10-15 more than 15 years other _____
9. Do members of the next generation in your family intend to farm after you?
yes no
10. Are you personally more interested in selling your farmland than in continuing to farm?
yes no
11. If yes, why?
12. About how much of your net family income in 1994 came from your farming operation?
1. less than 25% 2. 25-49%
3. 50-74% 4. 75-100%
13. Are you a member of one or more county agricultural organizations? (check all that apply)
____ Cornell Cooperative Extension ____ Organic Farming Association ____ Grange
____ Farm Bureau ____ Growers' Association ____ Other (specify) _____

Comments ?

THANK YOU !!!!!

If you would you like to receive more information about our efforts in Orange County please complete and return this portion with your survey by June 30th. Be assured that the confidentiality of your reply will be protected.

Would you like to participate in the Agriculture and Farmland Protection Board's work of creating a County plan?

Please circle all that apply.

- a. help organize local or town meetings
- b. have opportunity to discuss my views more fully
- c. give advice
- d. keep informed about meetings and other activities through mailings
- e. be non-voting member of the Board
- f. other: _____

Name _____

Address _____

Agriculture and Farmland Protection Board Agribusiness Survey

The Orange County Agriculture and Farmland Protection Board wants to identify the needs of agribusinesses and the trends towards future growth. Your answers will help the Board to develop strategies to preserve and promote agriculture in Orange County. If you need more space to answer please use the back of the sheet as well.

Describe your type of business: _____

What are the 3 most important issues facing farming in Orange County as it relates to your business?

1. _____
2. _____
3. _____

Has business (in terms of dollar volume) increased or decreased in the past five years?

What is in store for the future of your farm-related business? Over the next five years, do you plan to:

- _____ Expand services or sales to farmers
- _____ Expand services or sales to non-farmers
- _____ Phase out services or sales to farmers
- _____ Stay the same

What are the reasons for your decision?

What are the problems related to dealing with local farmers and what particular problems should be looked into and handled on a local level?

Is the loss of farmland in Orange County of concern to you? Why or why not?

In your opinion, what initiatives should county/local government take to help keep farming viable in Orange County?

Would you like to participate in the Board's work of creating a County plan? (check all that apply)

- _____ help organize local or town meetings
- _____ have opportunity to discuss my views more fully
- _____ give advice
- _____ become a non-voting member of the Agriculture and Farmland Protection Board
- _____ keep informed about meetings and other activities through mailings
- _____ other: _____

PLEASE RETURN YOUR SURVEY BY JUNE 30TH. THANK YOU FOR YOUR ASSISTANCE.

Name(optional) _____ Address(optional) _____

APPENDIX B. Orange County Agricultural and Farmland Protection Board Communication Strategies

The Orange County Agricultural and Farmland Protection Board used several communication strategies throughout the year-long plan development process in order to create a document which reflected the needs and concerns of the agricultural industry and of county residents. AFPB members met face-to-face with an untold number of fellow farmers, business professionals, and county residents to solicit input. Surveys were sent to growers and agribusinesses throughout the county. Nearly 200 respondents provided input on a myriad of topics, organized into four overall categories of marketing assistance, education, legislative initiatives, and technical assistance. The project coordinator organized eight focused discussion groups with citizens, growers and agricultural students to gather input. The focus groups reached over 100 people. In late September, the AFPB cosponsored a day-long Agricultural Issues Tour to identify some issues the farm community had raised as important. The target audience for the tour was local officials, county and state representatives, business people and other interested residents of Orange County. The AFPB reached another 100 people through that day's series of events. Lastly, the AFPB scheduled a Public Hearing on the proposed protection plan. Over 200 interested county residents crowded the Legislative Chambers and 30 of them spoke in support of the proposed protection plan. There were no dissenters among the participants. Additionally, the project coordinator published articles monthly in the Cornell Cooperative Extension *AgFocus* outlining the status of the planning process, asking for input and encouraging people to help with the process.

The project coordinator also made five radio appearances to discuss the planning process and ask for input.

Eighteen volunteers from the farm and related agricultural business communities worked with the 11-member Board on the protection plan writing effort. Recommendations for action were developed by one of four task groups or working committees. The four themes the task groups targeted evolved from the intensive information gathering done in the early months of the planning process. These four themes were land use, regulations, public education and profitability. The draft protection plan originally contained 23 recommendations for action. These recommendations were based on issues raised from the surveys, focused group meetings, individual interviews, and the public events the AFPB sponsored.

The draft Orange County Agricultural and Farmland Protection Plan was submitted to the Orange County Legislature for its approval in December 1995. Some of the recommendations for action that can be accomplished on the County level are already underway. Due to the complex nature of the issues and recommendations presented in the proposed plan, additional meetings with the County Executive and key County Legislators were held for clarification and compromise. The Plan was approved by the County Legislature on April 12, 1996, and the AFPB submitted the plan to the Commissioner, New York State Department of Agriculture and Markets, for his approval. The Plan is to be a living document, adapting to meet the ever-changing challenges facing agriculture as it moves into the next century.

APPENDIX C. Orange County Agricultural and Farmland Protection Plan

In 1992 New York State gave local governments more responsibility to develop plans and strategies to enhance agricultural and farmland protection programs. These new rights were contained within the amended New York State Agricultural Districts Law in a section entitled the Agricultural Protection Act.

The Agricultural Districts Law recognizes agricultural lands as an irreplaceable resource. It seeks to create an economic and regulatory climate which will encourage farmers to continue farming as well as preserving agricultural lands. The Law is the State's most effective tool for maintaining land in agriculture.

Counties and municipalities know best which lands should be maintained. It is also local governments which can best say how to maintain agricultural lands against development pressures, the high costs of doing business and regulatory constraints in their own areas. The New York State Department of Agriculture and Markets recognized this fact and recommended changes to the Law, to bring local governments more fully into the process.

The Agricultural Protection Act authorized counties to form an Agricultural and Farmland Protection Board (AFPB). Orange County formed its Board out of the previous Agricultural Districts Advisory Committee. Representatives from the Planning Department, Cornell Cooperative Extension, the County Legislature, Real Property Tax Services, Soil and Water Conservation District, and a land trust participate on the Agricultural and Farmland Protection Board. Additionally, the Board includes four farm operators and one agribusiness operator.

The Agricultural Protection Act also provided county governments with the opportunity to apply for State grant money, to be matched locally. The grant money was expressly for the purpose of developing county agricultural and farmland protection plans. Orange County, through its AFBP, was one of the first counties to apply for the New York State grant. The Orange County Planning Department received the grant effective November 1, 1994. Cornell Cooperative Extension was contracted as the consultant to perform the services. The AFBP had outlined what it hoped to accomplish and developed a timeline to write the draft protection plan even before the planning grant was received.

To create a document which truly reflected the needs and concerns of the agricultural industry and of county residents, the AFBP used several communications strategies. AFBP members talked to an untold number of fellow farmers, business professionals, and county residents face to face to solicit input. Surveys were sent to growers and agribusinesses throughout the county. Nearly 200 respondents provided input on a myriad of topics, organized into four overall categories of marketing assistance, education, legislative initiative, and technical assistance. The project coordinator organized eight focused discussion groups with citizens groups, growers and agricultural students to gather input. The focus groups reached over 100 people. In late September 1995, the AFBP cosponsored a day-long Agricultural Issues Tour to identify some issues the farm community had raised as important. The target audience for the tour was local officials, county and state representatives, business people and other interested residents of Orange County. The AFBP reached another 100 people through that day's series of events. Lastly, the AFBP scheduled a Public Hearing on the proposed protection plan. Over 200

concerned citizens crowded the Legislative Chambers, and 30 of them spoke in support of the proposed protection plan. There were no dissenters among the participants. Additionally, the project coordinator published articles monthly in the Cornell Cooperative Extension *AgFocus* outlining the status of the planning process, asking for input and encouraging people to help with the process. The project coordinator also made five radio appearances to discuss the planning process and ask for input.

Eighteen volunteers from the farm and related agricultural business community worked with the 12-member Board on the protection plan writing effort. Recommendations for action were developed by each of four task groups or working committees. The four themes the task groups targeted evolved from the intensive information gathering done in the early months of the planning process. These four themes were land use, regulations, public education and profitability. Profitability has come to be titled equitable taxation policies. The draft protection plan contains 17 recommendations for action. These recommendations were based on issues raised from the survey, focused group meetings, individual interviews, and the public events the AFPB sponsored.

The proposed draft Orange County Agricultural and Farmland Protection Plan is hereby submitted to the Orange County Legislature for its approval. Some of the recommendations for action that can be accomplished on the County level are already underway. Some recommendations can only be implemented with New York State legislative action. Therefore, their implementation would require Orange County to endorse such action. Lastly, the plan contains recommendations which will require Orange County and New York State legislators to lobby the United States Congress to act. Upon approval of the plan by the County Legislature, it shall submit it to the Commissioner, New York State Department of Agriculture and Markets, for his approval.

The proposed plan is to be a living document, changing to meet the ever-changing challenges facing agriculture as it moves into the next century.

RECOMMENDATIONS

1. The Orange County Legislature will authorize funds of \$30,000 per year to be used by the AFPB to promote agribusiness economic development in Orange County.
2. The AFPB educate local municipal officials and the public about farming, including but not limited to:
 - its favorable taxes paid/services required characteristics;
 - its value as an industry;
 - its aesthetic and environmental contributions to the community;
 - the protection afforded to agricultural activities through the Agricultural Districts Law;
 - how zoning affects agriculture.

The AFPB would accomplish the education goal primarily through the efforts of the Agricultural Economic Development Director. Absent that, the AFPB would establish a speakers' bureau to make presentations.

3. Cornell Cooperative Extension work through its 4-H Program to improve the "Ag in the Classroom" series and its use by classroom teachers in grades K-6th. This classroom education effort would be supplemented by other special events, speakers, displays, and programs.
4. Orange County Planning Department incorporate as part of the Master Plan Review process a detailed plan to fully evaluate the potential for programs to preserve farmland, scenic vistas and other open space, including options such as Purchase of Development Rights (PDR), Transfer of Development Rights (TDR), conservation easements, and others.
5. Orange County Legislature endorse the further study of efforts of any municipality to make farmland more affordable; for example, TDR in the Town of Warwick.
6. The AFPB be available to work with local municipalities to review existing and proposed local laws/ordinances to identify "ag insensitive" aspects, especially conflicts with New York State Agricultural Districts Law. Pursue proposed changes where such aspects are identified. Likewise, the AFPB identify "farmer friendly" and "land preservation friendly" aspects of local laws/ordinances and publicize them to other municipalities.
7. Orange County Legislature will adopt a policy supporting fair taxation to all farmers in Orange County so that they remain productive and competitive. The AFPB will examine various components of this issue including:
 - increase the exemption limit for New York State estate taxes;
 - extend Section 405B of the Real Property Tax Law to new farmland and farm structures;
 - implement "value-in-use" assessment;
 - eliminate real property taxes on specific-use farm buildings;
 - eliminate all special assessments on productive agricultural land, regardless of when special district was organized;
 - create circuit breaker tax credits for New York State farm owners.
8. Orange County Legislature endorse the New York State Legislature's modifying the formula for valuing organic soils. The effort should be in cooperation with the AFPB, the Farm Bureau, the Orange County Vegetable Improvement Association, Wallkill Valley Drainage Improvement Association, and other grower groups.
9. Orange County Legislature will urge New York representatives to the United States House and Senate to support US Senate and House bills which would increase the exemption limit for estate taxes on family businesses, including family farming operations.
10. The AFPB work with utility companies serving Orange County to explore opportunities to reduce high energy costs to the farm industry. Enlist the support of the Farm Bureau and other grower groups in this effort.
11. The Orange County Legislature will reaffirm New York State's right-to-farm law and will encourage towns to adopt their own right-to-farm ordinance.

12. The Orange County Legislature draft policy encouraging towns to include agricultural notes on all town zoning and subdivision maps. The policy should also encourage the towns to require developers to research and note on plan maps, land proposed for development lying within an agricultural district as part of the subdivision application procedure.
13. The AFPB inform real estate firms and associations about buyer notification requirements and encourage realtors to provide such notification to buyers when initially showing property that is within an agricultural district.
14. The AFPB educate municipalities as to the importance of local right-to-farm ordinances. The AFPB assist municipalities in drafting an ordinance, using the State right-to-farm law as a model.
15. The AFPB organize meetings by farm organizations with agency representatives to learn first-hand about changes in regulations and how to best prepare for and meet each agency's standards. The meeting should be held in the off-season, preferably in January but not after 15 February. Such meetings would be scheduled as needed, until the long-term goal of a consolidated team inspection is realized.
16. The Orange County Legislature adopt a resolution and forward it to the New York State Legislature requesting a single team to visit farm operators to inspect for all agencies. The purpose of such a team is to eliminate overlapping oversight by several agencies.
17. The Orange County Legislature adopt a resolution and forward it to the New York State Legislature to urge reform of Worker's Compensation laws and regulations to reduce cost.

DISCUSSION

Agriculture, with its affiliated businesses, is the largest industry in Orange County. Orange County has 641 farms, totaling 102,733 acres. The market value of all agricultural products sold from the County was \$74.6 million, according to the 1992 Census of Agriculture. (See Recommendation #1)

Land is the farmers' major production cost, and land in Orange County is not affordable for farmers. Most agricultural land is included in a zoning district with residential and industrial land uses. The greater the competition for nonfarm use of land, the higher the land values. When land prices reflect their potential value for industrial and/or housing development, farmers cannot compete with speculators/developers. (See Recommendations #2, #4 and #5).

The property taxes that come with the land also represent a significant cost to farmers. Local assessments reflect highest and best use, not present use -- creating unfair and excessive land tax burdens for Orange County farmers. (See Recommendations #7, #8, and #9)

Farming is unappreciated for its contributions to the local tax base. Agriculture contributes nearly three times the revenues that it receives back in services. While there is no argument that a rural residential acre lot with a house on it will generate more income than an acre of cattle or corn, that argument does not look at the cost of providing services to that new rural home. All recent studies conducted on the cost of community services (COCS) indicate that farms contribute a net gain to the tax base. The American Farmland Trust figures compiled for the mid-

Hudson Valley COCS indicate that an average of \$ 1.12 are spent on public services for every dollar raised from the residential sector. Conversely, agriculture and open space consume only \$.35 in services per dollar of revenue, leaving \$.65 to offset other expenses. Such disparity is unfair to farm operators.

It is more economical to service settlements which are concentrated in areas with existing infrastructure. Coordinated efforts at all levels of government should be concentrated on preventing "sprawl" development. Adopting growth management plans and making public spending decisions that reinforce those plans will help eliminate haphazard development. Concentrating development where infrastructure already exists, that is cities and villages, has the coincidental effect of revitalizing those areas. It also has the effect of eliminating the patchwork look of the countryside that results from sprawl, leaving larger contiguous areas for farming and easing the conflict between farmers and nonfarm residents.

While farmers are offered some property tax abatement by the ceiling on land assessment afforded them by the New York State Agricultural Assessment Program which is a part of the Agricultural Districts Law, efforts to ease the farmers' tax burden are inadequate. Property assessed according to its present use is one method to accomplish that, as several recent court cases in NY have demonstrated. Tab D contains a summary list of cases on "value-in-use" assessment. Local technical experts believe that these cases have far-reaching beneficial effects for farmers in Orange County. Adoption of "value-in-use" assessment would compel local assessors to calculate farm assessments using fair and accepted methodologies. (See Recommendation #7)

The Agricultural Districts Law exempts farm properties from special districts assessments. Special districts may include fire or sewer, for example. Real Property Tax Law dictates that where special districts were in place before agricultural districts, properties are not exempt from the special district taxes, even if otherwise eligible for agricultural assessment. The Law also exempts certain farm buildings from property taxes. These are specific-use farm buildings, especially feed storage buildings which are deemed to have no other uses. However, when farmland is converted to nonfarm uses, all farm buildings are considered of little or no value. They are razed to develop the site.

Exempting all productive farm operations from special district tax assessments regardless of when the district was organized is a recommended method to ease the farmers' tax burden. It is further recommended that farmers be exempted from taxes on all specific-use farm structures. Thirdly, extending Section 405B of the Real Property Tax Law to new farmland and farm structures would allow farmers to compete more equitably with commercial and industrial developers. (See Recommendation #7)

Another possible method to make the farmers' tax burden more manageable is the circuit-breaker tax credit program, which is designed to significantly offset farm operators' property taxes. Two states, Michigan and Wisconsin, have circuit-breaker tax programs for their farmers. The programs make farmers eligible to receive an income tax credit from the state for the amount which the property taxes paid exceeds a certain percentage of household income. Both Orange County and New York State Farm Bureaus support the circuit-breaker tax initiative. (See Recommendation #7)

Another issue affecting the affordability of land for farming in Orange County is the formula dictated by New York State to calculate organic soil (black dirt) values for the Agricultural Assessment Program. The formula uses inputs that are inappropriate for actual black dirt

farms and yields unjustifiably high values. The issue of unreasonable black dirt assessments has been considered locally for some time. (See Recommendation #8)

The US Department of Agriculture's Natural Resource Conservation Service in cooperation with the Soil and Water Conservation District has completed remapping of the County's organic soils to afford appropriate assessment reductions where these soils diminished in value. This past year, Orange County Real Property Tax Services has begun to work with local assessors in the towns with organic soils to develop more appropriate valuation procedures. The town of Wawayanda has completed the revaluation of its muck soils.

Yet a third issue affecting the affordability of farming is the opportunity to pass the farm business to the next generation. The current Federal estate tax rate stands at 55 percent of taxable assets above \$600,000. In Orange County where land values are so high, the value of just the farm land easily can reach or exceed the maximum value. Thus, heirs frequently have to liquidate all or part of the land base of the farm to satisfy the estate tax bill. That leaves the next generation with an inadequate land base on which to farm profitably. (See Recommendations #7 and #9)

Both Senate Bill #S 1086 and House Bill #HR 2190 propose creating a family business tax credit of \$ 1.5 million. The bills also exclude 50 percent of family business assets above the \$ 1.5 million, resulting in an estate tax rate of approximately 27 percent on the remaining assets. A change of this magnitude in the exemption limit, coupled with the other features, would provide direct benefit to family farm operations in Orange County in reducing the estate tax burden. Farm Bureau also supports these bills.

According to the New York Agricultural Statistics Service, fuel and oil and a category which includes electricity are among the highest production expenses for farm operators, after land ownership. New York State utility rates are higher than our competing agricultural states, putting our farmers at a competitive disadvantage with other farmers. As in all areas of production, operating costs can be reduced. The AFB already has begun discussing with representatives of the utility companies how to reduce this operating expense for Orange County farmers. (See Recommendation #10)

It is difficult for farmers to operate profitably for a variety of reasons. One that bears critical examination is the cost of workmen's compensation insurance. Compensation insurance is an operating cost which farm operators must pay and over which they have no cost control. At Tab J is an example of just one farm's compensation insurance cost. The cost has risen exponentially over the four-year period shown. (See Recommendation #17)

Farm operations employing five or more seasonal laborers are subject to inspections by several agencies. Those agencies which inspect Orange County farms include both Federal and New York State Departments of Labor, both New York State and Orange County Departments of Health, and the Employment Standards Administration. Occupational Health and Safety Administration may inspect every two or three years. Farm Worker Legal Services representatives visit. The Naturalization and Immigration Service occasionally inspects. Most recently farmers are reporting that the Federal Bureau of Investigation will commence inspections.

There is considerable overlap in agency duties; however, there is no working communication between and among agencies to prevent duplication of efforts. A collaboration was attempted in the recent past between the Federal and New York State Departments of Labor. Such

a collaboration is in the interest of farm operators, and tax payers in general, and should be pursued. The agency which requires the strictest standards should provide one team member to the recommended two-person team. (See Recommendations #15 and #16)

Orange County has been one of New York State's fastest growing counties. Transition from rural to an increasingly urban county has resulted in conflicts, such as increased traffic and objections to familiar farm practices, manure handling and chemical use, as examples. Also, problems of noise associated with normal farm operations at unusual hours is another source of potential conflict.

Farmers make up a very small percentage of the overall population, and this percentage is reflected in the make-up of the governing bodies of local communities. Additionally, the general populace has a poor level of understanding about modern-day farming. Ironically, the same people who elect the local officials, accept and abide by their policies, and sometimes even complain about standard farm practices often highly value the "community character" provided by farming and its use of the landscape. (See Recommendations #2, #3 and #6)

New York State is a home rule state. Towns and municipalities have considerable power to enact laws, which may result in discrepancies with State law. The 1992 amendment to the Agricultural Districts Law, called the Agricultural Protection Act, attempts to limit the extent to which local governments enact local laws or ordinances which will adversely affect or restrict farm structures or farm practices. The Agricultural Protection Act also specifies that before a transfer of real property, the buyer be notified that the property is wholly or partially within an agricultural district and that farming activities will occur. Improper notification or no notification gives rise to homeowner complaints against farmers, in direct contravention of another clause of the law, that is the Right-to-Farm clause, section 308. The towns of Montgomery, Warwick and Wawayanda include agricultural notes on zoning and planning maps now. Many residents of Orange County have no immediate or even distant connection to the land. They do not understand that farming is a business, an industry. Children no longer connect the food they see on their tables with its origins in fields near their homes. Without the knowledge and appreciation of what the neighboring fields provide them, they will have little interest or incentive to sustain the farm industry in Orange County. The need to educate these people about the realities of modern farming -- the perceived inconveniences that may accompany the bucolic setting -- and to garner their support for ag-sensitive local policy-making cannot be overstated. (See Recommendations #2, #11, #12, #13, and #14)

Most towns have a stated goal of maintaining traditional patterns of urban and rural, and preserving agriculture and open space. Production agriculture is the best source of open space as well as scenic views. Several land preservation methods are available to protect and preserve productive farmland, scenic vistas, historic areas and other open space. Purchase of Development Rights (PDR), Transfer of Development Rights (TDR), and conservation easements are just a few. Such programs are best when designed for a particular town, and planned by town officials and residents working together to accomplish certain goals. The County can play an important role in coordinating the necessary up-front studies and providing program oversight/technical assistance. (See Recommendations #4 and #5)

APPENDIX D. Resource Agency Addresses

Cornell Cooperative Extension of Orange
County
Education Center, Dillon Drive
Community Campus
Middletown, NY 10940

Orange County Department of Planning
124 Main Street
Goshen, NY 10924

Orange County Real Property Tax Services
124 Main Street
Goshen, NY 10924

Orange County Water Authority
35 Matthews Street, PO Box 997
Suite 301
Goshen, NY 10924

Orange County Partnership
40 Matthews Street, Suite 108
Goshen, NY 10924

Orange County Citizens Foundation
35 Matthews Street
Goshen, NY 10924

Orange County Chamber of Commerce
40 Matthews Street, Suite 103
Goshen, NY 10924

The Chamber of Commerce, Inc.
47 Grand Street
Newburgh, NY 12550

Tri-State Chamber of Commerce
10 Sussex Street
Port Jervis, NY 12771

Orange County Farm Bureau
193 Big Island Road
Pine Island, NY 10921

Orange County Soil and Water Conservation
District
225 Dolson Avenue, Suite 103
Middletown, NY 10940

Orange County Land Trust
PO Box 2442
Middletown, NY 10940

League of Women Voters of Orange County
4 Woods Place
Middletown, NY 10940

USDA-Natural Resources Conservation Service
Orange County Office
225 Dolson Avenue, Suite 103
Middletown, NY 10940

USDA-Natural Resources Conservation Service
New York State Office
441 South Salina Street, Suite 354
Galleries of Syracuse
Syracuse, NY 13202

USDA National Agricultural Statistics Service
ERS-NASS
P.O. Box 1608
Rockville, MD 20849-1608 or
Toll Free Order - 1-800-999-6779

USDA Economic Research Service
1301 New York Avenue, N.W.
Washington, DC 2005-4788

US Environmental Protection Agency
Region 2
290 Broadway
New York, New York 1007-1866

US Geological Service-NY District
PO Box 1660
Albany, NY 12201

US Department of Commerce, Bureau of the
Census
Customer Services, Data User Services Division
Washington, DC 20233

NYS Department of Transportation
Map Information Unit
State Campus, Bldg. 4, Room 105
Albany, NY 12232

NYS Dept. of Environmental Conservation
Division of Regulatory Services, Region 3
21 South Putt Corners Road
New Paltz, NY 12561-1696

NYS Office of Real Property Services
Geographic Information Systems
16 Sheridan Avenue
Albany, NY 12210-2714

NYS Office Comptroller
Alfred E. Smith State Office Building
South Swan Street
Albany, NY 12236

NYS Agricultural Statistic Service
Department of Ag & Markets
1 Winners Circle
Albany, NY 12235

NYS Legislative Commission on Rural
Resources
Legislative Office Building
Albany, NY 12247

The Soil Information Systems Laboratory (SISL)
Department of Agronomy
7th Floor Bradfield Hall
Cornell University
Ithaca, NY 14853

Cornell Institute for Social and Economic
Research (CISER)
201 Caldwell Hall
Cornell University
Ithaca, NY 14853-2602

Survey Research Facility
Surge 3 Building, Judd Falls Road
Cornell University
Ithaca, NY 14853

Cornell Laboratory for Environmental
Applications of Remote Sensing (CLEARS)
452 Hollister Hall
Cornell University
Ithaca, NY 14853-3501

Department of Agricultural, Resource, and
Managerial Economics
Warren Hall
Cornell University
Ithaca, NY 14853

Department of Rural Sociology
Warren Hall
Cornell University
Ithaca, NY 14853

Cornell Farming Alternatives Program
Warren Hall
Cornell University
Ithaca, NY 14853

American Farmland Trust
New York Field Office
77 Van Dam Street, #8
Saratoga Springs, NY 12866

Jefferson County Job Development Corps.
Business Development and Agricultural
Specialist
800 Starbuck Ave., Suite 800
Watertown, NY 13601

OTHER A.R.M.E. STAFF PAPERS

No. 95-09	Asymmetry In Wholesale - Retail Food Price Transmission In An African Metropolitan Area: The Case of Kinshasa (Zaire)	Bart Minten Steven Kyle
No. 95-10	Farm Lending Program Challenges for the Farm Service Agency	Eddy L. LaDue
No. 95-11	Intellectual Property Protection for Indonesia	W. Lesser
No. 95-12	Tax Traps and Opportunities Associated with Family Farm Transfers	Stuart F. Smith
No. 95-12a	Future of the Grape Industry: An Eastern Perspective	Gerald B. White
No. 95-13	Regional Impact of Change in Dairy Trade Policies on the Northeast U.S. and Central Canada Dairy Sectors	Maurice A. Doyon James E. Pratt Andrew M. Novakovic
No. 96-01	Farmland Preservation: Agricultural Districts, Right-to-Farm Laws and Related Legislation	Nelson Bills
No. 96-02	The Effects of Increased Trade on the U.S. Fruit Sector	Enrique E. Figueroa
No. 96-03	The Competitiveness of Mexican and Caribbean Basin Horticultural Products in the U.S. Market	Enrique E. Figueroa
No. 96-04	International Treaties and Other Legal and Economic Issues Relating to the Ownership and use of Genetic Resources	W. Lesser